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Economic Development, Technological Change, and Growth

Urban, Rural and Regional Economics

Vorwort

Es ist uns ein Vergnügen, das Konferenzband „Interdisziplinäre Managementforschung V/ Interdisciplinary Management Research V“ vorstellen zu können. Ein Buch aus dieser Reihe ist zum ersten Mal 2005 erschienen, als Resultat der Zusammenarbeit zwischen der Wirtschaftsfakultät in Osijek, Kroatien und der Hochschule Pforzheim, Deutschland, und insbesondere durch das Magisterstudium des Management. Die Zusammenarbeit der zwei genannten Partnerinstitutionen ist unter anderem durch jährliche wissenschaftliche Symposien gekennzeichnet, auf welchen interessante Themen aus verschiedenen Bereichen der Wirtschaft und des Managements vorgestellt und folglich in einem Band veröffentlicht werden. Jedes Jahr ziehen die wissenschaftlichen Symposien Akadamiker anderer kroatischer, sowie ausländischer Universitäten, einschließlich Ungarn, Polen, Rumänien, Slovenien, Montenegro, Bosnien und Herzegovina und Serbien an, die ihren wissenschaftlichen und profesionellen Beitrag zur Diskussion über zeitgenössische Fragen aus dem Bereich des Managements leisten. Die Aktualität der behandelten Fragen, der internationale Charakter im Hinblick auf Themen und Autoren, die höchsten Standards der Forschungsmethodologie sowie die Kontinuität dieser Konferenzreihe wurden auch von der internationalen akademischen Gemeinde erkannt, weswegen sie auch in internationalen Datenbanken, wie Thomson ISI, RePEc, EconPapers und Socionet, zu finden ist.

Die neueste Ausgabe von „Interdisziplinäre Managementforschung V/ Interdisciplinary Management Research V“ umfasst 67 Arbeiten geschrieben von 121 Autoren. Der Erfolg früherer Ausgaben ging über die Grenzen der Länder hinaus, deren Autoren schon traditionell Teil der Reihe waren und zog neue Autoren aus Irland, Israel, Italien, Südafrika, Belgien, Mazedonien, der Schweiz und Großbritannien an. Jedes der Autoren leistete einen bedeutenden Beitrag zu diesem fachübergreifenden Managementforum.

Als Herausgeber dieses Bandes hoffen wir, dass diese Reihe auch weiterhin Akademiker und Profesionelle dazu bewegen wird, in Forschung und Beruf die höchsten Standards zu beanspruchen, und dass es weiterhin als Ansporn zu weiteren Formen von Zusammenarbeit unter Teilnehmern dieses Projektes dienen wird.

Prof. Dr. Dražen Barković

Prof. Dr. Bodo Runzheimer

Foreword

It is our pleasure to introduce the book "Interdisziplinäre Managementforschung V/ Interdisciplinary Management Research V" to you. The first volume appeared in 2005 as a result of co-operation between the Faculty of Economics in Osijek (Croatia) and Pforzheim University (Germany), particularly through the postgraduate programme "Management". The co-operation between these partnering institutions has been nurtured, amongst else, through annual scientific colloquiums at which interesting topics in various fields of economics and management have been presented and later published in the proceedings. Over the years, the scientific colloquiums have drawn the attention of academic scholars from other Croatian universities, as well as from other countries including Hungary, Poland, Romania, Slovenia, Montenegro, Bosnia and Herzegovina and Serbia, each making a contribution in academic and professional discussion about contemporary management issues. Actuality and importance of the issues discussed, the international character of the book in terms of authors and topics, the highest standards of research methodology and continuity in publishing have been recognized by the international academic community, resulting in the book now being indexed in world-known data bases such as Thomson ISI, RePEc, EconPapers, and Socionet.

The latest edition, i.e. "Interdisziplinäre Managementforschung V/ Interdisciplinary Management Research V" encompasses 67 papers written by 121 authors. The success of former editions has echoed beyond the traditionally participative countries and authors and now includes new authors from Ireland, Israel, Italy, South Africa, Belgium, Macedonia, Switzerland and the United Kingdom, each providing a valuable contribution to this interdisciplinary management forum.

As editors we hope that this book will continue to encourage academic scholars and professionals to pursue excellence in their work and research, and to provide an incentive for developing various forms of co-operation among all involved in this project.

Prof. Dr. Dražen Barković

Prof. Dr. Bodo Runzheimer

Management

UNIVERSITÄT UND BERUF
GEDANKEN UND ANREGUNGEN

Günther Gottlieb, Ph.D., Augsburg

Abstract:

The paper deals with innovative approaches to university education. Since college graduates face new challenges due to fast-paced developments in the business world, the paper discusses the need for universities to change their attitude and pay more attention to equipping students with key competences necessary for a successful carreer.

JEL classification: I23

Keywords: university education, key competences, employability

1. Die Fragestellung

An der Philologisch-historischen Fakultät der Universität Augsburg gab es vor einigen Jahren eine lebhafte Diskussion über die Frage, ob man 'Stilistikum' und 'Rhetorikum' als obligatorische Angebote einführen und dafür auf einige Veranstaltungen, beispielsweise in den älteren Sprachstufen etwa des Deutschen oder Englischen verzichten solle. Ich gehörte zur, sagen wir progressiven Gruppe der Fakultätsmitglieder. Wir konnten uns aber nicht durchsetzen. Alles blieb beim Alten. Schade, wir haben damals einen wichtigen Schritt nach vorne verpasst und den, was die Universität Augsburg betrifft, bis heute nicht nachgeholt.

2. Zur Ausgangslage

Eines der 'Zauberworte', die in diesem Zusammenhang immer wieder bemüht werden, sind die *Schlüsselqualifikationen.* Was versteht man darunter? Wie lernt man sie? Sind sie wichtiger als Fachwissen? Oder kommt es nur auf die richtige Organisation der akademischen Lehre an?
Ich nehme mein Fach, die Geschichte, als Beispiel! Bedenken wir, da nur wenige Absolventen eines Geschichtsstudiums die Chance haben, als Geschichtswissenschaftler an der Universität zu bleiben oder sich als Geschichtslehrer ständig mit Geschichte zu beschäftigen. Was machen alle anderen, die vielen Studierenden, die Geschichte beziehungsweise eines ihrer Teilgebiete zum Schwerpunkt eines Bachelorstudienganges oder eines nachfolgenden Magisterstudienganges ausgewählt haben? In welchen

Berufsfeldern können sie Arbeit finden? Die Frage stellt sich ebenso für Literatur- und Sprachwissenschaftler, Politikwissenschaftler, Pädagogen und in abgewandelter Form auch für Absolventen der Rechtswissenschaften, Wirtschaftswissenschaften oder naturwissenschaftlicher Disziplinen. In gewisser Weise treten alle nach Abschluss ihrer Studien als Bachelor, Magister, als Inhaber eines Diploms oder als Promovierte als Konkurrenten auf dem globalen Markt gegeneinander an. Ausgestattet nur mit Fachwissen? Oder auf eine komplexe Berufswelt vorbereitet?

Ich will die Ausgangslage an drei Beispielen illustrieren: Die durch ihre Beziehung zu Prinz William von England bekannt gewordene Kate Middleton hat ihr Studium mit dem BA in Kunstgeschichte abgeschlossen und arbeitet jetzt bei einer renommierten englischen Mode-Einzelhandelskette als Einkäuferin für Accessoires. An der Universität Augsburg war eine Archäologin mehrere Jahre als persönliche Referentin des Rektors tätig und arbeitet jetzt als Referentin am Akademischen Auslandsamt. Eine andere Augsburger Studentin mit Magister-Abschluss (Geschichte/Deutsche Literaturwissenschaft) fand eine gut bezahlte Beschaftigung bei einem Computerhersteller, zunächst in der Personalabteilung, dann in anderen Bereichen. Die Beispiele zeigen anschaulich, worum es geht: Das Fachwissen bildet Hintergrundwissen und Allgemeinbildung, im Mittelpunkt der Arbeitsprozesse und Anforderungen stehen die Schlüsselqualifikationen, die man während des Studiums erworben haben sollte: Sprachkompetenz in der Muttersprache, Fremdsprachenkompetenz, Sozialkompetenz wie etwa arbeiten im Team, Textinterpretation und Textanalyse, die Kompetenz, Probleme zu lösen, schriftliche und mündliche Darstellung von Sachverhalten.

Der Bedarf an kreativen Wissensarbeitern wachse, so eine These der Trendforscher. Ausgehend von den Beispielen: Geisteswissenschaftler eignen sich als kreative Wissensarbeiter. Und wo besteht Bedarf an kreativen Wissensarbeitern? Zum Beispiel in Industrie und Projektagenturen, im Verlagswesen, in den Medien aller Art einschließlich Fachzeitschriften, in Dienstleistungsbereichen, in der Werbebranche, in Galerien, Historischen Museen, Kunstsammlungen, in den Bereichen Kulturmanagement und Weiterbildung, in der kommunalen und regionalen Kulturverwaltung, in Internationalen Organisationen wie etwa der Europäischen Union oder in den Verwaltungen auf allen Ebenen des öffentlichen Lebens.

Neben den Schlüsselqualifikationen rückt die Frage nach den mentalen, formalen und inhaltlichen Voraussetzungen für eine erfolgreiche Bewerbung immer stärker ins Blickfeld. Kann die Universität außer auf die generellen Anforderungen in den verschiedensten Berufsfeldern auch auf die Anforderungen in den Bewerbungsverfahren vorbereiten? Soll sie sich überhaupt damit befassen? Um es deutlich zu machen: Ich halte beides für außerordentlich wichtig. Dazu bedarf es außer der Einsicht über die Notwendigkeit einerseits eines erweiterten Lehrangebots, anderseits einer auf

die erweiterten oder neuen Lernziele gerichteten Organisation des akademischen Unterrichts. Die nachfolgenden Gedanken und Vorschläge sollen meine Vorstellungen erläutern und verdeutlichen.

3. Lernziele und Lehrinhalte

3. 1 *Grund- und Schlüsselkompetenzen*

In der vom Deutschen Hochschulverband herausgegebenen Zeitschrift 'Forschung und Lehre' erschienen unter *der* Rubrik Pro & Contra in *Heft* 11, 2004, S. *606/7,* zwei Stellungnahmen zum Thema "Schlüsselqualifikationen als eigenständiges Modul?". Die Stellungnahme zugunsten eines eigenständigen Moduls vermittelt einerseits den Eindruck, als sollten die Studierenden Schlüsselkompetenzen über eine Art zentrale Vermittlung im Rahmen von Zusatzqualifikationen erwerben, spricht aber anderseits von einem ganzheitlichen Reformprozeß der Studienstruktur und einer Querschnittsaufgabe, die sich in allen Bereichen der Lehre niederschlagen solle. Die zweite Stellungnahme lehnt, wie nicht anders zu erwarten, den Erwerb von Schlüsselqualifikationen als eigenständiges Modul ab, hält die Ängste vor der angeblich immer geringer werdenden Halbwertzeit von Wissen für unbegründet und setzt sich dafür ein, Lern- und Denkstrategien zusammen mit Inhaltswissen zu fördern. Schlüsselqualifikationen losgelöst von relevanten Inhaltsbereichen lehren zu wollen, bedeute letztlich nur, dass solche Lerneinheiten zu lästigen Pflichtübungen verkommen und ihr Ziel verfehlen.
Ich kann mich ohne Vorbehalt der zweiten Meinung anschließen und erinnere an die letztlich sinnlose Einrichtung von beispielsweise hochschuldidaktischen Zentren in den siebziger Jahren des letzten Jahrhunderts, wo ohne Bindung an die jeweils fachspezifischen Bedürfnisse Theorien entwickelt wurden. Oder stellen wir uns eine Fachdidaktik ohne Berücksichtigung von konkreten Stoffen des jeweiligen Faches vor! Die Studierenden empfanden sie als spröde, trocken, theoretisch und wenig anregend. Schlüsselqualifikationen wie Fremdsprachenkompetenz, Textinterpretation und Textanalyse sind ohnehin Gegenstand fachwissenschaftlicher Angebote. Aber auch die anderen oben genannten Schlüsselqualifikationen lassen sich in fast allen Fächern mühelos in den akademischen Unterricht einfügen, zumal überall dort, wo Seminare zum festen, das heißt obligatorischen Bestandteil der Studiengänge gehören. Nur muss man sich einstellen auf die unterschiedlichen Formen von sogenanntem Strategiewissen. Nehmen wir als weiteres Beispiel die Arbeit im Team! Man muss lediglich vom Einzelreferat Abstand nehmen und Referate so planen, dass sie von Zweier- Dreier- oder Vierer-Gruppen vorbereitet und vorgetragen werden. Natürlich obliegt es dem Seminarleiter, die Teams bei der Vorbereitung beratend zu begleiten und Zwischenberichte entgegenzunehmen. Die Einheit von Forschung und Lehre wird durch solche Anpassungen an zeitgemäße Bedürfnisse nicht in Frage gestellt. Es ist allerdings ein in

Deutschland gern gepflegtes Missverständnis zu meinen, man gebe bewährte Grundlagen auf, wenn man neue Lernziele in den Unterricht integriere. Doch zuruck zum Thema!
Das zumal in den Geisteswissenschaften als Regelfall angebotene Seminar ist angesichts der zu bewältigenden Aufgaben mit zwei Wochenstunden zeitlich zu knapp bemessen. Ich kann mich noch erinnern: an der Universität Augsburg gab es in den Anfangsjahren Reformansätze, zu denen Kleingruppenkonzept und Erhöhung der Wochenstundenzahl von Seminaren gehörte. Diese Versuche waren, bedauerlicherweise, nicht von Dauer. Wenn man jedoch das Einüben von Schlüsselkompetenzen wie zum Beispiel der Rede- und Schreibkompetenz fest in den Unterricht einfügen will, muss man zu einer Erhöhung der Wochenstundenzahl bereit sein. Vor allem deshalb, weil die Vermittlung von solchen Qualifikationen gegenüber den herkömmlichen Leistungen wie Referat und Hausarbeit mit mehr Training, das heißt Üben, Bewerten und neuerlichem Üben verbunden ist. Ich kann mir auch vorstellen, dass innerhalb eines Facherverbundes wie Anglistik, Germanistik oder Geschichte die Proseminare und Seminare nach Schwerpunkten aus dem Katalog der Schlüsselqualifikationen ausgerichtet werden, das heißt, dass zum Beispiel im einen Falle Textinterpretation und Textanalyse, im anderen Rede- und Schreibkompetenz im Zentrum der Seminararbeit stehen.
Es gibt in dieser Hinsicht viele Möglichkeiten, Neues zu verwirklichen und auf die Herausforderungen angemessen zu antworten. Voraussetzung sind allerdings sowohl ein Konsens darüber, dass es diese Herausforderungen gibt als auch die Bereitschaft, auf Veränderungen der universitären Umfelder und der Berufswelt sowie auf daraus abzuleitende Notwendigkeiten zu reagieren. Eine weitere Voraussetzung ist, die akademische Lehre sehr ernst zu nehmen, ihr mehr Zeit als bisher üblich zu widmen und ihr eine neue Ausrichtung zu geben, womit nicht die Aufgabe wissenschaftlicher Standards gemeint ist, sondern die Einbindung von Strategiewissen und das Erlernen von Fertigkeiten, denen im heutigen Berufsleben, sozusagen mit dem Einstieg in einen Beruf eine Leitfunktion zukommt.

3.2 Auf dem Weg in den Berufseinstieg

Ich möchte zunächst mit Beispielen verdeutlichen, worum es geht: um dieVorbereitung auf die Bewerbungsverfahren, um das Nachdenken über die beruflichen Möglichkeiten, die ein Studium eröffnet, und darum, die Differenzierung zwischen Fachwissen und Grundkompetenzen bewusst zu machen.
Erstes Beispiel: Bewerbungsverfahren.
Einem jüngeren Kollegen aus dem Fach Kunstgeschichte wurden im Rahmen eines Berufungsverfahrens auf einen Lehrstuhl anlässlich seines Vortrags zwei Fragen gestellt, wie sie bei Vorstellungsgesprächen üblich sind:

Erstens sollte er sich mit drei Eigenschaften selbst charakterisieren, zweitens sollte er drei Werke nennen, die für die kunsthistorische Institutsbibliothek anzuschaffen seien. Auf beide Fragen war der Kandidat nicht gefasst; sie haben ihn so irritiert, dass er keine vernünftigen Antworten geben konnte. Die zweite Frage hatte er zudem missverstanden; denn er meinte, man setze eine genauere Kenntnis des Bibliotheksbestandes vor Ort voraus und ziele auf die Nennung von Lücken.

Das Beispiel betrifft einen Wissenschaftler, der bereits im Berufsleben steht und innerhalb der akademischen Laufbahn eine höhere Stufe und eine feste Beschäftigung anstrebt; aber es lässt sich ohne weiteres auf die Situation der Studierenden übertragen, die am Ende ihres Studiums stehen oder die ersten berufsqualifizierenden Examina erfolgreich abgeschlossen haben. Die Konsequenz sollte sein, an den Universitäten Angebote zu organisieren, etwa in Kursen, die auch während der vorlesungsfreien Zeit stattfinden können. Der Deutsche Hochschulverband bietet schon seit einiger Zeit solche Veranstaltungen an, freilich nur für bereits an den Universitäten tätige Akademiker, also den akademischen Nachwuchs. Den Universitäten stünde es gut an, sich den drängenden Erfordernissen veränderter Gegebenheiten nicht zu verschließen und sich einer daraus abgeleiteten erweiterten Verantwortung bewusst zu sein.

Zweites Beispiel: Berufliche Möglichkeiten.

Nehmen wir mein Fach, die Geschichte! Historiker als Beruf? Nein, so darf man die Frage nicht stellen! Nur wenige Absolventen eines Geschichtsstudiums haben, wie bereits oben angedeutet, die Chance, als Geschichtswissenschaftler an der Universität zu bleiben; einige mehr sind es, die als Geschichtslehrer an Realschule oder Gymnasium einen Arbeitsplatz finden und sich ihr Leben lang mit Geschichte beschäftigen. Was aber machen alle anderen? Was machen Archäologen, Kunsthistoriker, Literatur- und Sprachwissenschaftler?

Ich muss etwas weiter ausholen, bevor ich zu dieser Frage zurückkehre: Folgt man den Thesen der Trendforscher, so werden sämtliche Tätigkeiten, die sich wiederholen, entweder von Computersystemen übernommen oder in Niedriglohnländer verlagert. Das heißt, in den Hochlohnländern bleiben allein Tätigkeiten außerhalb von Routine. Damit wachse, so die Trendforscher, der Bedarf an kreativen Wissensarbeitern erheblich und die Projektarbeit nehme zu. Hier können wir anknüpfen! Archäologen, Historiker, Kunsthistoriker, Literatur- und Sprachwissenschaftler, überhaupt alle Geisteswissenschaftler eignen sich als kreative Wissensarbeiter.

Wo besteht Bedarf an diesen? Zum Beispiel in der Industrie - in Projektagenturen, Dienstleistungsbereichen und im Verlagswesen - bei Medien aller Art einschließlich der Fachzeitschriften - in der Werbebranche - in Galerien, Historischen Museen, Kunstsammlungen, sonstigen Sammlungen, ganz gleich, ob es sich um staatliche, kommunale oder private Einrichtungen handelt - in der kommunalen und regionalen Kulturverwaltung, im

Kulturmanagement sowie im Bereich Weiterbildung - in internationalen Organisationen. Natürlich befinden sich die Bewerber aus den Geisteswissenschaften in vielen dieser Bereiche nicht nur in Konkurrenz zu Absolventen anderer universitärer Fachrichtungen wie Rechts- und Wirtschaftswissenschaften sondern auch zu den Absolventen der Fachhochschulen. Häufig führen Praktika, an denen man während des Studiums teilgenommen hat, zur Beschäftigung auf Zeit oder auch zu einem zeitlich unbegrenzten Arbeitsverhältnis.

Hier kommt es vor allem auf die Eigeninitiative der Studierenden an. Die Universitäten können durch gezielte und nachhaltige Information die Aufmerksamkeit der Studierenden wecken und Hilfestellung leisten, mehr nicht.

Drittes Beispiel: Fachwissen und Grundkompetenzen.

Sprechstunde im Fach Geschichte - ein gut gekleideter junger Mann besucht seinen früheren Professor und berichtet über seinen Einstieg in das Berufsleben. Er habe in einer Werbeagentur begonnen, ein Jahr Trainerausbildung als Werbetexter hinter sich, habe dann eine Beschäftigung bei einer Versicherungsgesellschaft gefunden und sei mittlerweile Redenschreiber für den Vorstand. Die erste Rede, die er geschrieben habe, sei eine Tischrede gewesen; nein, nicht über ein bestimmtes Thema, aber der Text habe zum Ereignis und zu den Umständen passen müssen. Er schreibe Reden, Fachvorträge, manchmal Werbetexte und er arbeite an der Umsetzung eines verständlichen, kundenorientierten Schreibstiles in der Unternehmensgruppe! Ja, das sei ganz wichtig: Vorträge schreiben und Vorträge halten! Themen in mündlicher und schriftlicher Form präsentierenl Sein auf der Universität erworbenes Fachwissen könne er nur von Fall zu Fall anwenden. Bisweilen schon, Geschichte und Literatur lieferten Beispiele die Fülle. Neulich habe er ein Gespräch mit einem Studienkollegen gehabt. Der sei bei einem Dienstleister im Bereich Unternehmenskommunikation erfolgreich. Seine Fächer? Wie bei ihm: Geschichte, Deutsche Literaturwissenschaft. Sie seien sich einig gewesen, so mein früherer Student: Methodenkompetenz hatten sie erworben; sie hatten gelernt, sich schnell in neue Sachverhalte einzuarbeiten. Auf Methodenwissen, Schlüsselkompetenzen wie zum Beispiel die Fähigkeit, präzise zu formulieren und gut lesbare Texte zu schreiben, komme es an. Außerdem sei soziale Kompetenz gefragt: Kommunikation, Kooperationsbereitschaft, Flexibilität, Teamfähigkeit und Toleranz. Das habe die Universität aber nur unzureichend vermittelt. Diese Fertigkeiten und Fähigkeiten müssten durch Gruppenarbeit, rhetorische und stilistische Übungen sowie regelmäßige Präsentation vor größeren Gruppen richtig eingeübt werden. Ohne die fachwissenschaftlichen Inhalte und Ansprüche zu beschneiden müsse der universitäre Unterricht auf Bedürfnisse ausgerichtet werden, welche sich an Anwendungsfeldern orientieren sollten!

Der promovierte Altgermanist als Entwickler von Computerprogrammen in

einem Sparkassenverband, der Theologe als Leiter der Freizeitprogramme im Weiterbildungszentrum eines großen Unternehmens, die promovierte Musikwissenschaftlerin als Organisatorin von Tagungen, Kongressen und Bildungsprogrammen, der promovierte Historiker als Referent der Geschäftsleitung eines weltweit operierenden Ingenieurbüros! Wenige Beispiele, ausgewählt aus vielen, die mir im Laufe meiner Beschäftigung mit unserem Thema bekannt geworden sind. Und alle, mit denen ich sprach, stellten übereinstimmend fest, dass das in den Studienfächern erworbene Fachwissen einen nützlichen, nicht zu unterschätzenden Wissens- und Bildungshintergrund abgibt und auch als Hobby gute Dienste leistet.
Die in solcher Weise veränderte Funktion des Fachwissens betrifft auf grund der möglichen Berufsbilder wahrscheinlich mehr die Geisteswissenschaftler als etwa Absolventen der Rechts- und Wirtschaftswissenschaften; aber das ist ein Sachverhalt, der hier nicht zur Diskussion steht.

3.3 Persönliche Entfaltung

Um Missverständnisse vorzubeugen, verweise ich noch einmal auf die materiellen Voraussetzungen meiner Gedanken und Empfehlungen: Sie beruhen vor allem auf Beobachtungen und Erfahrungen aus den Geisteswissenschaften. Das ist naheliegend, weil es sich um mein unmittelbares Umfeld handelt. Sie verarbeiten aber auch weiterreichende Kenntnisse, wie man sie erwirbt, wenn wann regelmäßig gesamtuniversitäre Aufgaben wahrnimmt und Kontakte zu Institutionen der Arbeitswelt und des Arbeitsmarktes pflegt. Dieser Gedankenaustausch hat mich auf ein weiteres wesentliches Element persönlicher Entfaltungsmöglichkeiten aufmerksam gemacht, das autodidaktische Element.

Was ist damit gemeint? Aneignung und Verwandlung dessen, was man im Unterricht aufnimmt. Die aktive Auseinandersetzung mit den Angeboten, dem vermittelten Wissen. Was bedeutet das für die Studierenden? Dass sie die Universität als eine Erkenntnis vermittelnde Einrichtung begreifen und reiner Spezialisierung entgegensteuern; dass sie Bildung verstehen als Methode, sich mit sich selbst nicht zu langweilen, im Sinne eines strukturell definierten Zeitbegriffes unter dem Motto: Man hat immer etwas zu tun! Letztlich kommt also sehr viel auf die seelische und geistige Bereitschaft an, das autodidaktische Element zu stärken. Auch in dieser Hinsicht hat die Universität eine erzieherische Aufgabe.

4. Die etwas anders verstandene Universität

Das sollte klar sein: ein Zuruckdrängen des fachwissenschaftlichen Studiums zugunsten gesellschaftswissenschaftlicher wie zum Beispiel pädagogischer oder

psychologischer Anteile etwa in den Lehramtsstudiengängen, wie das in Deutschland immer wieder im Rahmen hochschulpolitischer Diskussionen und Planspiele gefordert wird, wäre ein tieferer Eingriff als die hier gemachten Vorschläge. Während jene Maßnahmen die inhaltliche Substanz des Studiums betreffen, zielen diese Anregungen nur auf Ergänzungen, welche sich aus den Gegebenheiten einer veränderten Arbeitswelt herleiten.

Die Universität hat zwei Bestimmungen: sie ist ein Ort wissenschaftlicher Arbeit, also der Forschung und der auf Forschung beruhenden akademischen Lehre; sie ist aber *auch* eine pädagogische Anstalt. In beiden Hinsichten trägt sie gesellschaftliche Verantwortung. Die zweite Bestimmung erhält aus verschiedenen Gründen eine ungleich größere Gewichtung als je zuvor: Die Zahl der Studierenden ist seit etwa drei/vier Jahrzehnten beständig gestiegen, die soziale Herkunft der Studenten ist ungleich vielfältiger als in früheren Zeiten, die Berufsfelder sind merklich differenzierter und komplexer; auf dem Arbeitsmarkt haben sich die Wahlmöglichkeiten und Angebote in nie dagewesenem Umfang vermehrt; die Anforderungen innerhalb der einzelnen Berufe sind vielförmiger und anspruchsvoller geworden: alte, klassische Berufsbilder, traditionelle Zuordnungen von Studium und Beruf, früher sichere Wege, die Eindeutigkeiten von Laufbahnen und beruflichen Werdegängen verschwinden; der Bedarf an Grundkompetenzen ist erheblich gestiegen und betrifft nahezu alle Berufsfelder in vergleichbarer Weise.

Daher halte ich ein Reagieren der Universitäten in der oben beschriebenen Weise für unabdingbar. Gezielte Orientierung vor Aufnahme des Studiums, studienbegleitende Beratung, Vermittlung von Fachwissen, Methodenwissen und Schlüsselkompetenzen einschließlich der sozialen Kompetenzen. Das sind die Inhalte, um die es geht!

Wie das, soweit es um zusätzliche Kurs-Übungsangebote geht, angesichts der vollgepackten neuen Bachelor-Studiengänge und der Kürze der Studienzeit untergebracht werden kann, ist eine andere Frage, die allerdings hier nicht vertieft werden soll. Wer mit dem Hinweis auf überladene Studienordnungen gleich resigniert, wird natürlich niemals einen Schritt nach vorn tun können. Wer für berufs- und arbeitsweltbezogene Neuerungen aufgeschlossen ist, wer sich der Verantwortung für eine umsichtige und angemessene Ausbildung der Studierenden bewusst ist, wird Wege finden! Er wird aber zugleich weder nervösem Reformeifer noch überstürzten Effizienzerwartungen erliegen; denn mit vorschneller Effekthascherei hat das hier vorgestellte Konzept nichts zu tun.

In Deutschland sind die Bachelor-Studiengänge auf drei Jahre konzipiert, in den angloamerikanischen Ländern beispielsweise dauern sie vier Jahre. Natürlich hätte man bei vier Jahren mehr Zeit. Die Unterschiede werden, denke ich, trotz des sogenannten Bologna-Prozesses weiterbestehen. Gerade eben haben auf Einladung der Konrad-Adenauer-Stiftung Vertreter des Deutschen Hochschulverbandes und Staatssekretäre für Wissenschaft über die Folgen dieses Reformwerkes diskutiert: während die Hochschullehrer die Reform als,

deutlich gesagt, Fehlschlag einstufen, rühmen die Vertreter der für die Universitäten zuständigen Ministerien diese als Erfolg. Aber es muss ja alles schnell gehen, so die aktuelle Botschaft gerade dieser Reform. Doch ob sie eine gute Botschaft ist? Zweifel sind angebracht. Besorgnis ist angebracht, dass vernünftige Reformen und sinnvolle Weiterentwicklungen der Eile, dem Wettbewerb, der Einebnung, den vordergründigen Kosten-Nutzen-Rechnungen oder verkrustetem Stillstand zum Opfer fallen! Bis jetzt besteht nicht einmal ein Konsens über das, was hier vorgetragen wurde.

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STRUCTURAL CHANGES AND GLOBAL TRENDS IN EUROPEAN UNION TRADE

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Abstract

The article aims at researching and presenting structural changes and global trends in distributive trade of European Union, resulted from liberalization of economic activities within the EU.

During the last decades, EU trade went through deep transformation and structural changes. Traditional distributive trade has been replaced by organized and concentrated distribution. Even though, there are many developing trends which unify the EU trade, still there are some differences specific for particular countries. Level of development, structure of trade network, as well as structure of retail forms, differ from one country to another. Developing patterns of retail forms differ from one country to another. For instance, hypermarkets have reached mature stage in France, Germany and Belgium, just have started developing in Italy and are in developing stage in Spain. "Hard" discount shops are already one mature concept in Germany and Netherlands, while in France, they have just started developing.

Regardless of differences between particular national and regional markets within EU, almost all countries participate in increased trend of internationalization, concentration and dislocation of traditional retail towards modern sale forms, which have more subsidiaries. However, degree of concentration in some countries is still quite different. While just a few companies control the markets in Scandinavia, France, Great Britain and Germany; in Italy there is not a company with similar comparable size or market strength.

Trend of business globalization have emphasized the area of international retail as an important topic. With process of retail internationalization – retail has turned into a global industry quite fast.

JEL classification: F14,F15, F43, O24

Keywords: trade, retail, globalization, internationalization, concentration

1. Introduction

During last decades, the trade in Europe got by deep transformation. The traditional distributive trades was substitute by organized and concentrated distribution. Mutual convergence of developing trends have for result the convergence in structural changing of European retail markets.

Besides expressed trend of mutual convergence in developing trade, still there are main differences in the structures of the EU trade, as the differences in the level of the developed trade network. These differences are the result of the historical, cultural, political, economic and other factors. The trade of EU eastern countries is more developed and modern, then in EU southern countries, which have traditional on tranzition level of trade development.
Mutual convergence of developing trends in EU retail industry accommodating the sector and his concentration, retail buildings and their organization, bosses and their strategies. The environment changing of EU has brought to the development of the new competition, as to the new strategies of market positioning and differentiation.

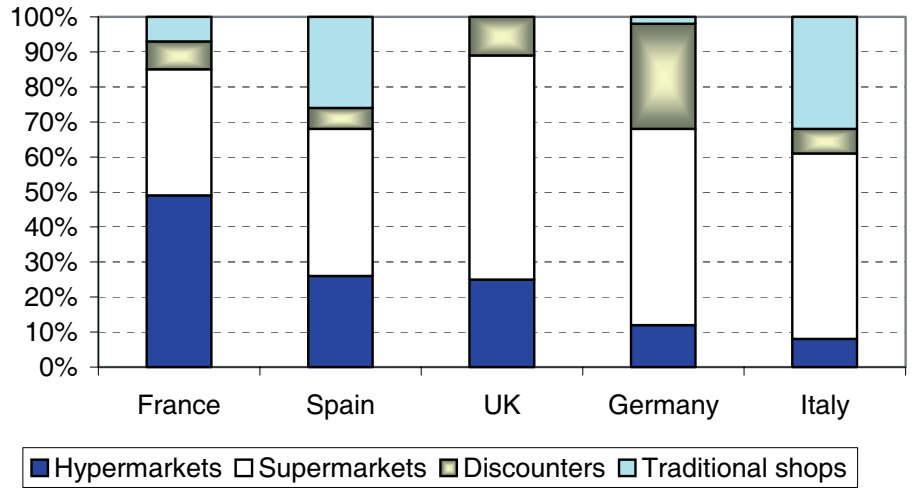
2. The changing in the trade structure of EU

At the end of XX and at the beginning of the XXI century, happened a big changing in the structure of the retail network, in such a manner that the hierarchy of the retail buildings in huge scale has been revised in the way of:

- The lost of the market part of the commodity and mixed shops,
- The increase of the foodstuffs- retail -groups,
- The increase of the larger (non)foodstuffs specialized shops,
- Evolution of the discount store

However, the dominant assortment of the retail shapes differ from country to country, what we can see from the next picture:

Picture 1 - Market shares of food-based retailing



Source: "Distributive Trades in Europe", European Communities, 2001, page 190.

This development was monitors by few countries, by acceleration of the retail shapes life-cycles. For example, during 100 years came to the maturity of the commodity shops, during for 40 years came to the maturity of the mixed shops, for 25 years of the supermarkets, for 20 years of the hypermarket, and for 15 years of big specialized shops.
However, the model of the developing all retail shapes differ from country to country. For example, hypermarkets has a mature level in France, Germany, and Belgium, an it have just been started to developed in Italy, and still they are in developing progress in Spain. "The hard" discount shops are yet one of the mature concept in Germany and Holland, and now they starting to developed in France (McGoldrick, 1995, 18).
The next Table, gives an illustration of the main shops with size over 2.500 m2 in western countries:

Table 1 - Main shops with size over 2.500 m2

Coutries	Great Britain	France	Portugal	Spain	German	Denmark	Switzerland	Average Western Europe
% from the number of shops	2%	3%	<1%	<1%	2%	3%	1%	2%
% from whole sales	57%	52%	40%	31%	23%	20%	18%	20%

Source: Bell Richard: "Competition Issues in European Grocery Retailing", European Retail Digest, Autumn 2003, Issue 39, p. 31, *Business Source Premier*, http://epnet.com

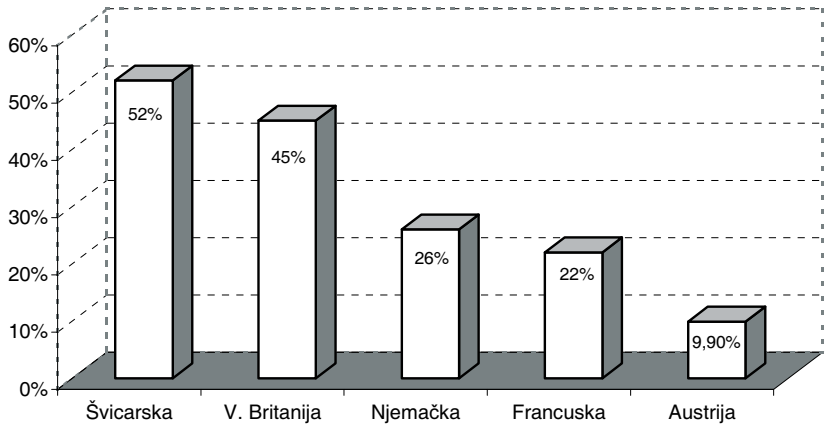
From above (past) analysis, we can conclude that the retail in Europe passed through huge success of increasing the sale markets and change of the structural retail shapes. The change of the structure of the retail shapes has brought to the dominate involvement of the retail buildings (supermarkets, hypermarkets and discount shops).

3. The comparative analyze of retail with own (proper) brand

In 1991. retail sales with proper brand represented 18% of foodstuff sales in Europe. They are special developed in North Europe: (Great Britain, Holland, Germany, and Belgium) and they are still developing to the South (McGoldrick, 1995, 30).

The participation of the products with proper brand in retail are the most developed in EU countries in 2000, what we can see from the next picture:

Picture 2 - The participation of the procucts with proper brand in retail



Source: Author's construction

Data: Bell Richard: "Competition Issues in European Grocery Retailing", European Retail Digest, Autumn 2003, Issue 39, p. 35, *Business Source Premier*, http://epnet.com

Bell Dick: "Food Retailing in Germany, Austrija and Switzerland", Senior Research Associate, 1999, OXIRM, Templeton College, *European Regional Review, page 20,* http://search.epnet.com...2/14/2004

According to a new report, private label trends worldwide, 2006, published by Planet Retail, private labels are forecast to continue to show impressive growth across both food and non-food categories.

Table 2 - Private Label Share of the Top 5 Grocers, by Share of Private Label Sales

Rank	Company	Retail Banner Sales, 2004 (USD mn)	Estimated Share of Private Labels (%), 2004
1	Aldi	46,430	95
2	Schwarz Group	46,448	63
3	Target	53,949	46
4	Tesco	68,164	45
5	Casino	50,064	40

Source: Planet Retail Ltd - www.planetretail.net

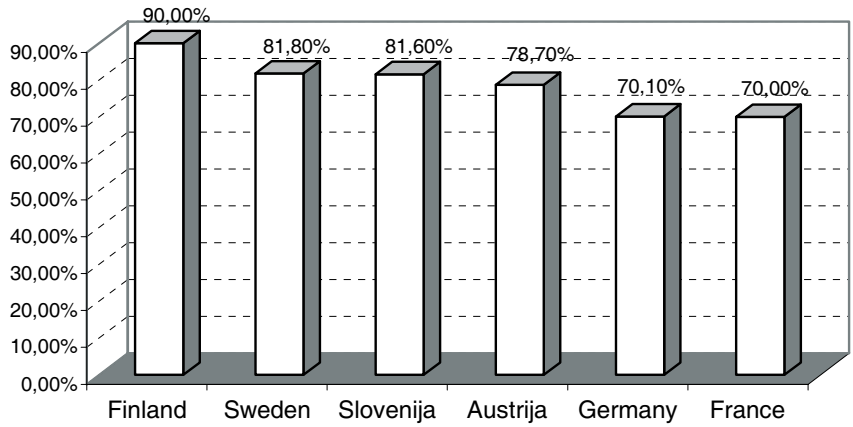
A number of factors are working together to underpin the growing popularity and importance of private labels to retailers:

- increasing price competition;
- the need for differentiation;
- a tool to strengthen customer loyalty;
- growing acceptance among consumers;
- higher margins;
- worldwide sourcing opportunities;
- ability to chose from several suppliers;
- increased control over the supply chain.

4. The concentration of the retail trade

Inside of the EU countries, the concentration of the retail trade became very strong. Namely, the concentration is higher in foodstuff sector, but the highest in (non) foodstuff sector. The direct circumstance of the internationalization is bigger concentration of the trade in Europe. However, the rate of the concentration in few countries is still differ. As a few companies controlled markets in France, Great Britain and Germany, in Italy there is no that kind company with that huge market force (eurodata, 2002, www.mm-eurodata.com).
In 1992. 10 leading retail traders in Europe had a 27,8% market share, and a five years later – 1997, 36,2%, and prognoses for 2009. is 38,8% of market share (Planet Retail Ltd, 2009, www.planetretail.net). The concentration for the five leading companies in foodstuff retail in EU in 2005, illustrated this picture:

Picture 3 - Concentration by country



Source: Author's construction

Data: Global Retail Concentration, Planet Retail 2006. http://www.cleanclothes.org/ftp/07-10-EU_Retail_Briefing.pdf

From above picture we can conclude that there is a huge concentration in foodstuff retail in EU countries. Five leading companies of foodstuff realized over 80% market share in three countries , and over 70% in other countries.

5. The internalization of retail trade

The internalization of retail trade has speedy growth. In 1992 there were over 1.321 international institution in European Community in relation to 120 international institution in 1970. Internalization is present in all retail sector: foodstuff, non foodstuff, mixed and specialized trade, bid and small shops, etc. However, export retail shapes are the most common shapes which stay dominant in their countries. France, Great Britain, Germany represent two-thirds of the international operations in Europe. International activities of the European retail sales are represented in next table:

Table 3 - Europe: Top 10 Grocery Retailers, 2004

Retailer	Country of Origin	Retail Banner Sales (EUR mn)	Net Sales 2004 EUR mn	Grocery Sales (%)	Domestic Sales (%)	Foreign Sales (%)
Carrefour	France	75,707	62,144	75.4	59.1	40.9
Metro Group	Germany	60,291	54,114	49.1	54.5	45.5
Tesco	UK	49,681	45,440	71.5	87.5	12.5
Rewe	Germany	44,135	40,800	75.6	71.6	28.4
Auchan	France	38,418	28,604	59.9	55.9	44.1
ITM (Intermarch)	France	37,380	34,052	69.9	71.5	28.5
Schwarz Group	Germany	36,964	34,263	82.3	58.2	41.8
Aldi	Germany	32,485	29,465	81.8	67.7	32.3
Edeka	Germany	31,582	26,175	84.4	92.0	8.0
Casino	France	29,458	22,909	75.0	83.0	17.0

Source: Planet Retail Ltd - www.planetretail.net

Even the rhythm of the retail internationalization is speeded up without doubt, still the main retail sales realize the biggest percent of their circulation on domestic market. The intensive processes of the retail internationalization

brought to the horizontal cooperation and connection of the retail from different EU countries, which resulted – genesis of the international retail services.

6. Conclusion

The integration of the EU market resulted in the trade internalization, specially its retail sector. The internalization of the retail, which progress is speeded up in last decades, redefined the relations in canals and economic distribution on the global level. With the internalization process, retail has become a global industry. Although, the rhythm of the internalization of retail is speeded up, still the main retail sales realize the biggest percent of their circulation on domestic market.
Intensive process of internalization of the retail brought to the horizontal integration and retail cooperation from different EU countries, which resulted – genesis of the international retail services. Direct sequence of the increasing the internalization is a bigger concentration of the trade in Europe. Despite the differences between national and regional markets inter EU, all countries take part in trend toward internalization, concentration, and dislocation of the traditional retail. However, the rate of the concentration in some countries is still differ. . As a few companies controlled markets in France, Great Britain and Germany, in Italy there is no that kind company with that huge market force

The process of integration and concentration are inspired with main goal-increasing the markets strength and size economy, throw the size of the retail companies.
In EU, there are next trends:

- New growth strategies
- Less growth, more segmentation ;
- Less national , more international entrepreneurships;
- Less stocks, more customers services;
- Less shops, more selling areas,
- Less independent sales, more integration;
- less business per quadratic meter, higher rate of margin (McGoldrick, 1995, 39).

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ORGANIZATIONAL COMMUNICATION AS AN IMPORTANT FACTOR OF ORGANIZATIONAL BEHAVIOUR

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Abstract

Organization sets itself specific objectives in order to meet the better business success, and to gain comparative advantage over the competition. For these objectives to be achieved, of crucial importance is organizational communication per se which implies communication among employees, as well as communication between different hierarchic levels in the same organization. Communication as an element of organizational behaviour is seen through the group level as the independent variable. Throughout this paper we shall explain the importance of communication for organization, the communicational process and channels for information flow through the network of small formal groups and the network of informal groups. Hereby we also want to emphasize the greater need for appreciation of communication as the important factor of organizational behaviour due to the growing changes in organizations which face the leadership with new challenges and opportunities for testing the different organizational behaviour concept modes. We will also demonstrate the extent of satisfaction with communication within the observed economic operators in Osijek-Baranja County, and evaluate the impact of communication on the employee level on business performance of the same.

JEL classification: D23, M14

Keywords: communication, organization, organizational behaviour, communication satisfaction

1. THE IMPORTANCE OF COMMUNICATION FOR ORGANIZATION

Organizational behaviour becomes more and more important for the growing role of the man in social processes, as well as in their management. According to S.P. Robbins „the discipline of organizational behaviour (OB) is a systematic study of actions and attitudes that people exhibit within the organisation. “ (Robbins; 1992, 1.) Thereby the elements of organisational behaviour become more and more important since the development of quality organisational behaviour can increase the competitive ability of the company and market value of the same.

The subject matter of the systematic study of the discipline of organisational behaviour is actions of which the most important ones are three determinants of employee productivity. They are reflected through productivity, absenteeism and workforce fluctuation, and great attention is paid to satisfaction at workplace since it reflects the attitudes of the employees which are also the subject of the systematic study of the discipline of organisational behaviour.

Analysis of the elements of organizational behaviour enables a better understanding, predicting and control of organizational behaviour. Communication as an element of organizational behaviour is observed through the level of group behaviour. Communication is one of the central components of every organization; therefore, it is clear why is the better understanding of communication efficacy the key to the overall organizational success. (http://web.efzg.hr/RePEc/pdf/Clanak%2006-01.pdf)

Business communication is usually divided to the one within the organization, and the one outside the organization. "Communication is the process of conveying the message from one person to the other (Weick and Browing, 1986), however it is very important that the recipient of the information understands the content and the meaning of the message." (Rouse & Rouse; 2005, 40.)

Weihrich and Koontz state that the function of communication in the organisation is to connect the employees of that organisation in order to reach mutual goals.
Hence, the importance of communication in the organisation is important because of:

- the company's goal setting and their carrying out,
- the development of plans towards their realisation,
- human and other resources management in the most successful and appropriate way,
- the choice, the progress and the performance evaluation of the organisation members,
- the management, guiding, motivating and creating a climate in which people want to contribute,
- the control over realisation. (Weihrich & Koontz; 1994, 538.)

"Communication in the organisation represents a complex system of the flow of information, orders, wishes and references made out of two partially complementary systems: formal communication network and informal communication network." (Fox; 2001, 41.)

"Formal communication is a systematic and formal process of information transmission in spoken and written form planned in advance, and adjusted with the needs of the organisation." (Fox; 2001, 42.) While informal communication does not follow the line determined in advance, but there is an undisturbed communication between particular groups within the organisation.

The process of communication involves several elements: the sender, the message, the medium, and the recipient. Communication flows from the sender which is the source of the communication (be it an individual or a group). He sends off the message to the recipient using a particular medium. When talking about the communication within the organisation, characteristic for the medium are different immediate conversations, memos, printouts and schemes depending on the content and the aim of the message which the sender wants to convey to the recipient. The recipient then attempts to understand which message the sender wants to convey, although the communication process may sometimes be interrupted by a noise in the communication channel, which can impede the communication. The problem which often appears within the organisation is getting information overload which leads to a burden, so therefore it is important to take account of selecting only the relevant information.

Communicational flow in the organisation can develop into many different directions: upward communication, downward communication and sideward communication.

Upward communication – the one which goes up the official hierarchy, from the lower to the higher level in the organisation. Information go from the subordinates to the superiors. It is mostly used for sending information associated with the proposals system, employees' opinion, work insight, attitudes and problems of the employees. It is important to secure the freedom of communicating (undisturbed information flow) since the main drawback of the upward communication is message filtering.

Downward communication – flows from the higher to the lower levels in the organisation. It is characteristic for giving orders, broadening of ideas and communicational knowledge. It takes up a lot of time, but its most common problem is the loss or denying of information on the path through the chain of command; very often there is misunderstanding of the directions, therefore a backward connection has to be established in order to confirm the transmission of correct and full information.

Weihrich and Koontz term the horizontal and diagonal flow of information a *sideward communication*, because of their generic joint features. S. P. Robbins

terms them a lateral communication. Horizontal communication appears among people of the same status within a department or among different working units, whereas the diagonal communication appears among people of the different status who are not formally connected in the organisational communication system. (Fox; 2001, 41.)
Communication can develop into several different forms: oral, written and non-verbal form.

Oral communication – the spoken word is the main code of the communication. Formal discussions and informal rumours are some of the forms of oral communication. Usual channels of oral communication are phone, video, and face-to-face conversations. There are some advantages of oral communication over other forms of communication, namely the speed of conveying the information and feedback. The disadvantage, however, is the possibility of distorting the original message. In the business world oral communication plays a great role.

Written communication – compared to the oral communication it is tangible whereby it is much easier to verify the data. One of its disadvantaged is that it takes up more time compared to the oral communication and there is not a direct feedback. The written form of the communication is attached to some sort of technology which enables us to convey the information (PC, paper, pen...).

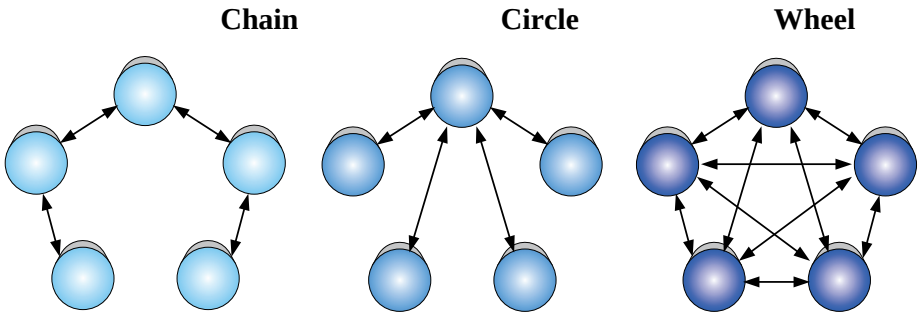
Nonverbal communication –facial expression, gesturing, tone of the voice, look and appearance are some of the elements of non-verbal communication.
"Non-verbal communication implies all intentional and accidental meanings which have no form of a written or spoken word." (Rouse &Rouse, 2005, 47.) Non-verbal form of the communication is often neglected compared to the other forms of communication. Important advantages of non-verbal communication are that it supports other forms of communication; whereas the disadvantage is that the recipient may misconceive the message and consequently misinterpret it.

2. COMMUNICATIONAL NETWORKS IN THE ORGANISATION

Besides already mentioned ways of communication, there are channels through which information flow, which is very important for analysing the communication as the element of organisational behaviour, and those are formal small group network and informal group network.

2.1. Formal small group networks

Picture 1. Three forms of network in small formal groups



Source: according to Robbins, S. P.: Organizational Behavior, 10-th ed., Prentice Hall, New Jersey, 2003., p. 290.

It is visible from picture 1. that there are three formal small groups networks : chain network, circle network, and wheel network. The differences between networks are in the basic features of each network. Chain network of formal small groups mainly follows the formal chain of command, whereas the circle network has the leader as the central person for conducting all communications within the group. As opposed to chain and circle network, wheel network is characterised by openness that enables the joint communication of all members of the group. If we compare the networks in small groups having in mind certain criteria as speed, accuracy, leader emergence and member satisfaction, we would conclude that in order to come to a conclusion, we have to wisely choose a particular form of the communication network depending on the aim we want to achieve. If we appreciate accuracy, then the chain network should be used. The small formal groups circle network is to be used if our aim involves some of its features: great speed, accuracy and high emergence of the leader. Wheel network is fast and enables high member satisfaction.

2.2. Informal groups communication network

"Informal communication in the organisation, in Anglo-American business culture known as *grapevine*[1] is secondary and very complicated communication network that is based on personal contact, and opposed to the system of formal communication it does not follow a particular line settled in advance." (Fox;

[1] Identification stems from the American Civil War. Hanging from the trees and bushes, the telegraph wires resembled the grapevine. The system was unreliable, and messages often wrongly interpreted. (Smith Vigor 1991:105)

2001, 46.) Since *grapevine* is not a less important source of information, the managers should acknowledge also the informal communication systems in the organisation, and use them for the welfare of their organisation.

"Informal communication reflects the employees' perception concerning the organisation. It often carries or asks for information that the management, accidentally or deliberately, has not formally disclosed." (Fox; 2001, 47.) *Grapevine* consists of three main features. "Firstly, it is not controlled by the management. Secondly, most of the employees consider it more feasible and more reliable than the official notifications provided by the top management. And thirdly, it is mostly used for the self-interest of the people within it." (Robbins; 2003, 290.)

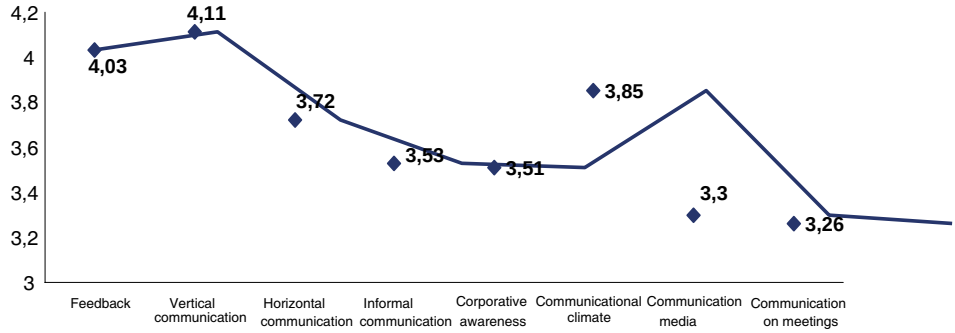
3. A STADY OF EMPLOYEE COMMUNICATION SATISFACTION IN ORGANISATIONAL SETTINGS

In order to reaffirm the above mentioned about the importance of communication for the organisation, and to see the employee communication satisfaction on a particular level, for making of this paper apart from secondary data, there have been used also primary data obtained by the own research.
The research involved employees of four organizations from Osijek-Baranja County, which were ready to cooperate.

We carried out a questionnaire for the needs of the research, and the questionnaires were handed in to the employees in person. There were 146 examinees (the employees from four organizations from Slavonija and Baranja area).

The questionnaire comprised 6 units which covered the elements of organizational behaviour, and one unit concerned the issues of communication satisfaction in organizations. The questions in the questionnaire were scaled by "closed" answers with given modality characteristics. Pursuant to the theme of the paper we will point out only the results of importance for the presentation of this work. We used a PC based program SPSS (*Statistical Package for Social Sciences*) for the statistic analysis of the collected data.

Diagram 1. Communication satisfaction



Source: authors' own research

From questioning the examinees about the communication satisfaction in the organisation from Diagram 1. evident are these obtained data. The examinees were asked individual questions about the communication satisfaction, and the same have been grouped in visible categories in the diagram 1.

The employees show the greatest satisfaction towards the vertical (mean = 4,11) and return communication (mean = 4,03). Individual questions which were given the examinees and to which they showed the biggest satisfaction (vertical communication) referred to the satisfaction with the formal communication with their immediate superiors, the satisfaction stemming from the informal company with the superior, and the questions about how the superior helps and pays attention to the things his employees are saying.

The examinees show the lowest satisfaction with the meeting communication (mean =3,26) where the questions referred to the satisfaction with meeting organisation, usefulness of information obtained on meetings, and the duration of the meetings. The examinees also showed dissatisfaction with the media of communication (mean = 3,3) which is visible from the questions which referred to the satisfaction with e-mail usage as the medium of communication, and the possibility and quality of communicating via modern media.

Table 1. Communication satisfaction in the organisation

	I am satisfied with how much the communication in the company helps the individual feel as an important part of it.							
	n	%	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	sig.hk.
Sex	148	100	6	16,2	36,4	33,1	8,1	0,62
Male	52	35,1	9,6	19,2	34,6	28,8	7,6	
Female	96	64,8	4,1	14,5	37,5	35,4	8,3	
Age group	148	100	6	16,2	36,4	33,1	8,1	0
to 30 years of age	37	25	0	2,7	51,3	40,3	5,4	
aged between 31 and 40	31	20,9	16,1	22,5	38,7	16,1	6,4	
aged between 41 and 50	53	35,8	24,5	30,1	32	5,6		
aged between 51 and 60	27	18,2	0	11,1	25,9	44,4	18,5	
The level of education	148	100	6	16,2	36,4	33,1	8,1	0,16
Without high education	66	44,5	9	9	34,8	37,8	9	
With high education and more	82	55,4	3,6	21,9	37,8	29,2	7,3	
Employment	148	100	6	16,2	36,4	33,1	8,1	0,11
First employment	69	46,6	7,2	18,8	34,7	28,9	10,1	
Second employment	44	29,7	4,5	2,2	45,4	38,6	9	
Third employment and upwards	35	23,6	5,7	28,5	28,5	34,2	2,8	
Years of service	146	100	6,1	16,4	36,9	33,5	6,8	0,02
to 5 years of service	43	29,4	0	4,6	44,1	41,8	9,3	
5 and more years of service	103	70,5	8,7	21,3	33,9	30	5,8	
Income	144	100	6,2	16,6	36,1	34	6,9	0,28
to the average salary in RH	58	40,2	5,1	13,7	29,3	41,3	10,3	
more than the average salary in RH	86	59,7	6,9	18,6	40,6	29	4,6	
Type of ownership	148	100	6	16,2	36,4	33,1	8,1	0,01
Private sector	79	53,3	11,3	18,9	37,9	26,5	5	
Government sector	69	46,6	0	13	34,7	40,5	11,5	
Communication	148	100	6	16,2	36,4	33,1	8,1	0
Dissatisfied by the communication	24	16,2	33,3	58,3	0	8,3	0	
Satisfied by the communication	124	83,7	0,8	8	43,5	37,9	9,6	
Influence on decision-making	146	100	6,1	16,4	36,9	33,5	33,5	0
Having influence	44	30,1	0	20,4	36,3	43,1	0	
Without influence	68	46,5	11,7	20,5	29,4	32,3	5,8	
Cannot estimate the influence	34	23,2	2,9	2,9	52,9	23,5	17,6	

Source: authors' own research

Table 1. shows the obtained data based on the total sample to the assertion made: I am satisfied with how much the communication in the company helps the individual feel as an important part of it. Visible data are arranged into several segments: demography (sex, age group, level of education, place of employment, years of service, income, and a type of ownership of the organisation), and we showed the data according to the level of communication satisfaction within the organisation, as well as the assessment of what kind of influence the employees have in decision making within the organisation.
Namely, there is a notable statistical link (at the level of significance) between individual segments like: age structure (at the 0,00 level of significance), according to years of service (at the 0,01 level of significance), then according to the type of organisation ownership (at the 0,01 level of significance), and according to the communication and as well as by the influence of employees in decision making within the organisation.

4. CONCLUSION

Greater attention should be paid to the communication as the element of organisational behaviour because of the growing changes within organisations which face the leadership with new challenges and opportunities for testing the different organizational behaviour concept modes. By identifying the level of communication satisfaction within the organisation we get an insight into organisational forces, but simultaneously also get an insight into weak points in the area of communication within the organisation. We can also use them as the basis for making important business decisions within the organisation. Examining the results of the research done within observed economic operators in Osijek-Baranja County it is visible that the employees are dissatisfied by the vertical and return communication, while they have showed the greatest dissatisfaction with the chosen communication media and the overall meeting communication. Causes for this kind of expressed satisfaction we can search partly in the possible different understanding of the communication importance of the leadership, and equally in the usage of old-fashioned media used in communication between different levels.
We find it essential that there be a great investment from the side of the organisation towards satisfaction growth on those levels where there has been shown the least satisfaction. It is important to develop awareness about the importance of communication which is shown through individual growth, job satisfaction and motivation of the employees which again leads to employees' loyalty towards their parent organisations.

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HUMAN RESOURCES IN THE RURAL AREA OF SLAVONIA AND BARANJA* - THE NEW RURAL IMAGE

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Abstract

The rural area is most often defined by the type of settlements (village), the dominating profession (agriculture) and by the prevailing social interactions (typical for the community). The "vicinity" of nature is also a significant determination of a rural area. Industrialization and the modernization stimulated by it in the second half of the twentieth century have changed the village image, from the dominating profession and professional structure of its inhabitants to the new qualities of social interaction.

Slavonia and Baranja, as the traditionally most rural regions in the Republic of Croatia, are experiencing changes not just through the marginalization of the meaning of agriculture for the social development altogether, but also through the changes in the rural areas. This can be monitored through changes of the educational and professional structure of village inhabitants, through their comprehension of the quality of life in the village and in the city, as well as through their perception of facilities characteristic for villages and facilities characteristic for cities. The conducted research in twenty villages in Slavonia and Baranja and in the city of Osijek partly confirm these changes, but also deny the hypothesis that the future of this region is without agriculture, at least in the opinion of the examinees.

A part of the results from the research conducted within the project "The post-transitional identity of the rural areas of Slavonia and Baranja" will be shown in this paper.

JEL classification: O15, O18

Keywords: rural area, Slavonia and Baranja, educational structure, professional structure, village, city.

1. Introduction

Modern society is defined by change. Changes are taking place in ever shorter intervals, and they are ever more profound and encompassing. Knowledge and innovation are key drivers of change that is recognized not only as new

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technologies, but also as societal changes. It is not only the case that the technology of new production (technical revolutions) alters the man's power over nature, warns C. Freeman, but the new knowledge technology changes the system of relations between social, economic and technical areas (technical mutations), and consequently also the nature of social relations (Lesourne, 1993:134). Nowadays it is frequently emphasized that we live in 'knowledge society' that relies on smart technologies with information as the basic raw material. 'Knowledge workers' are gaining in importance, being more that labour force; rather, they are a 'company's capital' (Drucker, 2007:99). For this reason, education has become an important lever of social stratification and mobility, since it is a systematic way of gathering information and creating knowledge. It is not only individuals and social groups that differ according to the education level, i.e. the quantity of accessible and available information; it is now societies that are differentiated as the ones abounding in information, and those that are poor in this regard.

The importance of having information is also displayed in the new economic paradigm where the global economy is increasingly referred to as the *information/global economy*. Castells argues that the 'networked enterprise' has become a new organizational form of information/global economy. Within the network new opportunities are opening up, whereas survival outside the network is becoming increasingly difficult. In this way, the new operational unit – *network* arises; it is no longer the *company* (Castells, 2000:94-99, 203). According to A. Bard and J. Söderqvist, the advances in *digital interaction technology*, which has become the prevailing communication medium, are certainly a paradigmatic change (Bard, Söderqvist, 2003:10).

The pinnacle of this new value system is *Toyotism*, a concept founded on error-free predictions. This is a new management system aimed at reducing uncertainty, and not at encouraging adaptability. The basis of everything is information, obtaining it in time and using it effectively (Castells, 2000:191).

All these changes are not only a matter of high technology that is changing secondary, tertiary and quaternary sectors of economic activity. They are very much present in the primary sector as well. Agriculture is more than a food-providing activity; it is also used as an indicator of a society's overall development level. Active agricultural population has been on a decrease, although the quantity of food in the world is constantly growing. However, the distribution of food is increasingly unjustified. Such a development of attitudes towards agriculture brings us closer to Kissinger's claim "Control the oil and you can control entire Continents. Control food and you control people." (Engdahl, 2005:13). The knowledge required for the new, GMO-technology driven agriculture, keen competition on the world market, as well as a shift in government attitudes towards agriculture (caused by global integrations), have all played a major role in the process of agriculture no longer being treated as a

'tradition-defined activity of an area', as an 'activity pursued by the lower educated', 'activity of underdeveloped regions' and the like.
These changes are observable in Croatian rural areas as well, in particular in Slavonia and Baranja, the region that used to be defined by agriculture and country life. In this paper we will discuss only the changes in regard to socio-professional structure of village population, and the changes in views regarding the quality of life in the village and the town, i.e. changes in perception regarding the characteristics of village vs. town life. Furthermore, we will outline the changed attitude towards nature which is more and more being exploited and less and less cultivated and nurtured.

2. Research Methodology

A field study was undertaken to find out whether and to what extent the changed reality has been accepted by the local population, and how much the people are still living in the traditional framework of the region. An empirical research (with a questionnaire) was carried out in twenty-three villages of three Slavonian counties (Požega-Slavonia, Vukovar-Srijem and Osijek-Baranja county) and in the city of Osijek, as the only truly urban centre of the region (a combination of a cluster and a random sample). The sample comprised 608 respondents[†], 400 from villages and 208 from the town. The survey was taken in April 2008.
The data obtained in the research was processed in the statistics program SPSS, using the models of descriptive and inferential statistics.
The paper will present some results arising from the research conducted within the project "Post-Transition Identity of Rural Area in Slavonia and Baranja".

3. Changes in Socio-Professional Structure of Village Population in Slavonia and Baranja

The sample of 608 respondents is structured from a portion of respondents living in villages (400 or 65.8%) and a portion of people residing in town (208 or 34.2%). Tables 1 and 2 show us the gender and age structure of the sample. In the undivided sample the number of women is slightly higher (by 8.2%). This difference is more noticeable in town population (11.6%), which can be accounted for by the fact that men in village households are more bound to their

[†] The sample was chosen in the following way: in randomly chosen villages (probability of choice was proportionate to the settlement size) we made a random choice of households. There we looked for a respondent following the criterion of 'last birthday', i.e. who of the present family members was the last to celebrate their birthday. They had to be over 17 years of age to be included in the sample. In the city of Osijek, households were randomly chosen, and the respondents within a household were also chosen by the 'last birthday' method.

household and farm by the nature of their work, which is less the case in town households.

According to the age structure, the sample is divided into four groups. While the most numerous group in villages are people of up to 29 years of age (28.2%), in the town it is the group between 45-59 years of age (29.8%). The differences being small, however, it can be asserted that the sample is evenly distributed over age groups.

Table 1. Gender structure

Gender	Village	Town	Total
Men	187 (46,8 %)	92 (44,2%)	279 (45,9%)
Women	213 (53,2 %)	116 (55,8%)	329 (54,1%)
Total	400 (100%)	208 (100 %)	608 (100%)

Table 2. Age structure

Age	Village	Town	Total
Up to 29	113 (28,2%)	60 (28,8%)	173 (28,5 %)
30 – 44	111 (27,8%)	46 (22,2%)	157 (25,8 %)
45 – 59	108 (27,0%)	62 (29,8%)	170 (28,0 %)
60 and over	68 (17,0%)	40 (19,2%)	108 (17,8 %)
Total	400 (100%)	208 (100%)	608 (100 %)

Table 3. Marital status of respondents

Marital status	Village	Town	Total
Married	272 (68,0 %)	128 (61,5 %)	400 (65,8 %)
Single	126 (31,5 %)	79 (38,0 %)	205 (33,7 %)
Not stated	2 (0,5 %)	1 (0,5 %)	3 (0,5 %)
Total	400 (100 %)	208 (100 %)	608 (100 %)

With regard to the marital status (Table 3), 2/3 of respondents are married (65.8%). This is even more pronounced in villages (68.0%).

In terms of education, village respondents are slightly lagging behind. This difference, however, is not so pronounced as to confirm the previously prevalent opinion that village population is less educated. Table 4 shows that secondary school is the most frequent education level among the respondents. Nevertheless, this level of education is more present in town population. The percentages for tertiary-level education are also higher in town (24.1% in comparison to 18.8% in villages). The village sample still exhibits a high percentage of people whose formal education remains at elementary school level (almost every fourth respondent, i.e. 23.5%).[‡]

[‡] The sample surveyed here indicates some positive trends in comparison to the Census of 2001, according to which as many as 33% of total Croatian population remained at the primary level of education (see more in Šundalić, 2005:13).

Table 4. Level of education

Education	Village	Town	Total
Primary school	94 (23,5 %)	29 (13,9 %)	123 (20,2 %)
Secondary school	227 (56,8 %)	123 (59,1 %)	350 (57,6 %)
College/university	75 (18,8 %)	50 (24,1 %)	125 (20,6 %)
Master's degree, Ph.D.	4 (1,0 %)	5 (2,4 %)	9 (1,5 %)
Not stated	-	1 (0,5 %)	1 (0,2 %)
Total	400 (100 %)	208 (100 %)	608 (100 %)

The occupational breakdown is given in Table 5. Every fifth respondent is an 'office worker'. In both the village and the town samples this is the most numerous group. In village population it is followed by skilled workers and pensioners, and then by university educated professionals, with farmers ranked fifth (only 8.5% of respondents). Entrepreneurs are equally present in both village and town. The groups of pupils/students and university educated professionals are more numerous in town.

Table 5. Respondents' occupations

Occupation	Village	Town	Total
Farmer	34 (8,5 %)	1 (0,5 %)	35 (5,8 %)
Skilled worker	61 (15,2 %)	24 (11,5 %)	85 (14,0 %)
Office worker	77 (19,2 %)	41 (19,7 %)	118 (19,4 %)
Entrepreneur	21 (5,2 %)	11 (5,3 %)	32 (5,3 %)
Professional/manager	43 (10,8 %)	31 (14,9 %)	74 (12,2 %)
Pupil/student	33 (8,2 %)	31 (14,9 %)	64 (10,5 %)
Housewife	46 (11,5 %)	12 (5,8 %)	58 (9,5 %)
Pensioner	51 (12,8 %)	37 (17,8 %)	88 (14,5 %)
Unemployed	33 (8,2 %)	19 (9,1 %)	52 (8,6 %)
Not stated	1 (0,2%)	1 (0,5 %)	2 (0,4)
Total	400 (100 %)	208 (100 %)	6008 (100 %)

The five tables above reveal small but nonetheless suggestive differences between the village and the town sample. For example, survey takers found it easier to find a male respondent in the village than in the town. This can be explained by the fact that village men are less occupied with activities outside the home in comparison to town. The same was noticed for two younger age groups (17-29 and 30-44 years of age) which are slightly more numerous in the village sample.

The institution of marriage is more present in the village (as many as 68% respondents are married). As for the education structure, the village still shows a high percentage of people who remain at the elementary education level (as many as 23.5%). A noticeable change is shown in Table 5: only 8.5% of village respondents described themselves as farmers. Occupations such as office and skilled workers, and even university educated professionals are more represented. This confirms the thesis that socio-professional structure of

villages in Slavonia and Baranja is approaching the standards of the developed world.
The changes observable as changes in socio-professional structure of village population are reflected also in the *quality of village life*. It is no longer the case that village population believes they are predestined for a different life than people in town. The word 'different' used to mean life conditions marked by poor infrastructure, technological backwardness, traditional life patterns, agriculture as a dominant activity of the majority of village population. Such conditions used to be taken for granted by villagers themselves, whereas their attitude towards life conditions has changed today. To a simple question "Do you think that the village way of life should be made more similar to the way of life in towns?" (Table 6), almost half of village respondents answered affirmatively (47.8%). Among the town respondents, the percentage that gave an affirmative answer to the same question is much lower – 36.5%. With the negative answer there is a reverse situation: a higher percentage of town respondents (52.9%) in comparison to village respondents (41.7%). This can be explained with the more pronounced need in village population to improve life conditions in the village. Those who are against it are either satisfied with the current situation or they wish to preserve village distinctiveness in comparison to town.

Table 6. Approximation of village and town ways of life

Should village and town ways of life be approximated?	Village	Town	Total
Yes	191 (47,8%)	76 (36,5%)	267 (43,9%)
No	167 (41,7%)	110 (52,9%)	277 (45,6%)
Don't know	37 (9,3%)	22 (10,6%)	59 (9,7%)
Not stated	5 (1,2%)	-	5 (0,8%)
Total	400 (100%)	208 (100%)	608 (100%)

However, a more stratified answer about the way the respondents view the village life conditions was obtained from the instrument composed of 11 claims, which was submitted to factor analysis (Varimax rotation) aimed at revealing some latent dimensions of views of village life. The criterion used to compose the instrument was the assumption that the respondents will recognize whether or not traditional social patterns are present, primarily *togetherness and solidarity* (claims 1,2,3,4), if there is a *prospect for change* of village and village population (claims 5,6,7,8), and finally, if there are differences in the *town and village way of life* (claims 9,10,11).

The answer to the question "What is village life like?" was sought through respondents' acceptance or rejection of the following claims:
1. Village people live in togetherness and have trust in each other.
2. Village people are willing to help each other (there is solidarity).

3. People living in one village know each other and establish close relationships.
4. Village life means living in a healthy natural environment.
5. Village life brings traffic isolation to the inhabitants.
6. Village life brings technical lagging behind for the inhabitants.
7. Living in a village does not provide people with the possibility for a professional career.
8. Village environment has a tight control over behaviour of village inhabitants (power of tradition).
9. Village life is no longer determined by agriculture as the main economic activity.
10. Village life has turned into 'sleeping in villages' since people are mostly employed in towns.
11. The way of life in the village has become very similar to the town way of life.

Each claim is followed by a Likert scale from 1 to 5 (1 means 'strongly disagree', 2 – disagree, 3 – I neither agree nor disagree 4 – agree, 5 – strongly agree).
Table 7. shows the frequency of answers 4 (agree) and 5 (strongly agree) for particular claims and their ranking according to the sum of the observed values.

Table 7. What is village life like? (in % for the village sample)

Claims	4	5	4+5	R
1.	28,3	5,5	33,8	6
2.	49,0	10,0	59,0	3
3.	55,8	12,5	68,3	2
4.	55,0	18,0	73,0	1
5.	22,3	5,0	27,3	9
6.	18,0	3,3	21,3	11
7.	25,8	7,0	32,8	8
8.	30,8	7,5	38,3	5
9.	48,3	10,0	58,3	4
10.	26,5	6,8	33,3	7
11.	24,3	2,5	26,8	10

The frequencies indicate that almost three fourths of respondents (73%) view village life as living in a healthy natural environment (claim 4). A large number of respondents (68.3%) ranked as second knowing each other and close relationships between village inhabitants (claim 3). High acceptance (over 50%) is exhibited by claim 2 – solidarity and willingness to help each other (59%), and claim 9 – agriculture has ceased to be the main economic activity in the village (58.3%). The remaining seven claims are far less accepted by the respondents. Thus the fifth-ranked claim 8 (the power of tradition in the village) is acceptable for only 38.3% of respondents. Togetherness and trust (claim 1) as

a village characteristic is accepted by only 33.8% of respondents. Even less accepted are the claims that are in a way 'objections' to the village way of life: less than a third (27.3%) accept the claim on traffic isolation (claim 5), about a fifth (21.3%) accept technical lagging behind as a feature of village life (claim 6).[§] Nevertheless, only one quarter of respondents believe that the way of life in the village has become very similar to the town way of life (claim 11, 26.8%).

One thing should be pointed out in particular, namely, the weakening feeling of togetherness and solidarity in villages (opinions regarding claim 1), but also rejecting the thesis that village life brings technical lagging behind (opinions regarding claim 6). Nevertheless, this has not approximated the village and the town way of life in the opinion of our respondents (views regarding claim 11).
By applying the multivariate statistical technique on the same instrument, for the village sample, we discovered three latent dimensions which provide a more complete picture on respondents' opinions about village life and make it possible to correlate the obtained variables with socio-demographic variables. Factor analysis was used to extract three factors, which were subsequently subjected to Varimax rotation. The first factor contains the claims 1,2,3,4; the second one contains the claims 5,6,7,8, and the third factor contains the claims 9,10 and 11. According to the G-K criterion, each factor has a characteristic value higher than 1. The factors taken together interpret 53.9% of the variance (Table 8).

Table 8. What is village life like, base solution

Factor	Characteristic value	% factor var.	Total % var.
1.	2,30	20,9	20,9
2.	2,19	20,0	40,9
3.	1,43	13,0	53,9

The first factor is comprised of four variables (Table 9) that share an affirmative attitude towards content traditionally associated with the village: togetherness and trust, solidarity in everyday life, closeness in relationships, and healthy natural environment which make village distinct from the town industrialized environment. The idyll of country life is still present in the consciousness of village population[**], although it was previously demonstrated

[§] A significantly different picture of village – isolated, underdeveloped, and without perspective – was perceived by the young people of Slavonia and Baranja in a survey conducted in the year 2000, as well as by students at Osijek University. As many as 73.33% of respondents (110 out of 150) identified the village as having these characteristics (Šundalić, 2000:383). The sample, of course, is quite different, but the results indicate the impact of age and education on the opinions regarding the quality of life in villages.

[**] Rural area is viewed by some as *rural idyll* with a slower pace of life, where people prefer to follow the natural rhythms rather than the market flows. This is an organic community where

that changed professional structure throws this into doubt (Table 5). Although the reality is different, in the villages of Slavonia and Baranja one can notice resistance to changes in people's minds as they wish to retain the fundamental values of togetherness. This factor can thus be called "**Idyll of country/village life"**.

Table 9. Factor 1, Idyll of country/village life, factor structure

1. Village people live in togetherness and have trust in each other.	,75
2. Village people are willing to help each other (there is solidarity).	,83
3. People living in one village know each other and establish close relationships.	,80
4. Village life means living in a healthy natural environment.	,56

The second factor is also comprised of four variables (Table 10). These are actually the claims 5,6,7 and 8 that indicate several ways in which village and its inhabitants are deprived. Traffic isolation is a consequence of neglecting villages in terms of infrastructure, whereas technical lagging behind can be caused by lower education of village inhabitants and by agriculture being a technologically less demanding activity. Such tradition unifies both the job offer and the expectations of village inhabitants, which means there is no incentive or possibility to pursue a professional career, especially for young people. This is why this factor can be named **"Lack of perspective in rural areas"**.

Table 10. Lack of perspective in rural areas, factor structure

1. Village life brings traffic isolation to the inhabitants.	,74
2. Village life brings technical lagging behind for the inhabitants.	,81
3. Living in a village does not provide people with the possibility for a professional career.	,77
4. Village environment has a tight control over behaviour of village inhabitants (power of tradition).	,44

The third factor comprises the remaining three claims (9, 10 and 11). These are variables suggesting a changed view of village life in comparison to the traditional image of village. If the village is no longer determined by agriculture as the main economic activity (variable 1), if village life has turned into 'sleeping in villages' since people are mostly employed in towns (variable 2), and if it is claimed that he way of life in the village has become very similar to the town way of life, it can be concluded that village life has significantly changed. For some respondents, the new identity of village means that the village has been "de-countrified" and modernized. This is why the third factor was named **"Equalizing the village and town living conditions"**.

people have time for each other, where they occupy a certain position and have their role. It is a refuge, a kind of shelter from modernity. (Rye, 2004:5)

Table 11. Equalizing the village and town living conditions, factor structure

1. Village life is no longer determined by agriculture as the main economic activity.	,71
2. Village life has turned into 'sleeping in villages' since people are mostly employed in towns.	,63
3. The way of life in the village has become very similar to the town way of life.	,59

One may wonder which factors have an impact on different views of village life. Because of the limited scope, here we will investigate only the possible connection between *the respondents' level of education* and their perception of village life. The results of variance analysis are shown in the next Table.

Table 12. Education and the perception of country/village life

Perception of country/village life	F	sig.
Village idyll (factor 1)	1,51	0,221
Lack of perspective in rural areas (factor 2)	3,69	0,026
Equalizing of living conditions (factor 3)	3,58	0,028

As can be seen from the Table, the respondents' level of education (three groups were measured: primary school, secondary school, and higher education) is statistically significantly connected with the second and third notion of village life (at the level of significance 0.05). Post-hoc analysis indicates that respondents with higher education (university or college), compared to those with primary or secondary education, are less likely to believe in lack of perspective in rural areas, and are more convinced in equalizing the village and town living conditions. This can be a result of their activities outside the village where they live, which gives them opportunity to appreciate the advantages of village life and recognize the disadvantages of urban way of life.

The frequency distributions and factor analysis lead to the following conclusions: response frequencies indicate a growing acceptance of changes in village life; nevertheless, the difference between village and town life remains. The shaped factors suggest that there are three orientations when considering attitudes towards village life. While the first orientation is dominated by a traditional way of life (country idyll, 1. factor), the second orientation is defined by lack of perspective in rural areas (2. factor), and the third orientation is most open in its view that life conditions in towns and villages are becoming more similar (3. factor). The variance analysis has shown the connection between education level and perceptions of village life. Highly educated respondents view the village in a more positive light than those with lower education.

4. Conclusion

Post-transitional *reality of rural area* is increasingly becoming *reality of agrarian area*. The change that has occurred in not in name only; rather, it is profound, caused by permanent processes of industrialization and modernization[††], as well as marketization of agriculture, i.e. of village's fundamental activity. These processes have brought about a permanent change in socio-professional structure of village population, their awareness of new values and content of urban environment. This transformation of perceptions has occurred mainly due to growing mobility of previously very static village population, or more precisely, peasant population. The increase in daily migrations, i.e. commuting either to work other that agriculture or to school, has brought new outlook on the future. Younger people sought careers outside the village, and older people started looking for more secure livelihood outside agriculture. In the words of A. Blanc, the new reality is that villages no longer live as rural societies in the memory of the past, preserving natural forms of life, with slow changes and development (Blanc, 2003:202). Today's villages are dynamic environments that have been changing their identity primarily through altered socio-professional structure of their population.

Part of the research results described in this paper indicates the new face of the village, its new identity. Although somewhat 'weaker' than town education structure, in villages there is a significant shift towards secondary education, as well as towards higher education (Table 4). A major change is shown in Table 5: only 8.5% of respondents designate themselves as farmers. A higher percentage is taken by the occupations of office and skilled workers, and even highly educated professionals and managers. This leads us to the thesis that socio-professional structure of Slavonia and Baranja village is changeable under the influence of wider environment.

The extracted factors also suggest 'dynamism' of rural areas, especially in terms of population. They do not share uniform views regarding the notion of village life, its perspective and comparisons to town. Perceptions of village life are threefold: insisting on preserving the traditions, indicating the lack of perspective in rural areas, accepting the approximation of village and town way of life. This third option is more noticeable with population with higher education, which indicates the significance of education for the outlook on the future of both individuals and the village in general.

[††††] It was Weber who pointed out that industrialization had but destroyed communal households, the backbone of rural communities, as well as neighbourhood communities. Solidarity and reciprocity have given way to profit interest (Weber, 1976:295-297).

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METHOD OF BUSINESS ORGANIZATION IN BOSNIAN AND HERZEGOVINIAN COMPANIES

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Abstract

Business organization can be based on science or empirical method. Science method is based on organization models and definitions from literature and empirical method is based on experience in doing business. We will research which method is used in Bosnia and Herzegovina companies. Our research objects were four companies which are temporarily the best in Bosnia and Herzegovina, Energoinvest dd Sarajevo, Energoinvest SUE, Energoinvest TDS, Butmir d.o.o. Our goal is to investigate all elements defined in this model. If those elements are in accordance with definitions and models from literature it means that business organization is based on science method. Company who follow science method can be considered as serious company and important actors on EU market in process of European integrations.

JEL classification: D23, L16

Keywords: 7s model, EU business, business organization, science method, empirical method

1. INTRODUCTION

Process of European integrations is irretrievable and unstoppable process. The key motive of integration is economical and business progress on the EU market and cooperation with EU companies. Although the process is slow and it will pass long time till the integration process will have been finished companies must start its preparations for joining EU market now. In this paper we will focus on one aspect of preparation, business organization. Organization can be based on science method or empirical method. Science method is based on models and definitions from literature and empirical method is based on experience. We will research which method is used in Bosnia and Herzegovina companies. Our research objects will be four companies which are temporarily the best in Bosnia and Herzegovina, **Energoinvest dd Sarajevo, Energoinvest SUE, Energoinvest TDS, Butmir d.o.o.**.

The research will be done on base of 7s model. Our goal is to analyze all elements defined in the model. Since the elements are categorized as hard (Strategy, Structure, Systems) and soft elements (Shared Values, Style, Staff, Skills) (http://www.mindtools.com/pages/article/newSTR_91.htm, date of access 15.01.2009). If those elements are in accordance with definitions and models from literature it means that business organization is based on science method. Company who follow science method can be considered as serious company, which can be part of EU business, nevertheless as an actor on EU market or as partner of EU companies on the market of third countries.

2. 7S MODEL

7S model consists of 7 elements which are interdependent and categorized as "hard" and "soft" elements. The difference between hard and soft elements is that hard elements are easier to define and management can easily influence on them and soft elements are difficult to describe and depend on culture of company (http://www.mindtools.com/pages/article/newSTR_91.htm, date of access 15.01.2009).

2.1. Strategy

Business strategy is the process of defining the medium to long – term objectives of a business and how it seeks to achieve these objectives (Harris: 1999, p. 228). Here we will focus on marketing strategies using Porter generic strategies, **cost leadership, product differentiation** and **focus strategy** as it is shown in Table 1.

Table1: Porter generic strategies

COST LEADERSHIP	It means to be the cheapest producer in the market
PRODUCT DIFFERENTATION	It means creating consumer perception of difference between similar products
FOCUS STRATEGY	It means concentrating on small segment of the market which others have neglected

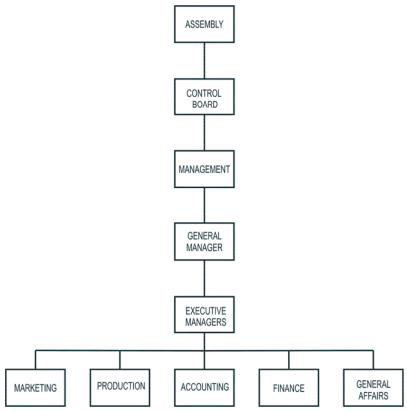
Source: Done by author

2.2. Structure

Structure is the way how company is organized. European business science differ several organization structure models:

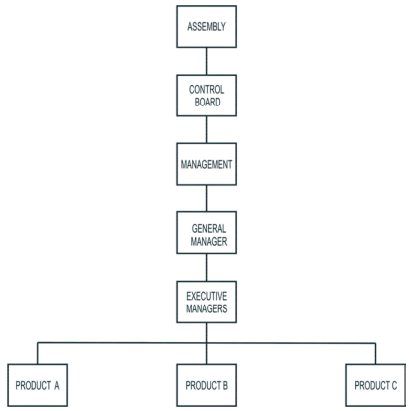
- **Organization by function (Figure 1)** means that all functions in company are clearly defined and organized into departments in order to achieve company's goals (Harris, 1999).
- **Organization by product (Figure 2)** means that company is organized on the basis of products with separate division for each product (Harris, 1999).
- **Organization by territory (Figure 3)** means that company is organized on the basis of region markets where company is present (Harris, 1999).
- **Conglomerate organization by company (Figure 4)** is similar to organization by Strategic Business Unit (SBU). It means several small companies which are set into one big company. Every SBU must have mission and vision, its own competition, own business plans different of other SBU, to manage own resources, to be right size (not to small, not too big) (Weihrich, Koontz, 1998).
- **Matrix organization (Figure 5)** is combination of functional and project organization. In this organization responsibility is divided between functional and project units (Žaja, 1993).

Figure 1: Organization by function



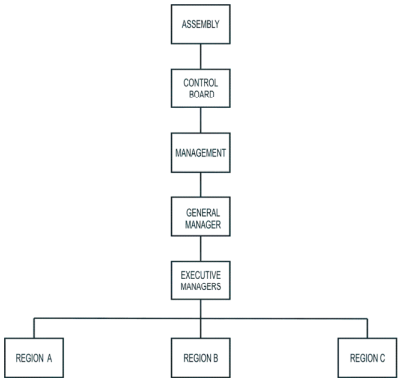
Source: Hadžiahmetović et al, 2008

Figure 2: Organization by product



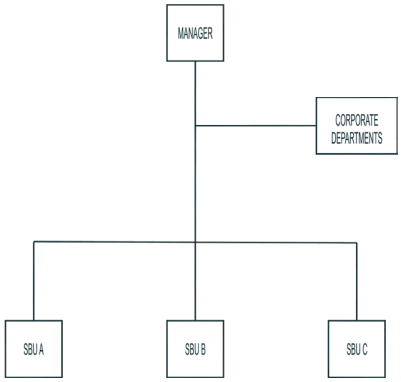
Source: Hadžiahmetović et al, 2008

Figure 3: Organization by territory



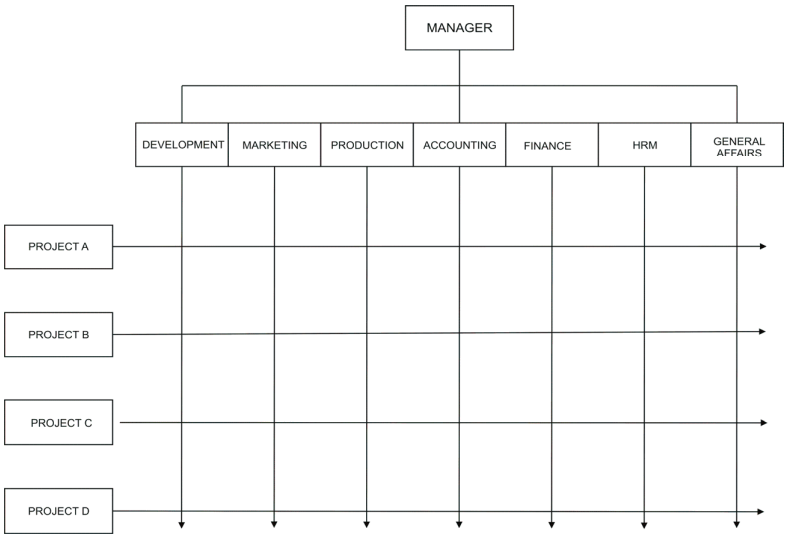
Source: Hadžiahmetović et al, 2008

Figure 4: Organization by territory



Source: Sikavica, 1991

Figure 5: Matrix organization



Source: Žaja, 1993: 152

2.3. Systems

Systems are daily activities and procedure engaged by staff in order to do the job. In 21st century every company must have established **information system**, **quality management system** and **control system**.

Information system is set of components doing process of acquisition, storage, processing and distributing data to its users. **Computer based information system** is information system which use computer, in other words information technology in order to execute planned tasks in data processing (Bajgoric, 2003).
Quality management system (ISO 8402:1994**)** is organization structure, procedures, processes and resources necessary for quality management (Heleta, 2004: 91).
Quality management system (ISO 9000:2000) is system that from the attitude of quality leads organization as well as manages with it (Heleta, 2004: 91).
Control system includes three kinds of control: **marketing control, operating control, and strategic control** (Kotler et al, 2001: 103).

- **Marketing control** is the process of measuring and evaluating marketing strategies and plans and taking corrective action to ensure the achievement of marketing objectives (Kotler et al, 2001: 103).
- **Operating control** involves checking ongoing performance against the annual plan and taking corrective action if necessary. Its purpose is to ensure that the company achieves the sales, profits, and other goals set out in annual plan. It also involves determining profitability of different products, territories, markets and channels (Kotler et al, 2001: 103).
- **Strategic control** involves looking at whether the company's basic strategies match its opportunities and strengths (Kotler et al, 2001: 103).

2.4. Shared values

Shared values include clearly defined and documented key values on which company exist. The business experience shows that shared values are defined in quality management system as policy of quality and goals of quality.

2.5. Style

Term style means the style of leadership which is adopted in company. Our research will be based on Rensis Likert model of leadership. This model is based on four management systems (Weihrich, Koontz, 1998) shown in table below:

Table 2; Likert four systems of leadership

SYSTEM 1	Leadership is autocratic with low confidence at employees and motivation based on threats and punishments.
SYSTEM 2	Leadership is based on low confidence at employees and motivation based on prizes, rarely on threats and punishments
SYSTEM 3	Leadership is based on big but not complete trust in employees using their opinion. Motivation is based on prizes, partly on participation and rarely on threats and punishments
SYSTEM 4	Leadership is based on complete confidence in employees using their ideas and opinions. Motivation is based on economical prizes depending on advancement in achieving goals.

Source: Done by author

2.6. Staff

Staffs are the employees and their capabilities for doing business. Here we will focus on human resource management. We will insist on two models, Rodger's plan (Alec Rodger) and Fraser's (John Munro Fraser) (Table 3).

2.7. Skills

Skills are actual skills and competencies of the employees working for the company. In our research we will insist on technical and commercial skills and its improvement.

Table 3: HRM models frequently used

The seven point plan
Physical make-up: health, appearance, bearing and speech Attainments: education, qualifications, experience General intelligence: intellectual capacity Special aptitudes: mechanical, manual dexterity, facility in use of words and figures Interests: intellectual, practical, constructional, physically, active, social, artistic Disposition: acceptability, influence over others, steadiness, dependability, self-reliance Circumstances: any special demands of the job, such as ability to work unsocial hours, travel abroad, etc
The five-fold grading system
Impact on others: physical make-up, appearance, speech and manner

Acquired qualifications: education, vocational training, work experience
Innate abilities: quickness, of comprehension, aptitude for learning
Motivation: individual goals, consistency and determination in following them, success rate
Adjustments: emotional stability, ability to stand up to stress, ability to get on with people.

Source: Weightman Jane, 2004: 106

3. OBJECTS OF RESEARCH

Objects of research are four companies: **Energoinvest dd Sarajevo, Energoinvest SUE, Energoinvest TDS** and **BUTMIR d.o.o.**. Table below shows some details about these companies.

Table 4: Objects of research

ENERGOINVEST DD	One of the most successful and well-respected engineering company with dominant export orientation with the scope of activities in the fields of design and realization of complex plants in the country and abroad.
ENERGOINVEST SUE	Business partner of sevreal European companies such as SONNENSCHEIN (now EXIDE GmbH), BENNING, EATON/POWERWARE, FG WILSON, doing business in system engineering what includes complete project on turn-key basis.
ENERGOINVEST TDS	Privatised in 2003. The product range of ENERGOINVEST TDS includes commonly products and services such as transmission line powers, telecommunication towers, hot – dip galvanizing and steel treatment. TDS is present on market from all over the world. We will mention here Croatia, Kosovo, Monetnegro, Iraq, Indonesia etc.
BUTMIR D.O.O	Founded in the year 1990 as a private company. The basic activity of "BUTMIR" is making blue prints (i.e. planning of buildings etc.), construction work and engineering. "BUTMIR" d.o.o. has a very good cooperation with many domestic and foreign suppliers of building materials and equipment and quite naturally, with many certified laboratories and institutions in the realm of construction work.

Source: Done by author

4. SEARCH RESULTS AND RECOMMENDATIONS

Strategy. Two companies follow focus strategy, one cost leadership strategy and one company both strategies. No company follows product differentiation strategy. Our recommendation to companies is to work on this strategy because on EU market they will have to offer some new products.

Structure. One company applies combination of SBU model and matrix model of organization, two companies applies functional model and one company applies combination of functional and matrix model.

Systems. All four companies have installed computer based information system. One company has established integrated management system of quality, two companies have ISO 9000 and one company does not have quality management system. Two companies have complete control system two companies do not have. One company does not apply marketing control and one company does not apply strategic control. Since in EU business is actual TQM model for quality management our recommendation for all companies is to work on establishing this model. Strategic and marketing control is necessary because only marketing oriented company will be important partner on EU market. **Also, existence of quality management system means having clearly defined shared values.**

Style. One company follows System 2, two companies follow System 3 and one company follow combination of System 3 and System 4 what means that adopted styles are completely based on science method and leadership style is more democratic then autocratic.

Staff. No company has clearly defined HRM policy. The model for recruiting new employees is closed to five – gold grading system in all companies but not completely and officially defined. Only with clearly defined HRM policy companies are able to respond to challenges in international business. Otherwise it will be serious consequences. **Clearly defined HRM policy means doing on improvement of all necessary skills of employees.**

As we mentioned above process of EU integrations is slow so BH companies have enough time for changes mentioned above. With that changes BH companies will be serious partner in EU business and to EU companies.

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HOW DIFFERS OUTSOURCING OF CORE AND SUPPORTIVE ACTIVITIES IN SLOVENIAN SMEs

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Abstract

Companies are facing increasing and faster changes on the market, including globalization, shortening of life cycles, complexity of products, intensive technological development. Achieving and maintaining competitiveness can be done with different strategies and tools. One of them is also outsourcing. Outsourcing is widespread throughout the world and represents a commonly accepted business practice. An important feature of outsourcing is that it is determined by several characteristics at the same time. Since outsourcing is a multidimensional phenomenon, we examined it's most important and distinctive dimensions, including share of outsourcing particular activity, duration of the outsourcing contract, and number, size and location of outsourcing providers. For the purpose of research we have examined which activities are companies outsourcing and divide them on core and supportive activities. On this ground we studied differences in particular characteristics between those two groups of activities. The paper is based on empirical study of 154 Slovenian SMEs concluded in 2008. Its findings are presented in the paper.

JEL classification: M11, M21

Keywords: outsourcing, activities, dimensions, SMEs

1. Introduction

In the paper we are researching outsourcing of particular activities among Slovenian SMEs. While the outsourcing phenomenon is very extensive concept we limit our research on examining its dimensions and characteristics of outsourced activities in the sense of core and supportive activities. In the empirical study we examined thirteen different groups of activities among SMEs in two different industries (manufacturing and services).

2. Methodology and data

The empirical study was performed on Slovenian SMEs. The studied population consisted of small and medium-sized enterprises in two industries – namely, (1) manufacturing (D standard classification) and (2) real estate, renting, and business (K standard classification) in accordance with the standard classification of activities from 2002. The size of the companies was defined by the number of employees; this study included companies with 10 to 249 employees in 2007. The sample (N = 154) comprised 31 percent respondents from the K classification and 69 percent respondents from the D classification. Given the number of employees per company, 21 percent of the companies were medium-sized (50 to 249 employees) and 79 percent were small (10 to 49 employees).

The study is based on outsourcing of particular activities. We predefined thirteen activities, namely purchasing, production, marketing, sales, distribution and transportation, accountancy and finance, administration, human resource management, information technology and information systems, research and development, legal services, after sales services and other services. If a company was outsourcing one (or more) of examined activities it was assumed that the company is involved in outsourcing. The main thesis of the study is that there exist statistically significant differences between outsourcing of core and supportive activities at outsourcing total or part of an activity, at duration of contract and at number, size and location of outsourcing providers.

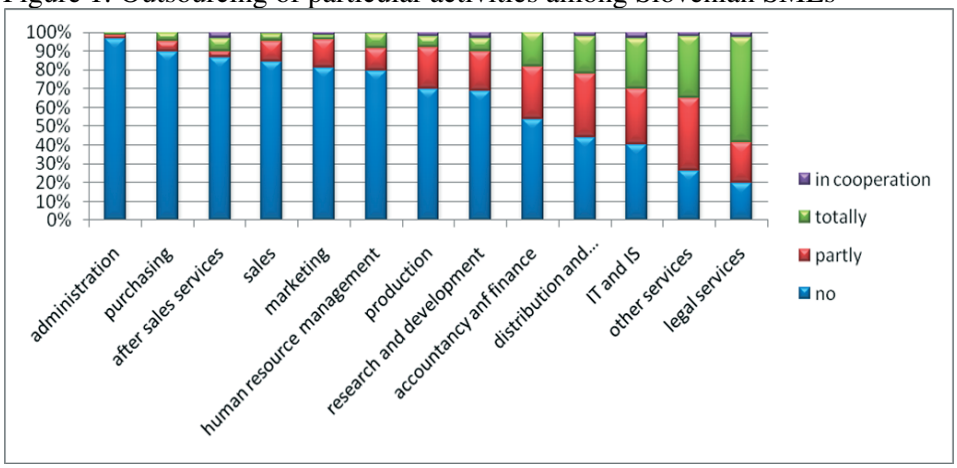
3. The outsourcing phenomena

Outsourcing is wide spread tool in companies of all sizes to achieve different goals, such as flexibility, competitiveness, efficiency and effectiveness as well as innovativeness, while the primary purpose of outsourcing is to contribute to the company's efficiency. For the purpose of the current study, outsourcing is defined broadly as the fundamental decision of a company regarding the external supply of certain products and services. Outsourcing can derive from two aspects (Gilley & Rasheed; 2000). First, the company may decide to outsource certain activities that have thus far been carried out internally. Second, the firm may make a decision regarding the external supply of products that, until now, were neither produced internally nor acquired on the market. Outsourcing represents one of two utmost possibilities to transform inputs into outputs. First one is internal and the second is external transformation from particular company point of view. Among those two possibilities exists a variety of possible combination of them, which also represents some of outsourcing's dimensions.

All respondents in our study outsourced at least one of examined activities. At the same time respondents also indicated what share of particular activity is

outsourced. (total, part or it is provided in cooperation). Figure one shows results of outsourced activities among Slovenian SMEs.

Figure 1: Outsourcing of particular activities among Slovenian SMEs



Source: Author's calculation

The most often outsourced activities are legal and other services, and at least outsourced are administration and purchasing. Other activities are in-between. Additionally, from the figure one could be seen differences in outsourcing particular activities partly, totally and in cooperation.

4. Outsourcing of core and supportive activities

In the literature, classification of outsourcing is frequently in accordance to support and core activities, which are often divided according to Porter's (1985) classification of functions and activities in value chains. In his definition among key activities are input logistics, operations, output logistics, marketing and sale, and services. However, among supportive activities are procurement, technological development, human resource management, infrastructure, planning, control, organisational structure and development of organisational culture.

According to general classification of activities to core and supportive is also outsourcing divided to core and supportive type. Additionally, companies can outsource individual activities, part of an activity, business functions and business processes (Greaver; 1999, 5-7).

Companies can achieve competitive advantages in a dynamic environment where the technological development is fast only on core activities while supportive activities can be outsourced (Quinn; 2000). However, the difficulty exists with the definition of core and supportive activities. Different authors use different approaches at investigating them. Some of them use Porter's

definition, other use companies own classification of core and supportive activities. In our study we asked respondents to define their core and supportive activities. We used construct of three questions, namely (1) the need for experiences and additional trainings to perform an activity, (2) simplicity of changing employees who perform activity and (3) importance of an activity for profitability. With correlation analysis we examined the connection between those three questions for each activity where Cronbach's Alpha was for each activity more than 0.6, what means that the construct is reliable. However, correlation coefficient between those three issues was for each activity high enough (over 0.3). From this construct we form new variables as average value of each construct of three questions. Furthermore, according to the literature (e.g. Espino-Rodriguez & Padron-Robaina; 2005) we used factor analysis to divide activities on core and supportive. Results of factor analysis are in table one.

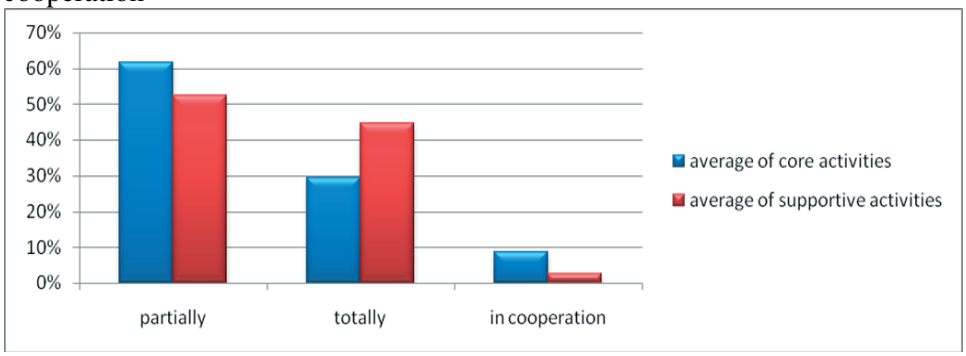
Table 1: Factor analysis of core and supportive activities

Activities	Communalities	Rotated factors			Factors names	Reliability tests
		Factor 1	Factor 2	Factor 3		
Legal services	0.520	**0.880**	0.191	-0.149	Supportive activity	Kaiser-Meyer-Olkin measure of sampling: 0,891 Barttlet's test of sphericity: $\chi 2(78)=990,873$ p=0,000 Cumulative variance explained: 68,897%
Administration	0.728	**0.867**	0.095	0.141	Supportive activity	
Accountancy and finance	0.724	**0.853**	-0.031	-0.001	Supportive activity	
Other services	0.629	**0.772**	0.138	0.121	Supportive activity	
Human resource management	0.648	**0.630**	0.395	0.013	Supportive activity	
IS and IT	0.781	**0.624**	v336	-0.133	Supportive activity	
Distribution and transportation	0.655	**0.611**	0.080	0.518	Supportive activity	
Research and development	0.552	0.276	**0.761**	-0.025	Core activity	
Marketing	0.731	0.430	**0.732**	0.101	Core activity	
Sales	0.703	0.434	**0.713**	0.078	Core activity	
After sales services	0.832	0.507	**0.683**	0.004	Core activity	
Purchasing	0.703	0.134	**0.613**	0.557	Core activity	
Production	0.750	0.089	0.101	**0.856**	Core activity	

Source: Author's calculation

Based on factor analysis among supportive activities are legal services, administration, accountancy and finance, other services, human resource management, information systems and information technology, and distribution and transportation. Activities of factors two and three we were used as core activities Based on average value of the activity production we add it to core activities. Based on that, among core activities are research and development, marketing, sales, after sales services, purchasing and production. Results of our study are similar to other studies in the literature (e.g. Arnold; 2000, Espino-Rodrigues & Padron-Robaina; 2005, Gilley & Rasheed; 2000) and differ from Porter's classification.
For the need of further analysis we used average value of sum of core activities and of supportive activities to compare above mentioned characteristics and dimensions of outsourcing those two groups of activities.
Figure two shows results of analysis between core and supportive activities at outsourcing them totally, partially or in cooperation.

Figure 2: Outsourcing of core and supportive activities totally, partially or in cooperation



Source: Author's calculation

From the figure 2 can be seen that on average SMEs are in a greater share totally outsourcing supportive activities. On the other hand they are outsourcing core activities partially and in cooperation than supportive activities. Although, there are differences in outsourcing core and supportive activities, they are not statistically significant. The results of the t-test show that there are no statistically significant differences between core and supportive activities neither at outsourcing activities totally ($t(11)=-2.070$, $p=0.063$) nor partially ($t(11)=1.017$, $p=0.331$) or in cooperation ($t(11)=1.907$, $p=0.083$). However, there is statistical significance at level $p<0.10$ when outsourcing core and supportive activities totally and in cooperation.

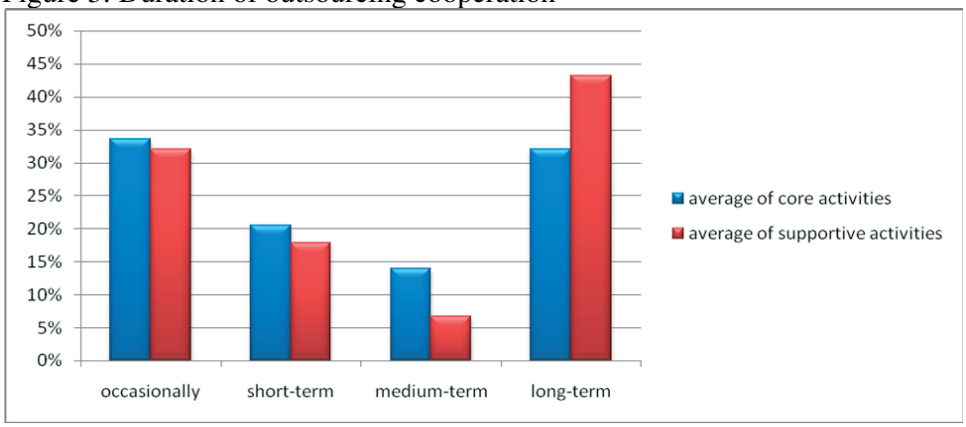
5. Dimensions of outsourcing

Outsourcing is a very complex concept, which has different dimensions and is in practice manifested in several ways, based on different criteria. Mol (2007) argues that the outsourcing differs from other forms of cooperation because it is characterised by greater number of different dimensions. We prepared the overview of most important dimensions that could be found in the literature. As already mentioned before, the outsourcing could be classified by part of activities outsourced on partial, total and in cooperation. Partial outsourcing refers to the outsourcing of part of activities or functions while the part is still performed in-house (Lacity & Hirschheim; 1995, Lacity & Willcocks; 2001, Fill & Visser; 2000, Mylott; 1995, Datar; 2005). Outsourcing in cooperation appears when two or more companies jointly implement activities (Datar; 2005). This form is particularly significant for long-term cooperation in more complex activities, such as research and development and innovation. In the total outsourcing the entire activity is carried out outside the company (Datar; 2005).

Depending on the country in which the outsourcing provider is located outsourcing is divided on domestic, international and global outsourcing, and outsourcing in the neighbour countries. Domestic outsourcing means acquiring services or products from outsourcing provider who is in the same country as a customer, while the international mean that the outsourcing provider is in a country other than the contracting authority (Brown & Wilson; 2005, Datar; 2005). Global outsourcing represents the extension of international outsourcing and means acquiring services or products from a broader, global area (Datar; 2005) or from several locations around the world (Brown & Wilson; 2005). During the time outsourcing was used in different areas of the company and also at various levels of management. On this basis we distinguish outsourcing of products and outsourcing of services, as well as the traditional, strategic, transformational type of outsourcing and one of the newest types is multi-sourcing. The traditional type of outsourcing represents outsourcing of routine activities with the primary purpose to reduce costs while strategic and transformational outsourcing's basic purposes are to achieve flexibility, competitive advantage and overall performance of a company. The strategic type of outsourcing is based on a long-term cooperation between companies that may be developed in a partnership (Greaver; 1999, Brown & Wilson; 2005). Transformational type is also used to redefine the company (Brown & Wilson; 2005). Multi-sourcing is relatively new type of outsourcing where the company acquire products and / or services from multiple outsourcing providers (Datar; 2005) and from inside the company (Cohen & Young; 2006) at the same time.

For the purpose of our study we select following dimensions of outsourcing: duration of outsourcing contracts, number, size and location of outsourcing providers.
According to the literature companies outsource supportive activities long-term, and core short-term. The reason for this is that the supportive activities are less important but still necessary for company's functioning. Since supportive activities are not a source of competitive advantage it is crucial to ensure their undisturbed implementation at appropriate level of quality and costs. In contrast, core activities contribute to achievement of competitive advantage and are therefore much more important for the company. Therefore, it is important that they are implemented properly, which is easier to provide in short-term contracts that are more flexible and can be quickly modified and updated. In our study we examined differences between core and supportive activities in duration of the outsourcing cooperation. The duration of cooperation was divided on occasional, short-term, medium-term and long-term. Figure three provides the results of analysing duration of outsourcing cooperation. Companies are outsourcing long-term supportive activities more than core activities. However, core activities are in a greater share outsourced occasionally, short-term and medium-term than supportive activities.

Figure 3: Duration of outsourcing cooperation

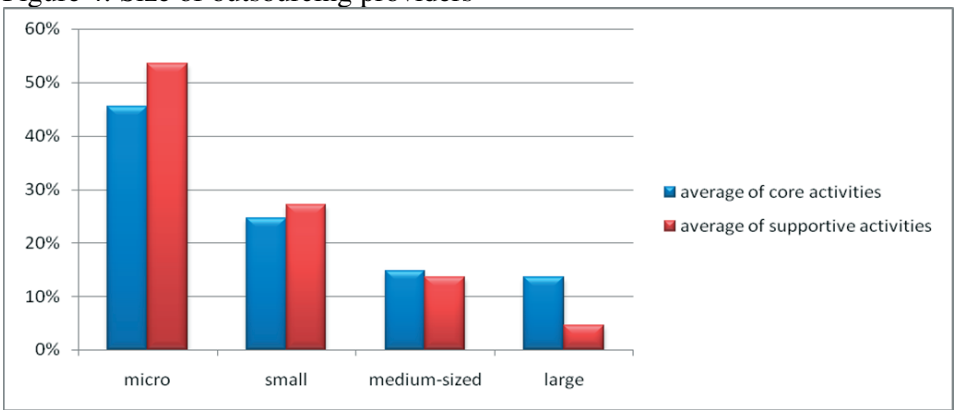


Source: Author's calculation

Figure three shows that there are differences between outsourcing core and supportive activities, but there are no statistically significant differences between outsourcing them occasionally ($t(11)=0.187$, $p=0.855$), short-term ($t(11)=0.495$, $p=0.630$), medium-term ($t(11)=2.006$, $p=0.085$) and long-term ($t(11)=-1.340$, $p=0.207$). However, at $p<0.10$ there is statistical significance between core and supportive activities at medium-term outsourcing.

In general, companies are cooperating with other companies of all sizes. However, small companies are special, while they are mostly cooperating with smaller companies or companies with the same size. In our study a number of outsourcing providers was divided in four groups, namely micro, small, medium-sized and large companies.

Figure 4: Size of outsourcing providers

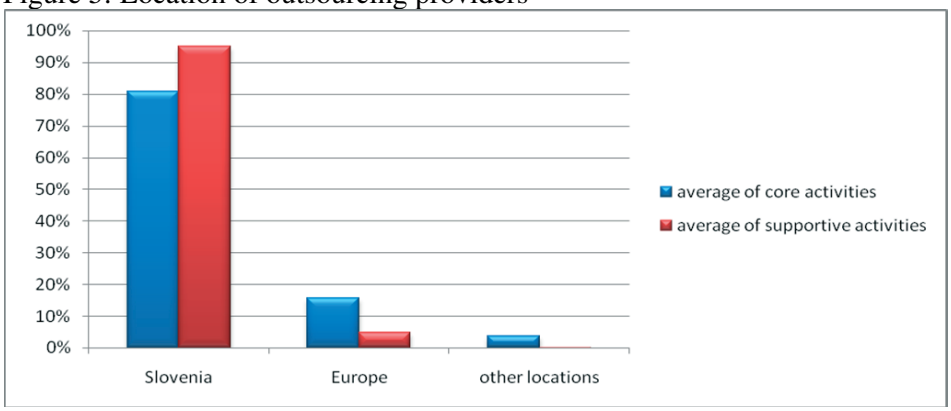


Source: Author's calculation

Differences between outsourcing core and supportive activities are not big. Slovenian SMEs mostly outsource activities to micro and small companies and much less to medium-sized and large companies. However, there are no statistically significant differences between outsourcing core and supportive activities to micro ($t(11)=-0.803$, $p=0.439$), small ($t(11)=-0.520$, $p=0.613$), medium-sized ($t(11)=0.183$, $p=0.858$) and large companies ($t(11)=1.734$, $p=0.111$).

Also locations of outsourcing providers could be all over the world. However, SMEs are mostly cooperating with companies from local environment and are rarely searching for providers from foreign countries. In the study we examined cooperation with companies from Slovenia, Europe and other locations. The results are provided in figure five. It could be seen that companies are outsourcing supportive activities in a greater share to Slovenian companies than core activities, and in opposition are in a greater share outsourcing core activities to companies from Europe and other parts of the world than supportive activities.

Figure 5: Location of outsourcing providers

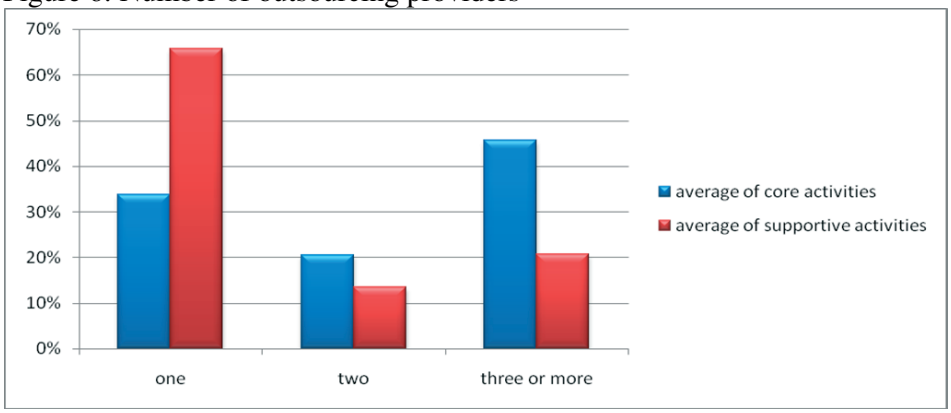


Source: Author's calculation

The result of t-test shows that there are statistically significant differences between outsourcing core and supportive activities when outsourcing to providers in Slovenia ($t(11)=-3.848$, $p=0.003$), Europe ($t(11)=2.655$, $p=0.022$) and other locations in the world ($t(11)=2.686$, $p=0.021$). Although there are significant differences in location of outsourcing providers between outsourcing core and supportive activities are SMEs mostly outsourcing activities to companies in local environment and much less to companies in foreign countries.

The last dimension examined in the study was a number of outsourcing providers. In the study we used three different categories, namely one, two and three or more outsourcing providers for particular activity. Results of analysing a number of outsourcing providers for average of core and supportive activities is provided in figure six.

Figure 6: Number of outsourcing providers



Source: Author's calculation

From the figure six could be seen that companies have a larger share of one provider for outsourcing supportive activities than core. And on the contrary, they have a larger share of two or more providers for core activities than supportive. It is consistent result with other studies while core activities are more important to companies than supportive. Therefore, it is safer to have more providers for one crucial activity. There are also statistically significant differences between outsourcing supportive and core activities to one ($t(11)=-2.366$, $p=0.037$) and three or more ($t(11)=2.058$, $p=0.064$) outsourcing providers at level $p<0.10$, while there is no statistical significance at having two ($t(11)=1.342$, $p=0.207$) outsourcing providers.

6. Conclusions

In the paper we have studied differences in selected dimensions among outsourcing of core and supportive activities in Slovenian SMEs. We can conclude that Slovenian SMEs are largely outsourcing activities partially and totally and much less in cooperation. However, comparison between outsourcing core and supportive activities shows that on average core activities are outsourced partially and in cooperation in the greater part than supportive activities which are largely totally outsourced. Such results are expected for several reasons. First, performing activities in cooperation with providers is the most demanding form of outsourcing, because it is associated with the greatest need of involvement of companies, and therefore it was expected that there will be less outsourcing in cooperation. Additionally, this form is more suitable for more risky activities because of unspecified or poorly specified results, such as are at research and development. Second, the partial outsourcing, which aims to complement company's internal resources, requires less engagement of a company, but still more than total outsourcing, while it still demands coordination with the outsourcing provider. Third, in general, the outsourcing is mainly intended to routine activities, which are simple and other specialist provide them more efficiently, faster or with better quality and at the same time do not require large investments for their development, which are all characteristics of supportive activities which are mainly totally outsourced.

While the outsourcing is a multidimensional phenomena, important are also other dimensions or characteristics. We studied the most essential among them – duration of outsourcing contract and size, number and location of outsourcing providers. Slovenian SMEs are mostly outsourcing their activities to micro and small companies. This is the consequence of negotiation power dependent of the size of a company. Remarkable is the result that SMEs are outsourcing core activities more to the large companies than supportive, while the last one are less important. Large companies have more accumulated knowledge and other resources than small companies, and offer access to new knowledge and faster

development of their key business areas, which enables to achieve competitive advantages. For the same reason, the companies outsource core activities more often to two or more outsourcing providers than supportive activities. With a greater number of outsourcing providers for one core activity companies ensure the undisturbed implementation of these activities and at the same time increasing the competitiveness between providers contributes to the quality of provided activities.

Also, the duration of outsourcing varies between supportive and core activities. Long-term are mostly outsourced supportive activities, while companies mostly outsource core activities occasionally, short- and medium-term. This is also the result of significance that the core activities have for the company compared to supportive. The implementation of core activities is much more dynamic and is also quickly changing because of necessity for development to maintain competitive advantage. The main weakness of outsourcing in Slovenian SMEs is that they have most of outsourcing providers from Slovenia. This finding, however, coincides with a low degree of internationalization of Slovenian SMEs and has a negative impact on increasing their competitiveness and innovation, which are in Slovenia still at relatively low level. Based on above discussed common features of relationships with outsourcing providers can be concluded that the outsourcing of core activities has quite different characteristics than the outsourcing of supportive activities which requires further studies that will go under overall characteristics and focus on particular dimensions and examine them more detail.

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THE EX-ANTE USE OF PLANNED REVENUE IN A SALES & OPERATIONS PLANNING (S&OP) SYSTEM, FOR MORE TIMELY AND EFFECTIVE DECISION MAKING, BY SENIOR MANAGERS, IN MULTI-NATIONAL ENVIRONMENTS.

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Abstract

With supply chains continuing to get more complex, companies struggle on a day to day basis when making critically important decisions about how to positively influence the future performance of their businesses. In particular, attempting to figure out what products to make, when to make them, how much to keep in stock and where to stock them, leave Supply Chain practitioners with the constant dilemma of balancing the risk of running short of stock and therefore impacting Sales, while on the other hand trying to prevent having too much capital tied up in inventory, with the risk of write-offs and obsolescence. Sales & Operations Planning (S&OP) has proven to be a popular and effective process for bringing control and a level of predictability to the product planning challenges of many companies. With the multi-site and global nature of Multi-Nationals, a process that attempts to have all the critical functions operating off the same plan is particularly valuable and is reflected by the greater deployment of S&OP processes in this sector. With the key to planning being about anticipating the future, any good S&OP process will focus on enabling timely and effective decisions to be made, when faced with a number of potential scenarios. This paper proposes a practical Closed Loop System to enhance the performance of S&OP processes. The System uses an ex-ante (predictive) view of the critical business Key Performance Indicator (KPI) of Revenue as the catalyst to ensure that decisions that need to be made are surfaced in a timely fashion. With a complete system in place, covering process, tools and behaviours, senior managers have the opportunity to make decisions, while understanding the full potential impact across the business.

JEL classification: D78, D81

Keywords: supply chains, decisions making, S&OP processes

Introduction

For most companies, one of the greatest challenges is to be able to predict how the sales of it's products or services are going to perform in the future. This becomes particularly complex for large global companies, with multiple design, manufacturing, distribution and sales sites. The business planning exercise can consume a lot of time and energy in attempting to gather intelligence across the company, that can be combined with the various output reports from IT systems, in order to come up with the latest plan. In practice of course, this plan is outdated as soon as it is produced and quite often the quality of the result does not justify the effort to create it. In such situations, senior executives and middle managers across the company will tend to rely on their own knowledge and experience to make the best possible prediction, from their own perspective, ignoring the elaborate business plan that gets delivered periodically, typically monthly.

For large multi-national enterprises, companies invest millions of dollars on Enterprise Resource Planning (ERP) systems as well as Advanced Planning Systems (APS), in order to try and get efficiency in their business and in addition, hope to be able to extract the data they need in a timely fashion to support their critical planning decisions (Singh, 2002). However, the reality, as highlighted by Holsapple et al. (2005) is that such systems tend to concentrate on their transactional and record-keeping aspects, rather than on their decision-support capabilities. Therefore, while companies may achieve returns with respect to efficiency gains, there remains a gap in the availability of information to increase their knowledge for effective decision making. This gap is depicted by Delfmann & Remmert (2000, p9) and repeated below in Figure 1.

To address this gap, one might assume that the logical place to research is the area of Decision Support Systems (DSS). This is an area that is certainly well developed, having been a focus for researchers since the late 1950s / early 1960s (Carlsson & Turban, 2002). However, as late as 2002, Carlsson & Turban made the following assertion: "*Most of the challenges of the DSS, as we knew it, are still valid. For example, complex and integrated decision-making is still done semi- or completely manually. Decision automation is spreading among front-line employees and in middle management, but not to the top-level complex decisions*".

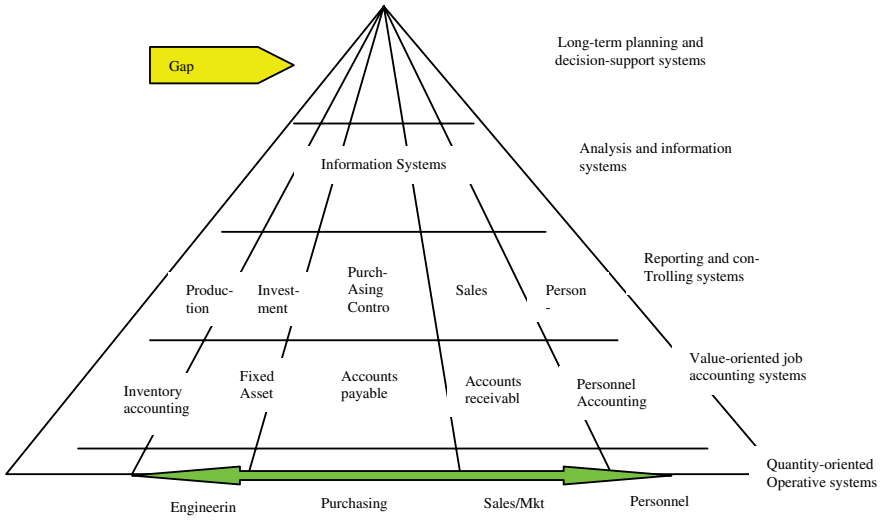

Figure 1:- Delfmann & Remmert, 2000, p9 (Figure 3: Integrated information systems)

One process that has delivered great advances for companies in providing them with the opportunity to make decisions to positively influence their future performance, is the Sales & Operations Planning (S&OP) process. This is a process that is focused at linking the strategic and operational planning of the business. Therefore it operates in the 'gap' area identified by Delfmann et al., (2002) as shown in figure 1. It is beyond the scope of this paper to describe this process in detail and the reader is referred to Sheldon (2006), Lapide (2004, 2006), Brander & Fischer (1998). However, the process offers some important aspects that are worth noting:

- Integrated planning across all functions and in particular Operations, Sales & Marketing.
- Acknowledges the behavioural changes required to make the process work.
- Sets an expectation for the organization to plan off one set of numbers.
- Brings the right level of people together such that decisions can be made.

These concepts will be explored further in the next section.

With all the great tools that are available and with integrated processes like S&OP well established, what opportunities are left to improve the decision making to ensure better performance of the future plans ?

This paper explores the hypotheses that with greater exploitation of the critical business Key Performance Indicator (KPI) of Revenue within a closed loop S&OP system, then decisions that otherwise may not even be visible can be surfaced which in turn allow decisions to be made in a timely fashion, that can have a direct impact on achieving a predictable revenue performance.

The Importance of Revenue in S&OP

"*Stated in the simplest terms, the S&OP is a monthly planning cycle where plans for both customer expectations and internal operations are reviewed for accuracy, process accountability, lessons learned, and future risk management."*

Sheldon (2006)

One of the significant elements of Sheldon's practical definition of S&OP is what he refers to as "future risk management". The S&OP process attempts to take a future look at the customer demand and the associated supply response to that demand. It looks at the risks associated with the accuracy of the demand and the risks associated with the ability of the supply chain to respond to the planned demand. In assessing these risks it supports running scenarios to test various options and advocates a cross functional decision process to conclude on the best option to plan off. The cross functional team who ultimately make the decisions are designed to be the top managers/executives at that particular division where the S&OP is being focused. For example, this could be the management team associated with the subsidiary of a multi-national, a team of Vice-Presidents for a Regional S&OP (eg:- Europe or US) or a corporate Executive team for a Global S&OP process. Within that team the most critical functions are sales, marketing, operations and finance (Sheldon, 2006). It is well documented that one of the big challenges for S&OP is the engagement of the sales & marketing professionals (Lapide 2006, Brander & Fischer 1998). Without their full participation, S&OP can be viewed as an operations process. For many companies, achieving this engagement requires a culture change in the organization (Brander & Fischer, 1998).

In assessing "future risk" it is most important to get a good understanding of the demand plan because this will ultimately drive the decisions that get made in trying to drive the supply response to the demand. There are many inputs to be considered when building a demand plan and Figure 2 depicts those as defined by Class A MRP (Sheldon, 2006). The common KPI that is relevant to each of these inputs is the Revenue KPI:

- Business Plans – will have a prediction, typically annually, on how much revenue (sales) the company expects to make in the financial year that the plan is focused on.
- Marketing Plans – will have a forecast of how much revenue will come from new products, emerging markets, campaigns etc.
- Sales Plans – will have a forecast of what revenue is expected to come from the various geographies being focused on.
- History – will show the actual sales that have been achieved over a defined historical period.

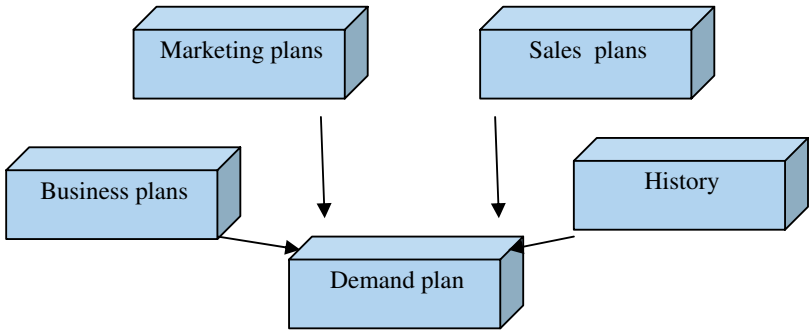

Figure 2: Demand Plan Inputs (Sheldon, 2006)

Once the decisions have been made around the demand plan scenarios, the demand plan then becomes the driver for the supply plan. This in turn drives decisions around capacity, inventory, sourcing etc. Therefore an overall depiction of what is being attempted by the S&OP process is a balancing of demand and supply but made in a collaborative fashion across the functions, with particular emphasis on sales, marketing, operations & finance. This is shown in figure 3.

With the demand plan driving the supply plan and with revenue being the essential element of the demand plan, there is opportunity being lost in the S&OP decision processes by not leveraging the use of revenue more effectively. Revenue is the language that sales and marketing people use (Lapide, 2006).

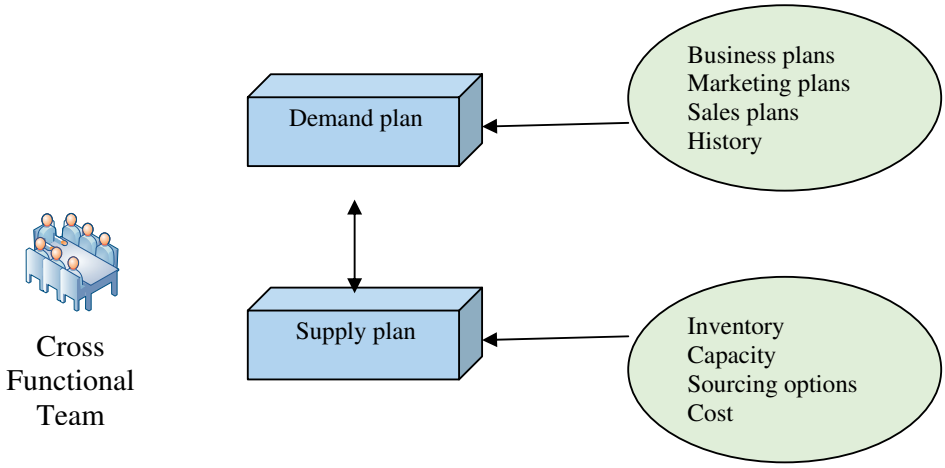

Figure 3:- Demand / Supply balancing in S&OP

In addition, within multi-nationals, when a prediction is given of revenue in the annual business plan, every effort is given to try to meet that prediction. With this understanding, one of the most effective ways to ensure engagement and active participation of senior sales and marketing professionals, in the decision processes around S&OP, is to be able to frame clearly for them how the plans that are being deployed will impact on the predictability of their commitment in the business plan. To do this, a *closed loop system* is required, instead of a linear demand/supply balancing process and such a system is proposed in the next section.

The Ex-Ante Closed Loop S&OP System

The concept of a *system* implies that to be effective the process, tools and behaviours have to be considered when designing the process. This concept is advocated by Oliver Wight consultants (2003) and is shown in figure 4 below:

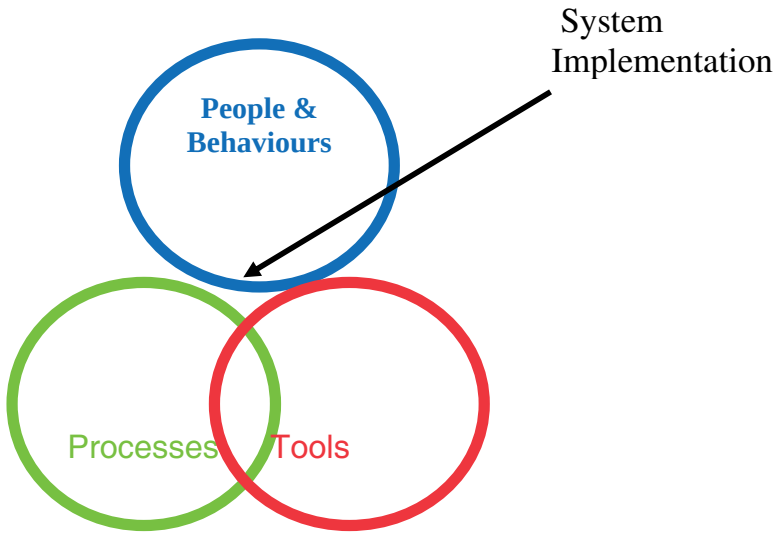

Figure 4:- Successful S&OP System Implementation

It is the behavior aspect in particular where there is opportunity to leverage more timely and effective decisions from senior sales and marketing personnel, by leveraging the revenue KPI. In order to embrace this opportunity, the system needs to be designed such that it creates a *closed loop*, which ties everyone in the process firmly into the commitment of operating off one set of numbers. The closed loop system is depicted in figure 5.

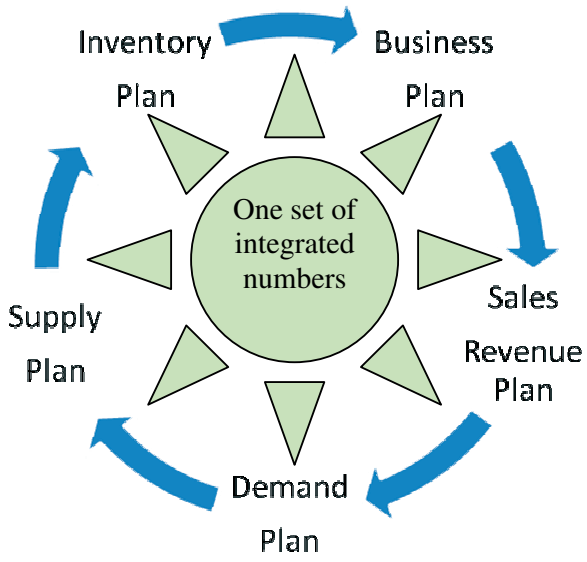

Figure 5:- Closed Loop System

The elements of this closed loop system can be defined as follows:

- Business Plan:- The sales revenue that was committed in the plan for the particular fiscal year.
- Revenue:- The current sales that are forecasted from the sales organization. Typically a "top down" product family level forecast.
- Demand:- The customer demand plan that is built up from the individual code level.
- Supply:- The culmination of all the products planned to be delivered from the various manufacturing sites - both internal and sub-contract sites.
- Inventory:- The total finished goods inventory that is in place across all locations.

The closed loop aspect of the system provides a mechanism for forcing decisions to be made. This becomes very powerful in addressing the reality, that while senior managers have more data at their disposal today than they ever had, it does not seem to have helped them in making fast and reliable decisions. Shapiro (2001, p521) put forward the following conundrum: "*Is the reluctance and inability of managers to engage in rational decision making diminishing or persisting as they are provided with increasingly flexible and rapid access to comprehensive data pertinent to their decisions?*". This author's experience of 20 years plus, in SCM in large Global companies would suggest the answer is

that the *reluctance* and *inability* is at best persisting and there is evidence of it digressing. Therefore, when developing decision support models or systems, an important characteristic of the system has to be to force decisions to be made.

The system works off a fundamental assumption that a given company is driven by it's *Business Plan* commitments. Whatever the senior management have determined to be their revenue plan for the future becomes a strong driver across the company and the entire workforce is expected to align behind this. With this being the case, then this should be compared against the Sales Revenue forecast and in turn the product level *Demand* plan needs to be in line with the revenue plan. Recognising that the Sales revenue is likely to be a financial target as opposed to a product by product detailed plan, it is important to be able to convert the demand plan such that it can be compared in monetary terms with the Sales plan. To achieve this, the demand plan will need to be valued at Average Selling Price (ASP). Once the demand plan has been aligned with the sales revenue plan, then the *Supply* plan needs to be tested to ensure it is aligned to the demand plan. Of course the total supply plan will be made up of the MRP (Materials Resource Plan) plans from the various manufacturing sites as well as consumption of some of the existing inventory. In order to test alignment, the demand plan can be converted to standard manufacturing cost levels for financial comparison or to be more accurate, then it can be compared in terms of the quantity of each part. Once the supply plan has been confirmed to be aligned to the demand plan, then the finished good inventory needs to get projected out in time and compared against the financial inventory target for the company. If these are not aligned, then the loop gets closed by looking at how the revenue plan could get adjusted, in order to ensure sufficient finished goods are consumed to reach the inventory target. Alternatively, to close the loop, there may be a recognition and acceptance at senior management that the inventory target should be changed in the business plan.

The key to the closed loop system rests with the up front buyin from all parties to operate to one set of numbers. With revenue being a critical performance indicator for the company some key decision scenarios come to light for the sales and marketing leaders that otherwise may not even be visible. Some of these are listed here as examples:

- If Sales Forecast is not aligned with the Business Plan then either the Sales plan gets adjusted to come in line or there is a re-commitment required on the business plan. Either adjustment can only occur with clear assumptions that the cross functional team support.
- If the bottoms up Demand Plan does not align to the Sales revenue plan then one of them has to be adjusted to come in line, which in turn could have implications to the Business Plan, in order to maintain the closed loop.

- When the Supply Plan is drafted factoring in existing inventory, if the projected inventory is not aligned to what was committed in the Business Plan, then the Demand Plan has to be revisited to see what can be done to change the sales revenue plan to consume more inventory to bring the projection in line. Alternatively, the business plan commitment has to be revisited.

Without the emphasis on having a closed loop system, with revenue as the KPI that facilitates this, then the sales and marketing people do not have to engage to the level required to force critical decisions to be made. They can leave the business plan commitment as it is and provide as much intelligence as possible to help build the demand plan, but do not have to make the hard decisions and with no accountability for inventory, will typically over forecast, to ensure their revenue plan is not impacted by backorders.

Survey Results from Multinationals

In a recent survey of a group of multi-national companies (see note at end for background to survey) some interesting results were obtained in support of the hypotheses put forward in this paper. It is the subject of a separate paper to cover the survey results in detail. However, some graphs are shown in Figure 6 for reference.

It is clear that all of these multi-nationals engage in a process of generating an annual business plan. In addition there was strong acknowledgement that is was important to meet the targets as set out in their business plans. Over 80% of the responses acknowledged that revenue was at least very important to them. This is no great surprise when clearly any multi-national company will want to be tracking how their top line sales are performing. What was more interesting however, was that while each of the companies surveyed had a Sales & Operations Planning process in place, when asked to list the KPIs that they use in their S&OP process, the Revenue KPI did not appear, as seen in Figure 6. It shows that the companies are using the S&OP process to drive focus and improvement in a number of critical areas, but are not leveraging a KPI that is acknowledged as being one that is very important, if not critical, for the business.

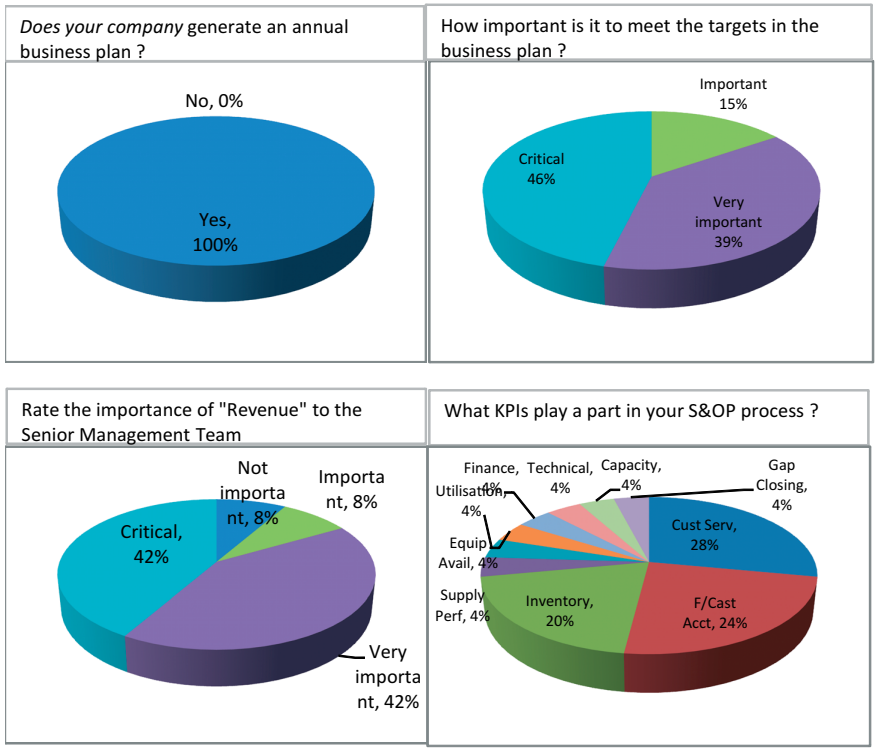

Figure 6: Survey response from group of 13 multi-national companies

Summary

In this paper, an argument has been put forward for how to improve the decision processes within a S&OP process. This is achieved by creating a closed loop system and leveraging the revenue KPI to force the engagement of the sales and marketing professionals and drive decisions to be made that can influence a predictable future performance.

The unique enhancements to the traditional and well documented S&OP process are:

1. Tie the revenue plan back to the business plan forcing reconciliation.
2. Leverage the commitment to one set of numbers by creating a closed loop mechanism that starts and finishes with the business plan.

Note on Survey

With support from Oliver Wight & Associates, a survey was circulated at the European annual Proven Path Club (PPC). This is a forum facilitated by the Oliver Wight consultants where their S&OP customers can come and learn from other company implementations. The survey was conducted in November 2008.

Thirteen survey responses were received and follow on interviews are currently being undertaken to drive the next level of data and ensure the context of responses is correctly interpreted.

It is the subject of a separate paper to present in detail the findings of the survey. However, further detail can be obtained from Jerry.Shanahan@ul.ie.

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THE THEORY OF THE BUSINESS, FALSIFICATION AND AVOIDING MANAGERIAL UNAWARENESS

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Abstract:

Organizational strategy is based, too often implicitly, on a theory about the organization's environment. Although the falsity of this theory puts the entire strategy at risk, managers are usually unaware of both the theory and the peril. The issue of theory falsification is mostly associated with the philosopher Karl Popper, but unfortunately the management literature identifies with his rival, Thomas Kuhn. The wish to apply Popper's doctrine in the managerial context faces another difficulty – the formation of the theory. Whilst Popper sketches a hierarchical structure of a theoretic system, managers hold a one-tier theory-of-action that harms falsification. An adaptation of the Popperian method for the managerial context is suggested and examined through Action Research. The findings indicate that a careful extraction of an upper-level theory from the theory-of-action and its testing through derivable scenarios enables early falsification, namely before the actions are taken.

JEL classification: D81, L24, M21, M40

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The Practical Problem: Managerial Unawareness

Strategy, whether planned or emergent, rests upon a theory; not in the meaning of scholarly theories *about* strategy but rather the strategy-maker's worldview that underlies the strategy. Drucker (1995) named it "theory of the firm"; Mintzberg (1987/a) called it "strategy as perspective", and the school represented by e.g. Huff, Huff & Barr (2000) links it directly to the strategist's cognitive structure. The theory demarcates the business environment, nominates the driving forces within it and determines the interrelationships among them.
Problems arise when the theory is false. Sometimes it is false from the beginning; in other cases it fails to follow changes in the environment and becomes obsolete. The peril is that managers are unaware of the falsity since, most often, they have not explicated their theories; nor have they actively been engaged in testing them. The field of strategy is highly attentive to uncertainty, but much less to the risk of unawareness of theory's falsity.

Examples for such a failure are plenty, and the two that are succinctly presented here are nothing but representatives. Grove (1997) describes vividly how Intel (which he headed) encountered a strategic disaster in 1994, as a considered-to-be a frequent glitch during a chip development had been blown up toward an uncontrolled credibility crisis. What came out in retrospect was that the PCs' end-users, who have never been thought of as Intel's direct customers, took the "Intel Inside" campaign too seriously and demanded the chip's replacement – allegedly without technical justification. Intel has not internalized the change in time, Grove concludes his personal experience.
Another example, based on cognitive analysis of secondary sources, is provided by Barr, Stimpert & Huff (1992). They draw the history of two railroads that had shared identical initial conditions but have reached different ends: one company prospered whilst the other faced bankruptcy. The authors point to the sluggishness of the latter to perceive new business factors as the cause of its deterioration.
The management literature pays much attention to uncertainty, which is inevitable in strategic decision making. Uncertainty implies incomplete information, and may vary by severity from lacking the future state of certain factors (Courtney, Kirkland & Vigueri, 1997) to questioning the factors themselves (Dequech, 2000); uncertainty may also result from insufficient knowledge about the relations among those factors (Milliken, 1987). Regardless the level of severity, underlying all the levels is *awareness* as a state of mind; Zack (2001) concludes: "In all cases, the interpretive context of the uncertainty is assumed to be well-defined and meaningful". In contrast the point in our case is *unawareness*: the decision-makers are unaware of the unknown, all the more so their very being in this state. This is the problem we address.

Theoretical Background: Traditions of Theory Validation

The question of the trueness or falsity of a theory lies at the heart of the philosophy of science. Without discounting the contribution of others, the debate during the second half of the 20th century has concentrated around two competing schools: Popper and Kuhn; traces of this debate populate the management literature.

I. Philosophy of Science: Popper vs. Kuhn

Popper (1961), stating in the 1930s, established the stance of Critical Rationalism. Popper is not interested in the theorizing phase, which is subject to personal factors; instead he concentrates on the theory's testing, which in his opinion has to be purely logical. "Testing" means deliberate efforts to falsify the theory (more about it later), which holds as long as this falsification fails. Four Popperian themes are especially remarkable:

1. The identification of the scientific method with deductive logic, in contrast with induction.
2. The activeness of the scientist who should consciously suspect his theory and tries to refute it.
3. The exclusion of the psychological dimension from the science's demarcation; Popper does recognize this dimension but nevertheless denies its systematization (points 1-3 refer to Popper, 1961).
4. The portrayal of the scientist as a problem solver, in accordance with the problem (defined as a deviation from the expected) as a precondition for theorizing (popper, 1994).

Whilst Popper presents a normative theory (an ideology, according to Kuhn's allegation [Kuhn, 1970/b]), Kuhn (1970/a) draws a historical account from which he derives a theory. Kuhn coins the term "normal science" to describe a branch of science that converges around an accepted paradigm, within which the basic assumptions are not challenged. What scientists do, he argues, is solving "puzzles" – a tern that intentionally bears a flavor of fixed, agreed-upon gaming rules; both the unchallenged postulates and the accumulation of solved puzzles indicate an inductive mode. Kuhn (1970/a) sees the scientist's psychological drives and cognitive biases as inseparable factors, not (unlike Popper) something to fight against. He recognizes the social impact that the scientific community has over the individual scientist, who is captured by the prevailing convictions.

Although Kuhn (1970/b) and Popper (1970) criticize each other fervently, their stances are hardly commensurable, at least upon the following dimensions: (a) the essence – a methodology (Popper) vs. a descriptive theory (Kuhn); (b) controllability of the scientific process (which Popper advocates, but Kuhn denies), and (c) the leading theme under which the scientist operates – logical reasoning (Popper) vs. social conventionalism (Kuhn).

II. Reflection in the Management Literature

Kuhn is clearly more favored in the management literature; many of his concepts are reflected vicariously on top of direct references (e.g. Huff, Huff & Barr, 2000; Prahalad & bettis, 1986). Kuhnian reflections are fourfold:

1. Equating strategy with the notion of paradigm (Huff et al, 2000; Prahalad & bettis, 1986).
2. The social dimension of organizational knowledge, which is analogous to the scientific community (Cook & Brown, 1999; Durand, Mounoud & Ramanantsoa, 1996; Sandelands & Stablein, 1987; Von Krogh, Roos & Slocum, 1994; Weick, 1996).

3. The centrality of induction in managerial inference (Weick, 1995) as well as the saliency of experience (Levinthal & March, 1993; Lyles & Schwenk, 1992) and the significance of intuition (Erat & Von Krogh, 2000).
4. Acknowledgment of the psychological drives and biases that managers act upon (Bazerman, 2006).

It is much harder to trace Popperian ideas in the management literature, let alone named references. Mostly traceable is the central Popperian theme of problem solving, which is echoed first and foremost in Simon (e.g. 1945/1997). Besides, the notion of theory testing through hypotheses is mentioned by Hedberg (1981), although in the context of incomplete learning. Another reflection is the employment of deductive derivation during scenarios generations (Dutton, Fahey & Narayanan, 1983), sometimes in order to compensate for weak inductive ground (March, Sproull & Tamuz, 1996). Alas, the latter is regarded (by organizations) as a second best rather than the preferred alternative.

In summary, the management literature clearly tends to follow the Kuhnian tradition, although Popper's perception of the scientist's motivation as a problem-solver and decision-maker is much closer to the manager's image than Kuhn's "puzzle" concept. On the other hand, the unawareness phenomenon is more explainable upon Kuhn's thesis. We should also remember that both Kuhn's account and the corresponding management literature are descriptive whilst Popper's stance is normative; since we aim at *curing* the unawareness problem, drawing on Popper is self evident.

The Theoretical Problem: The Level of the Tested Theory

Say that one accepts the previous conclusion and wishes to employ the Popperian method in managerial context; is this necessary condition sufficient? The argument below is that the core problem has to do with the type of the theory under test. We first briefly check what a theory is according to Popper and then compare it with the theory held by managers.

Popper (1961) defines a theory as a universal law ("*all* A's are B's"), namely a statement that is true anytime and anywhere. Such a statement is by definition unverifiable, since no empirical test can encompass the entire spectrum. Therefore the scientist can only try to falsify the theory, and that s/he does by logically deriving *singular* statements ("*some* A's are not B's") that are empirically verifiable. Once the derived statement is verified, the hosting theory is falsified. This is a syllogistic structure: a theory as the major premise, initial conditions as the minor premise, and the expected result to be tested.

Such a structure is the building block of a *theoretical system*, which may contain several levels of statements that are more and more singular down the derivation road. Still the same principle holds, namely that each statement does not stand for itself but serves to falsify its progenitor. Hence a theory may be considered universal even if it relates to an individual entity.

Managers have what Argyris & Schon (1978) call "theory of action", that from a cognitive perspective consists of schemas (instead of statements). A schema reads: "in situation S, if you want to achieve consequence Q, under assumptions a…n, do A" (p. 10). This structure parallels to what Popper calls the minor premise and the result; what is missing is the major premise, or the upper-level theory – although it tacitly exists beneath the schema, as Argyris & Schon (1978) indicate. Whilst Argyris & Schon (1978) further divide the theory-of-action into espoused theory on the one hand and theory-in-use on the other, Weick (1995) discounts the difference as both mutually affect the theorizer's perception.

Schon (1983) explains why deductive falsification is inappropriate in practice; the practitioner, unlike the Popperian scientist whose aim is problem solving, struggles first of all to *set* the problem. The steps of setting and solving the problem are interwoven and project on one another, since the problem is deliberately set in a solvable manner. The practitioner, Schon argues, is interested in the result rather than the reason; therefore, as long as the result satisfies the quest for further knowledge ceases. It is the typical dilemma between scientific rigor and practical relevance, where the latter prevails.

Still, as Hedberg (1981) states, the action is the hypothesis upon which the theory is tested; if so, is Popper's request satisfied? The answer is no, because being the "theory of action" both the highest and the lowest level of the theory (i.e. the only one) harms the benefits of falsification (if achieved) on two dimensions: time and quality. Here is why:

1. Falsification may occur fatally too late, especially when the action in point is of strategic significance (the aforementioned Barr et al [1992] is an example).
2. The refuted "hypothesis" has no ground to reflect upon; in other words, the rejection of the hypothesis (i.e. the action) leaves the experimenter in the dark.
3. Besides, since the actor (i.e. the manager) is under test not less than the action, powerful biases – especially the attribution bias (Nisbett & Ross, 1980) – contaminate the derived conclusions.

Few remedies have been suggested in order to face the problem of latent falsity of managerial theories, but none of them meets all the above challenges. Simons' (1995) method of strategic control is susceptible to lateness (point no. 1); Peters & Waterman (1982) advocate strategic experiments but leave perils 2 and 3 unattended, and Ben-Israel (1989) exhibits Popperian approach but neglects the second point as he employs theory-free hypotheses.

Hence the root problems are (a) that the theory is tested too far down the derivation chain, without a higher reference, and (b) that the testing method is implicit, "Kuhnian", and loosely controlled. More formally, the two independent variables are (1) the *level of theory* and (2) *methodology awareness*, and the dependent variables are (3) the *time of theory testing* and (4) the *lucidity of the findings* (operationalization follows). Figure 1 presents the variables and their connections.

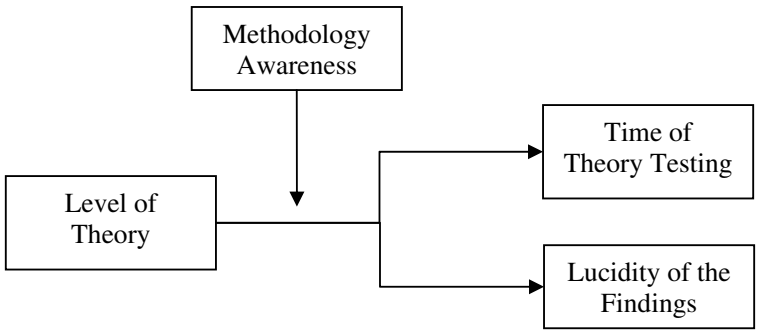

Figure 1. The problem model

The Research Design

Van Aken (2005) distinguishes between descriptive and design science: the former provides theoretical ground upon which the latter establishes *technological rules*; the research addresses both these aims. For one, and from a *critical rationalist* (Mingers, 2004) point of view, we post two questions:

Q1. Does the explication of an upper-level theory expedite falsification based on theory testing?

By *upper-level theory* we mean the theory that underlies the "theory of action", which in accordance with Popper's doctrine should exhibit greater universality than the latter. The quality of *expedition* is defined as "learning before doing", namely that falsification is reached before an action is taken.

Q2. Does the testing of an upper-level theory, upon falsification, yield insights that are more comprehensible than by testing the theory-of-action?

As mentioned above, actions taken by an enterprise evoke a feedback from the environment; however, such a feedback is doomed to vagueness without a grounding reference. Operationally this question is qualitatively measured by the managers' ability to explain *why* something happened (i.e. the cause) beyond explaining *what* happened (the effect).

The design target concerns the methodological aspect and reads as follows:

Q3. How to explicate managerial upper-level theories and how to test them?

This objective considers the theory falsification a conscious objective, an end for itself.

As such, the research exhibits the following characteristics: (a) it deals with managers' latent knowledge, which is hardly accessible indirectly; (b) it concerns design, which in order to be acceptable had better be participative, and (c) it compares a pre- with post-intervention, thus should be longitudinal. Therefore the *Action Research* (AR) method was found the most appropriate to conduct the research. Although originally associated with Habermas' critical view (Johnson & Duberley, 2000), the AR is nowadays strongly recommended for both the critical rationalist perspective (Cunha & Figueiredo, 2002) and information systems design (Baskerville & Wood-Harper, 1998; Lindgren, Henfridsson & Schultze, 2004).

The AR contributes by both solving a practical problem that the participant organization presents and expanding the theoretical knowledge in which the scientific community is interested. The canonical AR (Susman & Evered, 1978) consists of several five-stage iterations; the steps are: (1) diagnosis; (2) action planning; (3) action taking; (4) evaluating and (5) specifying learning. Insights gained in an iteration guide and are applied in the consecutive one until satisfaction is reached by both sides.

In the current research two iterations have been implemented. The first, comprising two organizations, was dedicated to the problem diagnosis and the initial solution design; the second took place in one organization and focused on improving the solution based on the former's lessons.

The Action Research

I. 1st Iteration

The first iteration engaged two separate organizations: one industrial, hereinafter named IND, the other educational (EDU). Intercommunication across the settings was exercised exclusively by the researcher in order to mutually fertilize each organization by the lessons learned in its counterpart.

Problem diagnosis: the problems in both were similar and bore the following characteristics:

- The existence of a single layer of theory, namely theory of action; further, it was a "theory-in-use" (Argyris, 1976/b), thus quite implicit and only partially shared.
- Unawareness of the underlying assumptions and consequently of possible falsity therein (stated differently, basic assumptions have been taken for granted).
- Lack of systematic methodology aimed at validating the strategy but through the feedback from the environment in response to actions taken.
- Poor and late interpretation of the feedback.

Action planning: following the confirmation of the above problem statement we engaged in the solution design. We formally articulated the concepts of *theory* and *hypotheses*, and structured the theory-testing procedure. The essentials were:

- **The theory** (regarded hereinafter as the "upper-level theory" in order to tell it over the theory-of-action), unlike the "do-X-to-get-Y" form, addressed the question: which external forces (emphatically beyond the organization's control) shape or influence our environment and how they interrelate – which we called *the System*. By that the demarcation of the System became the core of the theory, with a good reason: we found this dilemma (where to draw the system's borders) the theory's Achilles heel. The interrelations among the system's components (i.e. direction and ratio of influence) were secondarily important.
- In order to reach, in accordance with Popper, as "universal" laws as possible, one should take a step backward (or upward) and ask: which conditions are necessary to sustain this system? The emanating statement is may be the closest possible approximation toward a scientific theory; so thus far we have a two-tier theoretical system.
- **The hypotheses**: in adherence with Popper's conceptualization (especially concerning astronomy), once a theory is in place and "initial conditions" are determined, a certain outcome is expected. In business terms we get what is known as *scenario*. Since multiple scenarios are derivable from a single theory and for the sake of manageability we would single out those two forces that are independent (within the system), most influential and most uncertain – which we call *primary forces*. Each of the two primary forces is alternately assigned two extreme values, resulting in four mutually exclusive scenarios. After some time and under the real conditions we witness, we can check whether the expected scenario (hypothesis) has materialized and judge the theory accordingly.
- **The procedure**: in order to avoid the lateness of the falsity's discovery one should not wait until a scenario is fully materializes. Instead one had better check periodically some indicators that can differentially foretell one scenario over another. The procedure therefore concerns the conception of proper indicators and their periodical tracking – say, each half a year.

Action taking: the method has been implemented to the letter and in both the settings we have managed, although not easily, to attain quite a "universal law", e.g. "X is never compatible with Y". It was achieved through laborious brainstorming in which we tackled straightaway the upper-level theory – not a good idea, as we would recognize later. In both organizations the scenarios' follow-up (2-4 reviews during approximately two years) refuted the hypothesis and led to a theory revision. As expected, the revision mainly concerned the reframing of the relevant environment, the detection of new driving forces, as well as rephrasing the game rules; for instance, IND has redefined the market (from product to service-oriented) and EDU has re-delimitated the competition arena. Both organizations, to that extent or another, improved their ability to locate and understand changes out in the environment.

Evaluating: here we faced a remarkable variance between the organizations. Whilst EDU has readily absorbed the theory's falsity and was eager to build upon the revised one, IND resisted. They failed to synthesize the process, namely to see the linkage between the rejection of the hypothesis, the falsity of the upper-level theory and especially the consequences on their theory-of-action; in their own words: "although the [logical] conclusion is such-and-such, we do not *feel* that way".

EDU's president, in an attempt to make sense of the variance, attributed the obviousness of the method for them to EDU's scientific background. He was completely satisfied with the method and its implications for his organization.

Nevertheless EDU failed to leverage the early detection ("early" means prior to a negative action-following feedback) toward a strategic change. According to its president he was unable to deliver a sense of urgency due to the "theoreticality" of the problem.

Specifying learning: we hypothesized that for non-scientists (e.g. businesspersons) the leap toward an upper-level theory is counterintuitive and a suspected source of difficulty. Therefore we should bridge this gap via a smoother path from the theory-of-action, with which practitioners indentify, to an upper-level theory. The second iteration applied this insight.

II. 2nd Iteration

One software company (hereinafter: SFT) participated in the second iteration. Its chief executive was briefed about the method, the action research, the previous round and the aim of the current one, to which she agreed.

Problem diagnosis: the same problem as before (iteration 1) was diagnosed and acknowledged. The exclusiveness of learning-by-doing as the theory falsifier was apparent.

Action planning: whilst the targeted upper-level theory and hypotheses remained as is, the major change would be the explication and articulation of the theory-of-action. Once in place we will extract an upper-level theory and continue.

Action taking: we progressed through a gradual process, starting by describing the current strategy. Later the chief executive reviewed several real cases and explained her response to each; on that mixed basis we synthesized the theory-of-action. Next came the question: why is this response appropriate? Why do you assume that this response is correct? Based on her answers we constructed the upper-level theory and went on to extract more universal statements. Finally the hypotheses (in a scenario form) were derived; they have not been rejected yet, as these lines are written.
Evaluating: the chief executive appreciated the clear continuation along the theories hierarchy, and easily grasped how her theory-of-action was a derivative of her upper-level theory. She accepted the rationale of the method and valued its counter-unawareness merit.
Specifying learning: we concluded that by departing from the manager's familiar turf and as long as the theory-of-action is maintained as a reference, the upper-level theory is more intuitively grasped and contextualized.

Discussion and Conclusions

Earlier we have posted three research questions and hereby they are evaluated upon the findings:

Q1. Does the explication of an upper-level theory expedite falsification based on theory testing?

In both IND and EDU the upper-level theory was falsified (required revision) exclusively on the basis of environmental scanning, i.e. prior to action. This quality addresses the extensive interest in the "early warning" concept across the management literature (e.g. Gilad, 2004). Falsification was most often associated with the delimitation of the relevant environment.

Q2. Does the testing of an upper-level theory, upon falsification, yield insights that are more comprehensible than by testing the theory-of-action?

EDU in particular, and IND to a less extent, improved their comprehension and were much more capable of making sense of their environment. Further, all the three participants could specify their questions and focus on concrete indicators. Once indicators have been detected it was quite easy to put them in context.

Q3. How to explicate managerial upper-level theories and how to test them?

The method takes advantage of the managers' (relative) acquaintance with their theory-of-action as a reference from which an upper-level theory is abstracted. Once a theory is constructed we follow popper's concept of "initial conditions" to derive an expectation to be tested, i.e. a hypothesis. The hypothesis, in a business context, converges with the concept of scenario with which the managers are conversant as well. This play between the familiar and the abstract alleviates the acceptance of the method.

In sum, Popper's doctrine enables managers to actively control their strategy-underlying theory, to detect its falsity sooner than by action and to avoid unawareness. In all these tenets it contradicts the Kuhnian image of the manager as portrayed in the management literature. Alas, a critical weakness is that managers, unlike scientists, are results-driven (Schon, 1983) and therefore such a theoretical scrutiny may not attract them. Further, the early awareness may fall victim to the popular proclivity for avoidance (Bazerman & Watkins, 2004; Lyles & Thomas, 1988), as happened in our action research in EDU.

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QUALITY AND ITS ROLE IN GROWTH OF BOSNIAN AND HERZEGOVINIAN ECONOMY

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Abstract

Nowadays in an extremely competitive environment one of the most important issues is efficient management of total business processes which as a result should lead to achieving better financial and development goals and fulfilling customer's wishes. Efficient management turns to be quality management which includes different methods and techniques. Achieving expected quality of the products and services, as well as total business processes in all aspects, is the only way of surviving in this competitive environment.
Framework for the quality implementation in the company is postulates of the different quality concept, such as TQM, Kaizen or Six Sigma. ISO and other certificates are assurance of the product quality. On the other hand, it can be very effective means for entering foreign markets.
Due to importance of mentioned concepts and importance of obtaining certificates, this paper is focused on the methodology of the quality management as well as on experiences from real sector and research results. Main aim of research is to determine practical assumptions for efficient quality management and its role in a growth of economy.

JEL classification: D83, L15, L16

Key words: total business processes, TQM, Kaizen, Six Sigma, ISO, growth of economy

Introduction

Accomplishment of profit aims and desired positioning in market are closely connected with satisfying customer's demands, efficient expenses management, business processes and quality. Conditions of globalized market prove that "egocentric" vision of company is no longer sustainable, i.e. vision of a company as a single part independent from other subjects – competitors, customers, suppliers - which defines manner and results of business. Customers are becoming those who determine what should be produced and which

performances final product or service must have. Acquiring desired quality, quality perceived by customers, becomes even more significant means of acquiring competition advantage and by that advantage accomplishment of series of aims. Thus efficient quality management becomes inevitable part of total management of business processes in a company.

Quality and its expenses

Quality could be defined as: "Sum of all characteristics of the product or service which satisfy expressed or expected needs of customer/client, and as such it is aim of perfect organization and philosophy. According to this philosophy product or service is quality when it satisfies all desires, needs and expectations of customers/clients" (Dumicic; 2004, 47). We identified two understandings of quality term: internal and external. Internal understanding of quality is the one related to perception of management and which is embodied in business procedures that result in accomplishment of "planned" quality. External understanding of quality is the one based on customer perception and is also based upon what customer perceives as quality. Internal and external understanding are inseparable; customer's demands for quality responds to defining and designing of business processes whose aim is acquiring of quality. Defining and redesigning of business processes is related to certain time and money investment. Quality expenses are divided in to two groups: (1) expenses caused by quality introduction and (2) expenses caused by having low quality products. Introductory expenses are related to a series of preparation activities and to activity of implementation and assurance of certain concepts of quality. Non-quality expenses are expenses related to mistake removal, merchandise complains and its return from customers, additional controls and analysis of mistake occurrence. Basically, these expenses could be related to expenses occurring in company, but also to expenses occurring at customers, because of acceptance of product and input of unsatisfactory quality. It is advisable for a company to do the right thing first time and thus prevent occurrence of mistakes and non-quality. Mistake removal and return of merchandises is not only expensive but can also jeopardize relation with customers and seriously harm company image.

Concepts of quality management

In modern conditions of business, series of concepts of quality management have been developed:

1. Based on interpretation (comprisement) of "quality" notion.
2. According to time of occurrence.
3. According to degree of formalization.
4. According to focus and aims of quality.

1. Division of concepts according to interpretation (comprisement) of "quality" notion.

Concepts of quality management went all the way from control of final product, control of services, through control of production processes in all business activities of a company, and finally control of all subjects in a chain of value creation. Concept overcomes narrow notion of control and becomes process of active management and development, re-designing all processes in company with active participation of all employees but also and customers and suppliers. Aim is to achieve all-comprising quality of product and processes. Traditional interpretation of quality which comprised final product only, has been altered by wider interpretation which comprises all business processes.

2. Concepts according to time of occurrence

Division of control to current and additional, which is preventive and corrective, could be applied to the concept of control, which is quality management. In earlier phases of development stress was on both types of control equally. With further development and attempt to achieve aim of "production without mistakes" stress has been placed on a current control and preventive activities. Modern quality management is primarily preventive, and of course it overcomes mere interpretation of control. Aim of additional control is to confirm already set quality standards, and sometimes in a case of deviation and mistakes, it has for an aim to conduct corrective measures. Corrections of course can be caused by mistakes, but also they are regular step in continuous amelioration of processes and their redesigning. Therefore, amelioration alone and ceaseless learning demand certain rectifications and corrections.

3. Concepts according to degree of formalization

Concepts of quality management exist as formal, organized concepts with corresponding methodology and accompanying activities, but also they exist as non-formal. Namely many organizations posses quality control in a domain of whole process control, that is they conduct certain measures which belong to the concept of quality management or to the concept of business excellence, without special naming of these measures.

4. Concepts according to focus and aims

It is possible to distinguish quality concepts which are primarily directed at removal of mistakes and those who are oriented to the processing. Listed concepts are basically partial, that is they are directed to quality management of

only one dimension of business, productive one. Besides, it is also possible to distinguish series of different methods of quality management, which could be classified under one dimension of quality management – planning a quality, its management, assurance or amelioration. There is a tendency toward connecting and conjoining partial methods. Models of complex quality management such as TQM or EFQM and models based on ISO standards get significance here. Models of efficient management of total business, models of excellence, concept of Balanced Scorecard – pay great attention to quality management. Also some partial models, for example Six Sigma model, by additional building become model of total quality management. We can conclude that narrow, passive, and additional quality valuation of final product only, has been replaced by wide, active preventive quality management of all business processes.

Concepts of total quality management and concepts of business excellence

In a last few years concept of total quality management or shorter (TQM) gained a lot in significance. This model found its expression in concepts of business excellence (business excellence) like European Model of Business Excellence (EFQM BEM) and Balanced Scorecard (BSC). Total quality management could be defined as unique process of introduction, assurance and control of entire range of organizational activities, with an aim of all-comprising introduction and permanent assurance of quality. In defining and creation of quality, all subjects in a chain of value creation must participate. All of them, with their individual demands (suppliers, customers, capital owners), regulations (state) and with their own active participation (employees), take part in shaping and creation of final product. Connecting with all interested sides, results in a series of advantages for company. Result is reflected in amelioration of business image, ability for recognizance of company on market, improvement of relation with suppliers and customers, increase of profit, decrease of expenses, etc. Changing from concept of total quality management to the concept of efficient management of total business processes is a way how to achieve business excellence.

On a principle of TQM philosophy which claims that quality refers to different dimensions, that it represents process which never ends and therefore demands active participation of all subjects in a company, foundations of excellence concept EFQM are set on this philosophy. Given model was developed by European Foundation for Quality Management in 1988. This model is based upon nine criteria, five assumptions and four results. Assumptions refer to the management, policy and strategy, employees, partnership, resources and processes. Results are related to results of employees, customers, organization

and to the results of main exhibits. Each listed criteria is further explained through series of sub criteria.

Given assumptions and results are closely connected: "excellent results which refer to performances, customers, employees and society are achieved by leadership, directed policy and strategy which are achieved by people through partnership, resources and processes" (www.efqm.org; 2009)
Excellent results are results of implementation of eight basic principles, and they are: orientation to customers, partnership with suppliers, active participation and improvement of employees, permanent amelioration and innovations, adequate documentation and its accompanying, professionalism and responsibility of management for results, social responsibility and ethics, devotion to set aims.
Model Balanced Scorecard is based on similar assumption for achieving excellence, that is quality of business processes and results. It is based on four basic aspects/perspectives; perspective of learning and growth, perspective of business processes, client's perspective and financial perspective (Kaplan & Norton, 1996).
Important part of perspective of internal business is concept of TQM. And model of total quality management and models of excellence rest on the need for redesigning of all business processes and their permanent improvement. Given assumptions are contained in Kaizen model and in assumptions of norms ISO 9000ff. ISO 9004 has made significant step-up in direction of getting closer to the line of direction and content from norms ISO to TQM and to the concepts of excellence. Here different models approach direction of achieving excellence.

Results of examination in Bosnia-Herzegovina

Starting from possibilities and perspectives which are offered by different management models of "partial" and "total" quality, examination has been conducted in order to examine widespread of appliance of a given models in BH companies. Aim was to discover attitude of company toward quality and manners of quality achievement, and toward advantages of certifying according to ISO standards. Starting foundation for examination which was conducted in January and February 2009, on a sample of 40 productive, exporting, certified companies, was another examination of appliance of crucial aspects, that is logic of Balanced Scorecard in BH companies, which was conducted by E. Čizmić in 2007 and 2008, on a sample of 102 companies (See more at Čizmić.; 2008). Author got following results: 26% of examined companies possess some of the certificates, 45% is introducing or is planning to introduce and 29% does not possess any certificate. Taking in consideration results of this examination questionnaire was formed (containing 18 questions of open and closed form),

with an aim of concluding attitudes and experiences of BH exporters toward quality certificates whom they posses and toward a system of quality management. Emphasize was on finding advantages which brings introduction of postulate in certain systems of quality management, but also on problems which in process of certification companies encounter. Sample of 40 exporters with some of the certificates has been chosen. Return of questionnaire was 30%. On a basis of retrieved answers we can conclude:

1. 70% of questioned exporters said that system of quality management is actively applied in all segments of business. Contacts with suppliers and distributors are permanent with an aim of sustaining quality of input and distribution, also contact with customers is permanent with an aim of establishing more efficient returning connection. Questioned exporters agree that planning and implementation of quality includes all processes and all employees, suppliers and customers in defining quality, but also demands team work. 30% of questioned believes that emphasize is on quality of production process.
2. For introduction and following of quality, higher and middle level of management is responsible.
3. Dominating are ISO standards, just like other specific standards, like GMP and HACCP. Only 5% of questioned decided for BH BAS standards. ISO standards (98%) and specific European and world standards (that is special demands of certain countries in which products are distributed) are conditions for successful placing of product in international market.
4. Questioned exporters agreed completely (grade 5) with a claim that ISO and other certificates help in acquiring competitive advantage abroad and at home (grade 4), introduction of certificate helps in acquiring positive company image (grade 5). With grade 5 (large companies) and grade 4 (middle large companies) it is valuated certificate introduction, which has positive influence upon financial success of a company. Questioned agreed partially with a claim that introduction of ISO certificates decreases expenses and increases productivity. Questioned disagreed with a claim that there was initial resistance of employees during the introduction of quality system and they agreed (grade 5) that employees react positively to the possession of ISO and other certificates. They did not agree (grade 1 and 2) that expenses of introduction of ISO and other certificates are high. Questioned exporters agreed that introduction of certificates demands permanent, additional control of quality (grade 4).
5. Last set of questions in questionnaire referred to the problems which companies encounter in process of certification. As reasons in questionnaire following were listed: high expenses, unsettled benefits, vague interpretation of certificate essence and non-quality work of

certifying houses (questioned exporters disagree with quoted claims). Significant expense represents sending of product to analysis/certification abroad, BAS standards are not enough for placing a product on a foreign market. Certain offences refer to current BAS standards, also to the support of state and entity in introduction of quality/acquiring certificates are all related to the problem of nonexistence of Institute for standardization on a state level.

It is possible to draw conclusion that questioned exporters are satisfied with effects of introduction of ISO and other standards, especially when we talk about perspectives of placing a product in international market and strengthening of company image at home and abroad. It is also possible to notice positive long-turn effects in a form of competition growth and thus profit growth. Introduction of quality management system and certificates demands certain expenses and continuous investment, so it is not possible to see decrease of business expenses. Expenses of certifying are not high if we compare them to the benefits that are expected. Opposite of them is sending a product abroad to be certified which is a result of non-accepting BAS standards from other countries. Questioned exporters consider BAS standards not to be current enough. However it is a fact that BAS standards are mainly based on ISO and EN standards, and partly on specific foreign standard and ex JUS standards. Offences directed to BAS standards are related to non-existence of support from National Agency for standardization, which should support them. Namely Bosnia and Herzegovina has Institute for standardization but it has no institution for product certifying at state level. Authorization for certifying has been given from Institute to the Ministry of foreign trade in 2004, but till today Ministry did not formed executive body at state level. Companies are not satisfied with support from Entity and State in introduction of quality and certificates. Certain activities are occurring but stronger coordination and support are necessary. During the examination it is concluded that it is not possible to put sign of equality between ISO certificates and top results which TQM offers. ISO certificate by itself does not guarantee success and future of a company. There is a tendency that possessing ISO certificate represents only purpose. It is necessary to change way of thinking and whole business culture. Continuous improvement of processes and continuous control of results is necessary. Certain number of companies does not consider necessary permanent control of processes after the introduction of standards/acquiring certificate. Automatically activities are supposed, and this is incorrect. Companies do not apply specific knowledge in a process of quality management. They are not familiar with partial methods of quality management, and they decide about quality relying on their experience and intuition.

Conclusion

Because of the facts which are derived from theoretical concepts of quality management and concepts of excellence, and examination results, it is possible to conclude that in Bosnia and Herzegovina it is necessary to create adequate institutional frame for standardization and certification, also it is necessary to create climate for development of culture quality. Further, change is necessary in companies, in manner of thinking and behaving, in a sense of growth of consciousness about need of acceptance of postulate in quality management of all business processes. This is the only way to achieve competition and successes of Bosnia and Herzegovina companies home and abroad.

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BUILDING AND DEVELOPMENT OF THE KNOWLEDGE BASED ECONOMY IN BOSNIA AND HERZEGOVINA

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Abstract

Throughout a several last years the transition of the educational system in Bosnia and Herzegovina has been evident. Besides the various formal procedures that the education in Bosnia and Herzegovina has to go through, the system of the overall social transformation has a far greater impact on the process of change. Even the very apprehension of the term „educated person" has been changed throughout the need for a countinous adjustment and adoption of the new concept of work. In relation to this it is particularly important to set the base for building of a knowledge based society. The aim of this paper is to represent the current position of Bosnia and Herzegovina on its establishment of the knowledge based society through the application of the instruments such as Human Development Index, Knowledge Index and Knowledge Economy Index as well as to sugest potential steps in order to strengthen the process and to make it permanent. Also, the analysis of the fundamental pillars that are leading to the knowledge based economy will be performed in this paper. These pillars are Educated and Skilled Labour Force, an Adequate Information Infrastructure, a Conductive Economic and Institutional Regime and an Effective Innovation System. What will also be represented in this paper is a general overview of opportunities that Bosnia and Herzegovina should use through the educational, research and other scientific institutions in order to apprehend, generate and spread the knowledge.

JEL classification: O15, H52, H75

Keywords: Knowledge Society, Knowledge Based Economy, Human Resource Development

1. Introduction

Throughout several last years the transition of the educational system in Bosnia and Herzegovina has been evident. Besides the various formal procedures that the education in Bosnia and Herzegovina has to go through, the system of the overall social transformation has a far greater impact on the process of change. Even the very apprehension of the term „educated person" has been changed

throughout the need for a countinous adjustment and adoption of the new concept of work. In relation to this it is particularly important to set the base for building a knowledge based society. The aim of this paper is to present the current position of Bosnia and Herzegovina on its establishment of the knowledge based society through the application of the instruments such as Human Development Index, Knowledge Index and Knowledge Economy Index as well as to suggest some potential steps towards strengthening the process and making it permanent. In addition, this paper will provide an analysis of the fundamental pillars of the knowledge based economy. These pillars are Educated and Skilled Labour Force, an Adequate Information Infrastructure, a Conductive Economic and Institutional Regime and an Effective Innovation System. What will also be presented in this paper is a general overview of opportunities that Bosnia and Herzegovina should use through the educational, research and other scientific institutions in order to apprehend, generate and spread knowledge.

2. Knowledge Based Economy: Economic Implications and Possible Application in Bosnia and Herzegovina

2.1. Knowledge Based Economy and the Potential Assessment Models

The traditional macroeconomic indicators pointed out work, capital, technology and institutions as the key foundations of the production creating basis for the development parameters of each country. However, even in 1890, in his "Principles of Economies", Marshall stated that innovations and knowledge diffusion might influence the developing and applying of new methods and mechanisms that would increase the capital and labour force productivity. In addition, in 1934, in his "The Theory of Economic Development", Schumpeter pioneered in understanding that the scientific innovations were crucial in any kind of economic development. The contemporary most developed countries have become successful due to their transformation from the capital intensive into the knowledge intensive economy. Hence, their attention has been moved from the material to the non-material factors, i.e. from the traditional production factors to creating, diffusing and exploiting new knowledge. OECD describes the knowledge economy as the economic activities and systems that are directly established in creation, circulation and application of the knowledge and information (Chai-Kai Chen, 2008, p. 502). Also, the OECD is concerned with the institutions and process for:

1. Knowledge production – the research and development of new knowledge
2. Knowledge transmission – education, training and development of people
3. Knowledge transfer – the diffusion of knowledge and innovation (Clarke, 2001, p. 189).

International Development Institutions have recognised the need for development of tools that would enable measuring of knowledge management programmes in individual countries, as well as the tools for international comparing. Find below the table presenting the mostly used tools, including their advantages and disadvantages:

Table 1: Summary of Knowledge Assessment Examples

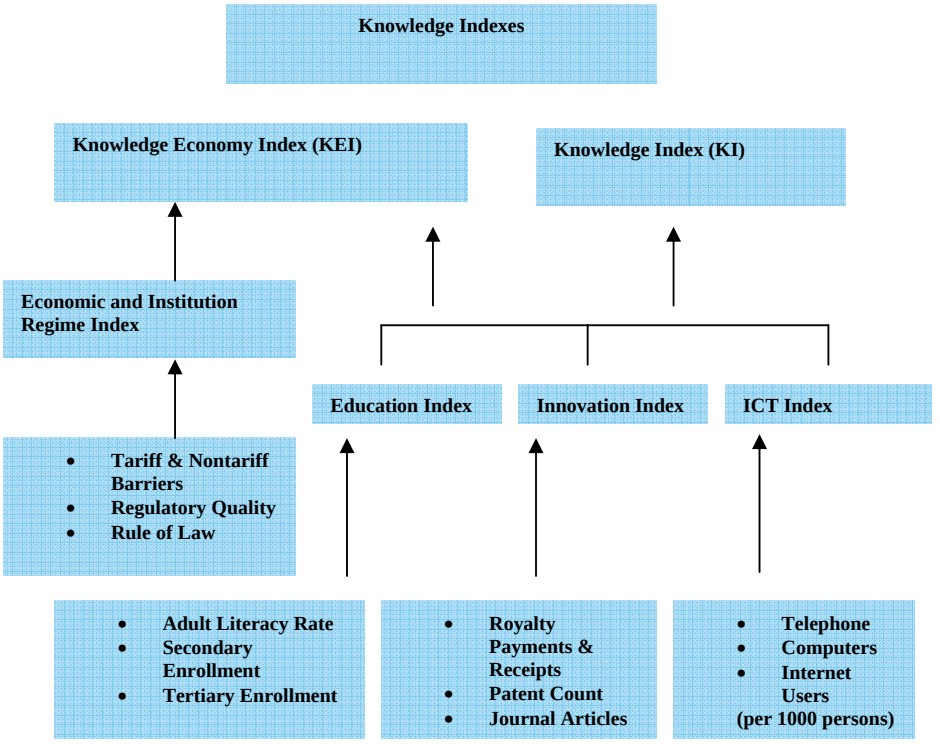
Organization	*Methods*	*Advantages*	*Limitations*
National Research Council-US	National Knowledge Assessment Methodology (NKA Prospectus)	Systematic holistic approach that balances data collection with interviews and consensus building	Benchmarking approach does not take into sufficient account local culture
OECD	Science and Technology Indicators (STI) Scoreboards	High consideration of human and social development indicators	Limited data accessibility and no user-friendly / reusable scorecards
European Union	European Innovation Scoreboards and Lisbon 2000 Indicators	Measurement framework developed within a systemic strategic planning process	Ambitious and broad plan that may not be actionable or sustainable in a short-timeframe
United Nations	ICT-Index; Intellectual Property; e-Readiness index	The ICT index presents clear interrelation and correlation of variables	Limited integration and data re-utilization
World Bank	Knowledge Assessment Methods (KAM)	User-friendly model readily accessible to the public	Limited prediction models and difficult multi-year data aggregation

Source: Passerini K. & Fjermestad (2006), AMCIS 2006 Tutorial Paper: A Review of Methods to Assess National Knowledge in the Knowledge Economy

The models present both the quantitative and qualitative forms, created by the development institutions, non-profitable organisations and governments of some countries in order to evaluate the knowledge based economies. These models comprise different measuring parameters, depending on the final aim. Thus, for instance, the virtual case studies and benchmarking relate to the specific local components of individual countries, while symposiums and scorecards apply to the national and international level. In this paper we shall concentrate on the model of the World Bank, i.e. Knowledge Assessment

Methods (KAM). The World Bank KAM model WBI 2005 is based on a set of about 80 variables (structural quantitative indicators as well as qualitative indices). A subset of these variables is used to determine cross-country comparisons through a basic scorecard with fourteen indicators: 12 variables considered as proxies for knowledge development and two additional performance variables that represent the relative size of countries (Passerini & Fjermestad, 2007, p. 114). The KAM model consists of the Knowledge Indexes, showing a country's qualitative development. The following graph provides more details:

Figure 1: Knowledge Indexes according to World Bank Knowledge Assessments Methodology



Source: www.worldbank.org (accessed February 2009)

2.2. The KAM Model Indicators for Bosnia and Herzegovina

According to the KAM model indicators for 2008, the top position in the list of the knowledge based economies is taken by the Scandinavian countries (Danmark, Sweden, Finland, Netherlands, Norway). Of course, they are followed by Canada, Switzerland, Great Britain, United States of America and

Australia. The table below compares the KAM indicators of these 10 most developed countries with Bosnia and Herzegovina.

Table 2: Cross Country Comparison KAM 2008

Country	KEI		Economic Incentive and Institutional Regime		Innovation		Education		ICT	
	recent	1995	recent	1995	recent	1995	recent	1995	recent	1995
Denmark	9.58	9.59	9.66	9.57	9.57	9.53	9.8	9.61	9.28	9.63
Sweden	9.52	9.48	9.18	8.84	9.79	9.75	9.4	9.59	9.69	9.73
Finland	9.37	9.56	9.47	9.43	9.66	9.31	9.78	9.74	8.56	9.75
Netherlands	9.32	9.49	9.18	9.5	9.48	9.53	9.26	9.69	9.36	9.24
Norway	9.27	9.49	9.25	9.39	9.06	9.07	9.6	9.71	9.16	9.78
Canada	9.21	9.23	9.42	8.41	9.43	9.32	9.26	9.69	8.74	9.49
Switzerland	9.15	9.41	9.5	9.54	9.89	9.82	7.69	8.65	9.52	9.62
United Kingdom	9.09	9.39	9.28	9.4	9.18	9.36	8.54	9.69	9.38	9.1
United States	9.08	9.5	9.16	9.2	9.45	9.56	8.77	9.42	8.93	9.83
Australia	9.05	9.23	8.66	8.75	8.72	8.87	9.64	9.93	9.16	9.35
Bosnia and Herzegovina	n/a	3.79	4.24	3.71	3.29	2.36	n/a	4.91	5.33	4.18

Source: **www.worldbank.org/kam** (Accessed February 2009)

Comparing the given data we may perceive that the indicators of the listed variables in Bosnia and Herzegovina are from 50% to 70% lower than in the most developed countries of the world. On one hand, this is not strange since many systems and mechanisms for advance of research activities leading to innovations are undeveloped. Besides, the Law on High Education has been approved just recently, the political – legal mechanisms still have not been stabilised, etc. We may get a more realistic illustration of the position of B&H if we compare it to the countries from the region, as follows:

Table 3: Cross Country Comparison KAM 2008

Slovenia	8.25	8.02	8.11	7.96	8.31	7.86	8.24	7.85	8.33	8.41
Hungary	7.85	7.29	8.39	6.66	8.14	7.66	7.62	7.56	7.25	7.27
Czech Republic	7.83	7.55	8.23	7.95	7.6	7.1	8.11	7.51	7.39	7.63
Slovak Republic	7.33	6.94	7.99	6.38	6.86	7.06	6.98	7.15	7.51	7.18

Croatia	7.19	6.33	7.16	4.04	7.54	7.43	6.44	6.96	7.61	6.89
Bulgaria	6.8	6.64	7.01	5.76	6.43	7.1	7.42	7.25	6.33	6.45
Romania	6.37	5.49	6.87	5.73	5.66	4.79	6.3	6.19	6.63	5.24
Macedonia, FYR	5.33	4.93	5.61	4.04	4.76	4.38	4.87	5.17	6.06	6.13
Albania	4.04	3.54	3.91	4.62	3.1	3.41	4.94	3.31	4.2	2.8
Bosnia and Herzegovina	n/a	3.79	4.24	3.71	3.29	2.36	n/a	4.91	5.33	4.18
Serbia and Montenegro	n/a	4.84	3.46	0.68	4.85	7.31	n/a	5.31	5.59	6.08

Source: **www.worldbank.org/kam** (Accessed February 2009)

The comparison of B&H with the countries from the region confirms that B&H is in a completely unenviable situation. All indicators denoting innovations, education, trainings and institutional regimes are significantly lower than the values of the countries from the region. Even more disturbing is the fact that indicators on education are totally unavailable; therefore it is not possible to get at least a general illustration of the B&H current position according to the KE index. Please note that in November 2007 (to be more precise, on 23rd November 2007), when KEI index indicating the development and diffusion of knowledge in B&H was also assessed, B&H was on 76th place and its KEI index amounted to 4.16 (www.worldbank.org/kam accessed 23. 11. 2007). Find below the detailed parameters of each indicator enclosed in KAM:

Table 4: Variables of Economic Performance

	Variable	**Bosnia and Herzegovina** (Group: All)	
		actual	normalized
Economic Performance	Annual GDP Growth (%), 2002-2006	5.24	6.04
	GDP per Capita (in/nal current $ PPP), 2006	n/a	n/a
	GDP (current US$ bill), 2006	11.3	2.95
	Human Development Index, 2005	0.8	5.94
	Poverty Index, 2005	n/a	n/a
	Composite Risk Rating, 09/2006-08/2007	n/a	n/a
	Unemployment Rate (% of labour force), 2004	n/a	n/a
	Employment in Industry (%), 2005	n/a	n/a
	Employment in Services (%), 2005	n/a	n/a

Source: **www.worldbank.org/kam** (Accessed February 2009)

Table 5: Variables of Economic regime

	Variable	Bosnia and Herzegovina (Group: All)	
		actual	normalized
Economic Regime	Gr. Capital Formation as % of GDP, 2002-2006	19.63	3.33
	Trade as % of GDP, 2006	117.2	7.68
	Tariff & Nontariff Barriers, 2008	79.8	5.93
	Intellectual Property Protection (1-7), 2007	2.4	0.81
	Soundness of Banks (1-7), 2007	5.1	3.63
	Exports of Goods and Services as % of GDP, 2006	36.3	4.2
	Interest Rate Spread, 2006	4.3	7.13
	Intensity of Local Competition (1-7), 2007	4.3	2.36
	Domestic Credit to Private Sector as % of GDP, 2006	52.5	6.2
	Cost to Register a Business as % of GNI Per Capita, 2008	30.1	3.41
	Days to Start a Business, 2008	54	1.7
	Cost to Enforce a Contract (% of Debt), 2008	38.4	1.78

Source: **www.worldbank.org/kam** (Accessed February 2009)

Table 6: Variable of Governance

	Variable	Bosnia and Herzegovina (Group: All)	
		actual	normalized
Governance	Regulatory Quality, 2006	-0.44	3.07
	Rule of Law, 2006	-0.53	3.71
	Government Effectiveness, 2006	-0.66	2.5
	Voice and Accountability, 2006	0.18	5.79
	Political Stability, 2006	-0.52	3.21
	Control of Corruption, 2006	-0.32	4.79
	Press Freedom (1-100), 2007	45	5.07

Source: **www.worldbank.org/kam** (Accessed February 2009)

Table 7: Variables of Innovation Systems

	Variable	Bosnia and Herzegovina (Group: All)	
		actual	normalized
Innovation Systems	FDI Outflows as % of GDP, 2000-05	0	4.08
	FDI Inflows as % of GDP, 2000-05	4	6.69
	Royalty and License Fees Payments (US$ mil.), Royalty and License Fees Payments (US$/pop.), 2006	n/a	n/a
	Total Royalty Payments and receipts(US$mil.), 2006	n/a	n/a
	Total Royalty Payments and receipts(US$/pop.) 2006	n/a	n/a
	Science and Engineering Enrolment Ratio (%), 2006	n/a	n/a
	Science Enrolment Ratio (%), 2006	n/a	n/a
	Researchers in R&D, 2006	n/a	n/a
	Researchers in R&D / Mil. People, 2006	n/a	n/a
	Total Expenditure for R&D as % of GDP, 2006	n/a	n/a
	Manuf. Trade as % of GDP, 2005	n/a	n/a
	University-Company Research Collaboration (1-7), 2007	2.4	1.69
	Scientific and Technical Journal Articles, 2005	9	1.37
	Scientific and Technical Journal Articles / Mil. People, 2005	2.44	2.3
	Availability of Venture Capital (1-7), 2007	2.7	2.98
	Patents Granted by USPTO, avg 2002-2006	0.4	3.57
	Patents Granted by USPTO / Mil. People, avg 2002-2006	0.1	4.29
	High-Tech Exports as % of Manuf. Exports, 2005	n/a	n/a
	Private Sector Spending on R&D (1-7), 2007	2.8	2.82
	Firm-Level Technology Absorption (1-7), 2007	3.5	0.65
	Value Chain Presence (1-7), 2007	2.7	1.46

Source: www.worldbank.org/kam (Accessed February 2009)

Table 8: Variables of Education

	Variable	Bosnia and Herzegovina (Group: All)	
		actual	normalized
Education	Adult Literacy Rate (% age 15 and above), 2007	n/a	n/a
	Average Years of Schooling, 2000	n/a	n/a
	Gross Secondary Enrollment Rate, 2006	n/a	n/a
	Gross Tertiary Enrollment Rate, 2006	n/a	n/a
	Life Expectancy at Birth, 2005	74.4	6.57
	Internet Access in Schools (1-7), 2007	3	3.31
	Public Spending on Education as % of GDP, 2006	n/a	n/a
	Prof. and Tech. Workers as % of Labor Force, 2004	n/a	n/a
	8th Grade Achievement in Mathematics, 2003	n/a	n/a
	8th Grade Achievement in Science, 2003	n/a	n/a
	Quality of Science and Math Education (1-7), 2007	4.4	5.97
	Extent of Staff Training (1-7), 2007	3	1.69
	Quality of Management Schools (1-7), 2007	3.4	2.1
	Brain Drain (1-7), 2007	2.3	1.45

Source: **www.worldbank.org/kam** (Accessed February 2009)

Table 9: Variables of ICT

	Variable	Bosnia and Herzegovina (Group: All)	
		actual	normalized
ICT	Total Telephones per 1,000 People, 2006	730	5.07
	Main Telephone Lines per 1000 People, 2006	250	6.21
	Mobile Phones per 1,000 People, 2006	480	4.29
	Computers per 1,000 People, 2005	50	4.42
	Households with Television (%), 2005	87.2	4.71
	Daily Newspapers per 1,000 People, 2000	n/a	n/a
	International Internet Bandwidth (bits per person), 2005	39.67	4.19
	Internet Users per 1000 People, 2006	240	6.5
	Price Basket for Internet (US$ per month), 2005	7.78	9.07
	Availability of e-Government Services (1-7), 2006	2.78	2.7

	Extent of Business Internet Use (1-7), 2006	3.8	5.17
	ICT Expenditure as % of GDP, 2006"	n/a	n/a

Source: **www.worldbank.org/kam** (Accessed February 2009)

It is obvious that the current situation is completely unsatisfying and that it is necessary to make great efforts to improve the existing indexes. Furthermore, analysing the listed variables one may assume that B&H is in a "vicious circle", where each variable impacts some other variable, even from a different group of clusters. Many data are totally unavailable, which is an additional obstacle to any further analysis. Thus, based on the given data we may conclude that knowledge is not a primary stimulating and developing factor in B&H. On the other hand, since the innovative activity of companies depends on the knowledge, brilliance and the general education level, it is logical that the innovative activity rate amounts to 3.29 and that it has not increased even by one whole level compared to 1995 (in 1995, it amounted to 2.36).
The missing data on education in B&H considerably obstruct further calculating and comparing with other countries. It is unquestionable that education should be considered in the context of the life-long learning. To reach inclusion in education and to completely utilise the learning potential it is necessary to integrate the life-long learning in the educational system, which also implies its financing. Since this topic is comprehensive and we are not to elaborate the concept of life-long learning, we will only underline that these programmes are especially important for the categories which for certain reasons have not passed through an appropriate system of formal education.

1. Summary and Open Issues

The listed indicators speak for themselves; at the moment, B&H is among the worst positioned countries in the region, facing numerous problems and challenges. Yet, despite the great disproportion with the countries from the region, and especially the developed countries, we should find these data useful since they underline the elements that should be enhanced. Knowledge is to be treated as a universally available common good and it should be used in that way. The priority in advancement should be given to educating, affirming and motivating human potentials and preventing the brain drain. Motivating of human potentials will probably be contributed by a better political-legal and the complete social and cultural atmosphere. Within these variables we should work on decreasing corruption and bureaucracy, but also on encouraging the economic initiatives and protecting copyright. We should incorporate training on application and enhancement of the modern technologies in the whole educational system, creating a culture favouring changes and innovations. Furthermore, the human resources should be encouraged to generate new ideas (either fundamental and/ or applicable) and not just to reproduce the existing

ones. This will be possible only after information and information infrastructure become totally available to all users. The cooperation between universities and business sector should refresh the whole managerial and business culture, enhancing the existing research laboratories and creating fields for knowledge diffusion. Considering the great technological changes, arriving every day from the developed and lately even from the less developed countries, as well as the more frequent and easier possibilities to copy its competitors, B&H should be able to bridge the technological gap. As any other developing country, B&H may and should use the experience of countries that have already passed this way, taking into account its own specificities. The examples of other countries, whose KE indexes have increased, confirm that the increase in the indicators enclosed by KAM is directly related to the GDP's increase on the country level, which eventually leads to the higher social prosperity. The elements analysed by the KAM model are closely related; it is difficult to speak about the innovations' development if there are no appropriate human resources. Furthermore, it is not possible to speak about a good quality educational system unless there is an adequate ICT platform. These and many other questions are still opened; yet, they point out that we should establish an analytical and systematic approach towards their answering.

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STRATEGIES OF MOBILE VIRTUAL NETWORK OPERATORS IN THE SOUTHEAST EUROPE REGION

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Abstract

MVNOs (Mobile Virtual Network Operators) are companies that function as mobile operators but do not have their own frequency spectrum allocation or the necessary network infrastructure. Those companies make business arrangements with one or more licensed Mobile Network Operators (MNOs) by leasing from them the access to mobile network and capacities. Such business concept enables the MVNOs to participate in the mobile communications market, thus extending the value chain and providing innovative mobile communication services specifically adapted to target segments. MVNOs have significant share on the mobile market in Europe and make influence on customers of mobile services in the meaning of change a telecom company and develop the new competitive strategies.

The aim of this paper is to evaluate and predict the growth strategies of the MVNOs into the South-eastern Europe markets (SEE). Findings of comparative analysis have based on the research of secondary sources, practice of EU countries with licensed MNOs and MVNOs and on our expert opinion.

Findings indicate that MVNOs which are financially strong have used *service development strategy* on the present market, while companies which operate in mobile telephony as a core business have chosen *market development strategy. Strategy of diversification* is the most applicable for companies which have a background and its core business within fixed and Internet and have added mobile telephony services to its portfolio. *Strategy of expansion* on the present market in combined with present services is not frequent on MVNO market.

As an alternative growth strategy, MVNOs in SEE countries will apply a diversification strategy that implies parallel development of new services and new markets with the aim of expansion. The major motive for applying the diversification strategy can be a relatively small existing customer base and a new market entry.

Appearance of MVNOs on the SEE market will be in form of partnership strategy with existing MNO as a form of international contracting cooperation. Pan-European global MVNO will change the industry of mobile market which will be driven by market forces, technological evolution and it will present an example of creative process destruction.

JEL classification: L22, L96

Keywords: MVNO, growth strategies, entry strategies, foreign market, mobile communications

1. Introduction

Mobile Virtual Network Operators – MVNOs are companies that function as mobile operators but do not have their own frequency spectrum allocation and all of the required network infrastructure. MVNOs therefore make business arrangements with one or more licenced Mobile Network Operators (MNOs) from which they lease the access to mobile network and capacities. Such business concept enables the MVNOs to participate in the mobile communications market, thus extending the value chain and providing innovative mobile communication services specifically adapted to target segments.

MVNOs are taking significant market share (which varies between 5% and 25% depending on the respective market), influencing switching behaviour of mobile users, as well as developing new competitive strategies. Having in mind their focus on offering differentiated services at lower prices, MVNOs are increasing both price competitiveness and Average Revenue per User (ARPU) in the mobile communications industry, an indicator that has shown a tendency to decrease over the past several years.

This paper aims at evaluating and indicating growth strategies and applicative strategies for the entry of potential MVNOs from the Southeast Europe (SEE) market into foreign markets. The results of the comparative analysis are based on secondary data research, the research of practice applied in EU countries where services are being provided by both traditional and virtual mobile operators, as well as on our expert analysis.

2. MVNO expansion strategies

Expansion strategies of individual MVNO groups shall be analysed through Ansoff's product/market expansion matrix, which provides a useful tool for detecting new intensive growth opportunities (Figure 1). MVNO management first considers whether it could gain more market share with their services in their current markets (market-penetration strategy). Next it estimates whether new markets could be found for its services (market-development strategy). Then it considers whether to introduce new services that potentially could be of interest to their current markets (service-development strategy). The last phase of these activities is to consider developing new services for new markets (diversification strategy).

Figure 1. Ansoff's service/market growth matrix for MVNOs

MARKET	SERVICE: Current	SERVICE: New
Current	(1) Market penetration strategy Yesss! Telekomunikation	(3) Service-development strategy Song, Energis, NTL, Tele2, Kingston Communications, Tesco, Sainsbury's, Virgin Mobile
New	(2) Market-development strategy Sense Communication, Carphone Warehouse, One.Tel, Mobison	(4) Diversification strategy Glocalnet, Dial n'Smile

Source: Ansoff, 1965, p. 241

Secondary data research shows that launching a new service into an existing market (Strategy No. 3) is the strategy commonly used by MVNOs on the mobile communications market. This group of MVNOs generally includes financially strong companies that have one thing in common: they all operate successfully in their target markets, but run a different range of core products/services. We can take the example of MVNOs whose core business includes fixed telephony and Internet (e.g. Tele2, Song, Kingston Communications, NTL). These companies maintain a database of fixed telephone users to which they additionally offer their mobile services. Besides, the competitive advantage of fixed operators in the MVNO business is drawn upon the existing technical platform as well as the supply of new services. Since they enter the mobile telephony industry as „full MVNOs", these telecom companies create new business opportunities by integrating mobile and fixed telephony services. Aside from the MVNOs, which operate in the telecommunications sector, this strategy is pursued by companies from other sectors as well, such as trading companies (e.g. Tesco and Sainsbury's) or energy companies (e.g. British Gas Communication and HamEl). Their competitive advantage lies in the existing database of users and extensive distribution channels. One of the main motives for a company to enter the mobile communications market as an MVNO is the increased customer loyalty and a strengthened position of its core business in the existing market. Their large sales centres provide for distribution channels to the existing customer base, which is being carefully evaluated.

Those MVNOs that opt for the market-development strategy seek to expand their business within the supply of the existing services in domestic, but also in foreign markets (Strategy No. 2). Such companies usually come from the telecommunications sector, meaning that mobile telephony is their core business. The case of Carphone Warehouse is particularly interesting since this MVNO first started operating in the UK mobile communications market as a

service reseller (thin MVNO). After implementing a brand strategy, as a "new" MVNO it both retained its old users and attracted new groups of users. This particular operator has focused on new users within the same geographic area. The guiding idea of this group of MVNOs is to develop new markets for the services that have been founded on the previous market experience. The second motive for an MVNO to choose this strategy could be the opportunity to exploit technical infrastructure that has not been established in the existing market and would enable it to achieve economies of scale (e.g. Sense Communication presence in Scandinavia).

Diversification strategy implies a parallel development of new services and new markets with the aim of MVNO expansion (Strategy No. 4). This group of MVNOs includes companies having fixed telephony and Internet as their core business and seeking to expand their portfolio to include mobile communication services and to enter new markets. Their target segments include not only different groups of residential users but also large business users. Companies Glocalnet and Dial n'Smile, for example, began their operations in fixed telephony in 1998, and by 2000 they had already launched mobile services as well (Kristensson, Gahnström, 2001). Unlike companies that draw on the new service strategy, these telecom companies do not have a fixed backbone of their own but rather function as virtual operators in fixed telephony (so-called alternative operators). The main motivation of these MVNOs to use the diversification strategy is a relatively small existing user database. They are looking to attract new users by adding mobile communication services to their offer, which makes it more appealing and conducive to company's growth. The diversification strategy might be beneficial to this particular type of companies since telecoms already operate in fixed telephony, which brings about benefits to their MVNO operations. This is both a vertical backward integration in the sense of having access to certain technical components, billing services and other support systems, and a forward integration involving distribution, marketing and end user care. There is one significant difference between fixed telephony companies from this group that are entering the MVNO business and those companies whose core business does not involve telecommunications: unlike the latter, the former group has a small customer database.

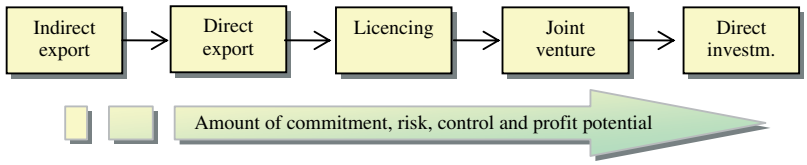
Strategy of market penetration into the current market with the existing services is less frequent in the case of MVNOs (Strategy No. 1). By adopting this strategy, MVNOs seek to gain more market share with their services in their current markets. There are three ways in which an MVNO can pursue this strategy: a) increase demand by existing users, b) encourage competitor customers to switch to their services and c) target its marketing activities at potential underdeveloped segments (Kotler, 1999). The example of an MVNO that uses this strategy is Yesss! Telekomunikation, which aims at taking over its competitors' customers by offering them low rates to any destination in the domestic market (Austria). In the case of domestic market growth, an MVNO

could create objective conditions for the expansion of its existing mobile communication services as well as for the development of new services.
Since it is closely connected with all elements of market development, there are three possible scenarios for the internationalization of MVNOs: a) entry of another MVNO from abroad will trigger domestic market growth, b) foreign MVNO operations in the domestic market will induce changes in market structure, and c) entry from domestic market into that of another country/other countries will bring about MVNO's geographic expansion.

3. MVNO foreign market entry strategies

One of the most important international marketing strategy decisions that a company aiming to internationalise its business needs to take is to choose the optimal strategy for foreign market entry. This choice will directly affect the company's performance in the foreign market since each strategy implies different amounts of commitment, risk and control. Figure 2 illustrates five foreign market entry modes: indirect and direct exporting, licencing, joint ventures and direct investments.

Figure 2. Five modes of foreign market entry



Source: Kotler, Keller, 2006, p. 674

There are three alternative international market entry strategies: a) entry through exports of goods and services, b) entry through international contractual cooperation (transfer of production abroad without the investment of capital), and c) entry through investment (transfer of production abroad with the investment of capital). Companies can opt for several different strategies depending on a market or even apply a strategy mix to enter their target market.

3.1. Entry through exporting

The concept of export marketing draws on domestic environment practices in terms of resources and the capacity for international market entry. A company focuses on those markets that do not diverge much from the domestic marketing environment (most frequently neighbouring markets) and apply a marketing mix that has already been tested in the domestic market. This means that an

ethnocentric orientation and domestic managerial preferences are the prevailing factors in companies that practise export marketing (Domazet, 2001). Exporting is defined as international sale of goods that are produced in one country and disseminated across its borders by applying appropriate legal and trading procedures (Jović, 1997). This mode of foreign market entry is not applicable to MVNOs having in mind the nature and the form of their market activities.

3.2. Entry through international contractual cooperation

Companies aiming to enter foreign markets via international contractual cooperation have several options at their disposal, such as: cross-border transfer of production licence, grant of franchise rights, long-term collaborative manufacturing with an international partner, management contracting, assembly operations, contract manufacturing, production sharing and strategic partnership.
Despite occasional drawbacks in relation to profit and risk, the management should be aware that export activities only gradually develop through the internationalisation stage, as well as that there are three dimensions to a satisfactory export performance: increased sales and market share growth, higher profitability and improved competitive position (Czinkota, Ronkainen, 1998). As far as MVNO practice is concerned, two modes of foreign market entry via international contractual cooperation can be applied: franchise system and strategic partnership.

3.2.1. Franchise system

Franchising refers to a specific form of practicing contractual marketing. It is carried out through different modes of cooperation and business relations between partners as independent subjects that are bound by a franchise agreement. By means of this agreement, one of the partners (the franchisor) grants the other business partner (the franchisee) rights, whether in terms reserved or not, under certain conditions, so as to establish a unique business organisation with individualised marketing elements (brand, product image) (Jović, 1997). The system consists of one franchisor and several franchisees from different countries, mutually bound by the agreement.

Applied to the mobile communications market, a licenced MNO typically grants the franchise to those MVNOs that are more „virtual“, i.e. do not have a technical platform of their own and lack the ability to provide differentiated services (due to limited financial and other capacities). Only those licenced MVNOs that maintain separate retail and wholesale business operations can pursue a successful business strategy with an MVNO. Certain MNOs apply the strategy of entering a specific market as telecom operators whose core business

concentrates on wholesale activities, after which they conclude separate agreements with different MVNOs for each target segment individually. Such strategy has granted success to operator Telfort and its partner KPN who entered into business arrangements with 19 MVNOs (Lennighan, 2006). Some MNOs franchise the distribution segment by launching their own MVNO, usually under a sub-brand, with the aim of improving services for the users of target segments. The examples of these companies can be found in Austria, where the MNO One Austria has its own MVNO: Yesss Telekommunikations, in Denmark (TDC Mobil launched Telmore) and Germany (E-plus launched Simyo).

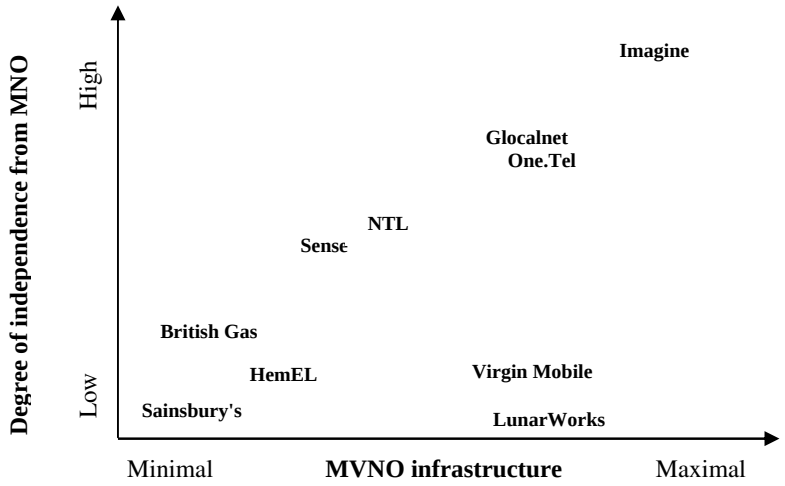
The structure of MVNOs in individual SEE market segments could be established as: a) diversification of an MNO, b) original market initiative and c) direct entry of a foreign MVNO. We believe that options under a) and b) are currently not possible in the SEE due to two reasons: (1) many MNOs are still mixed telecom operators (fixed-mobile), meaning that before considering further diversification, it is first necessary that they divide into separate entities and establish the wholesale operation segment; (2) there is no original initiative among the existing MNOs because of the fact that the market has still not reached the saturation phase and the demand for services is high. One possible option would be a direct entry of a foreign MVNO into individual SEE market segments. The MVNO entry is anticipated through partnership strategy as a form of international contractual cooperation with an existing MNO.

3.2.2. Strategic partnership

In EU countries, one way to enter a foreign market would be to make a business and technical cooperation agreement between an MVNO and an MNO. On the one hand, licenced MNOs seek to sustain the growth of their mobile networks by gaining more market share, most commonly by applying the diversification strategy. Since they are faced with higher customer acquisition costs and higher churn rates, the partnership with an MVNO is expected to bring about certain benefits such as lower customer acquisition costs, long-term customer retention and delivery of specialised value-added services. On the other hand, MVNOs aim to find a partner who would grant them access to its mobile network at reasonable rates. MVNOs with insufficient technical platforms greatly depend on their partner MNOs (British Gas Comm. with Vodafone). In case an MVNO decides to increase investment in infrastructure, it would automatically achieve a higher degree of independence and differentiation of services in relation to a partner MNO (Figure 3). One of foreign market entry modes for a licenced MNO is to found its own MVNO and use defined strategies to enter the market in one or more countries.

We will take the example of Dutch incumbent operator KPN, which has chosen to enter mobile communications markets in Spain and Portugal with the strategy of offering low rates to both residential and non-residential users. Immediately after entering the Spanish market, KPN took over the majority of users from E-plus, a virtual operator that, besides Germany, operates in several other European countries using the same low-rate strategy (Global Mobile, 2006). We believe that MVNO entry into the SEE market segments (Croatia, Bulgaria, Romania) will be based on the strategy of strategic partnership with a licenced MNO because a) these segments have created more favourable conditions (favourable external opportunities and vast internal strengths), b) a high degree of market penetration has been achieved, and c) there are three MNOs operating in each market whose offer includes 2G and 3G technologies.

Figure 3. Partnership relations between MVNO and MNO
-degree of independence vs. infrastructure-



Source: Created by authors

In the case of some of these markets (Bulgaria and Romania), there is a lack of regulatory framework for further liberalisation of mobile communications market, which may pose a barrier to entry.

3.3. Entry through investment

Another mode of foreign market entry is the transfer of production across borders made through the investment of capital. Capital is released into a

foreign market in order to establish production in a country with optimal conditions for profitable business operations. Foreign investments are the most complex of all foreign market entry strategies. Unlike portfolio investments, direct investments intend to create lasting and active economic interest that reflects investors' goal to generate returns on invested capital. The main feature of direct investment is that a foreign investor gains ownership rights, voice in management and the right to exercise control over business operations. Regardless of whether operators entering the mobile communications industry are coming from the telecom sector or not, their reasons for choosing to enter as MVNOs as well as their (domestic and/or foreign) market entry strategies largely differ (Table 1). For example, Tele2 offer is based not only on low rates, but it also provides convergent services of mobile and fixed telephony and Internet and is looking to increase domestic market share and establish competitive advantage in foreign markets (Eslava, 2005).

Foreign investment can be realized in two ways: by establishing a new company and by acquisition of an existing company operating in the local environment. Interested telecom companies can avail themselves of the opportunity to make acquisitions through the process of privatization of telecommunications, which is still underway in SEE countries. A joint venture is another common mode of foreign market entry for MVNOs. Examples include Easy Mobile (TDC and Easy Group), Virgin Mobile (T-Mobile UK and Virgin Group; Virgin Mobile and Optus in Australia), Lunarworks and Europolitan in Sweden. An MVNO often lacks full independence since the partnership assumes that it becomes a part of the MNO. The role of an MVNO in such partnership can bee seen as threefold: that of a shareholder, service provider and competitor. Motivations for MVNO joint venture formation, aside from foreign market entry, are diverse and include: a) reducing investments and investment risks in building the UMTS network (Telia and Tele2), b) meeting regulatory requirements (Europolitan and Sense), c) increased GSM network traffic and expansion of customer database by virtual operator's existing database (Europolitan and HemEL), d) benefits of a strong brand (e.g. Europolitan is owned by Vodafone) (Blom, Ernstsson, 2001).

Table 1. Reasons for operating as MVNOs – examples from Europe

MVNO / Country		Supply of services: low rates	Increase domestic market power	Supply of services: differenti-ation	Increase customer loyalty	Supply of convergent services	Niche development
MVNO from telecom sector							
Yesss! Telekom.	Austria	✓	✓				
Simyo	Germany	✓	✓				
Tele2	Various countries	✓	✓			✓	
Energis	UK		✓			✓	
One.Tel	UK	✓	✓			✓	
MVNO from non-telecom sector							
Mobyson	Scandi-navia			✓			✓
Lunar Mobil	Sweden			✓	✓		✓
Easy Mobile	UK	✓		✓			
Sainsbury and Tesco	UK	✓		✓	✓		
Virgin Mobile	UK	✓		✓			

Source: Eslava, 2005, p. 2

We believe that the SEE market has still not reached the degree of development and liberalization needed in order for this business arrangement to prevail. Besides via foreign direct investment, telecom companies can enter the SEE market by way of international strategic alliances.

3.4. Role of strategic alliances in telecommunications

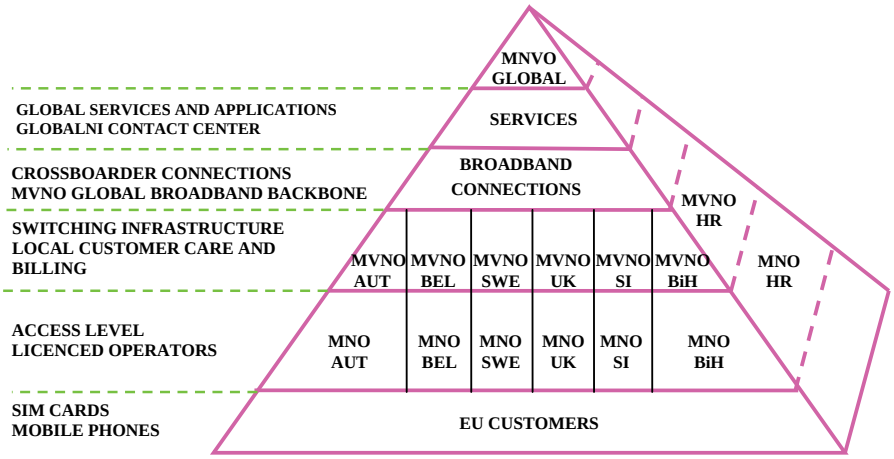
A strategic alliance is clearly defined by three major characteristics: a) it is a union of two or more companies that pursue a set of agreed upon goals while retaining their independent status; b) partner companies share the effects of cooperation and exercise joint control over the alliance in terms of goals they have agreed upon; c) companies forming an alliance contribute to common results through continued cooperation in key strategic areas (technology, products etc.) (Yoshino, Rangan, 1995). Guided by the telecom reform process, mobile communication operators are entering into various forms of alliances and partnerships, which provides them with necessary reinforcement to compete in both national and international markets. In fact, the number of strategic alliances in the telecommunications industry is on the rise. When speaking of MVNOs, it is important to mention the alliance called MVNO Global Initiative, which was founded in Luxembourg in late 2005 by leading

experts from telecommunications and finance industry. Its mission is to develop a Pan-European global mobile operator using full infrastructure MVNO concept. This includes introducing and completing the horizontal integration of existing MVNOs, as well as creating conditions to expand globally. The main objective is to create a global telecommunications company based on innovative services and superb customer care with the aim of reaching economies of scale, reducing duplicate departments or operations, lowering costs and increasing profit. The company could in addition benefit from the synergy such as a better use of complementary resources, centralized service platform and the value of a global brand name.

Experts from European consulting firms believe that the developed EU mobile communications market is currently in transition and that the new-generation MVNO era is coming to completely change the mobile communication industry. This process is unavoidable and driven by economic forces and technology evolution, setting an example of a creative destruction process. Unlike Denmark and Finland, where there is a large number of MVNOs due to market liberalization, in the CEE countries, under the pressure of regulatory authorities, the process of MVNO development is just starting.

MVNO Global is designed as a network platform that consists from devices and equipment in each country, connected to each other by broadband connections. Each country's Gateway Mobile Service Switching Centres (GMSC) will be connected to other incumbent operators under the terms of interconnection agreements (Figure 4). Service platform and applications should be centralized as much it is technically possible in order to reduce capital expenses.

Figure 4. MVNO Global operating scheme



Source: MVNO Global Initiative: www.mvno.biz (19.12.2007)

In each country, Global MVNO should have its own Mobile Network Code (MNC) and International Mobile Subscriber Identity (IMSI). In the first stage of the project, the analysis of mobile markets in EU countries will be performed in order to identify key players and select those companies who are interested in approaching the integration process. The second stage applies to the development of a common standardised service platform by upgrading the existing networks. Finally, in the third stage, platform access and connection will be enabled for other interested countries as well. SEE countries planned in this process are: Slovenia (in the second stage), Albania, Bosnia and Herzegovina, Bulgaria, Serbia and Montenegro (third stage). MVNO Global also plans to launch a start up phase aided by its own financial resources, strong brand name and know-how in telecommunications and international marketing.

3.5. Conclusion

The conducted research shows that financially strong MVNOs often use the strategy of launching a new service into an existing market, whereas the companies whose core business is mobile telephony opt for the market-development strategy. Diversification strategy is most common among the companies having fixed telephony and Internet as their core business and seeking to expand their portfolio to include mobile communication services and to enter new markets. The strategy of market penetration into the current market with the existing services is the least frequently used by MVNOs. The MVNO entry into the SEE market is anticipated through partnership strategy as a form of international contractual cooperation with an existing MNO. Besides, the developed EU mobile communications market is currently in transition and a new-generation MVNO era will completely change the mobile communication industry by launching a Pan-European global mobile operator. This is an unavoidable process, driven by economic forces, technological evolution, and sets an example of a creative destruction process.

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MARKET ORIENTATION OF THEATRES IN BOSNIA AND HERZEGOVINA

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Abstract

Market orientation has lately become one of the major research issues in Bosnia and Herzegovina, mainly because of the country transition to market economy. This process requires essential changes in business behavior of organizations which need to become market oriented. Our study measures the level of market orientation of theaters in Bosnia and Herzegovina. We tried to find out up to which level theaters in Bosnia and Herzegovina implement activities known as intelligence generation, intelligence dissemination and responsiveness. Research results show that the level of market orientation is, according to three MARKOR subscales, low. Theaters collect information from their environments and they have a certain process of organizational communication which results in the level of functional compatibility of (re)actions aimed to the market. Nevertheless, the conclusion is that all the analyzed activities are in their early stages of development.

JEL classification: L32, L33, L83, L84

Keywords: market orientation, business behavior

1. Introduction

Market orientation of profit organizations is a subject of numerous researches. However, a much smaller number of in-depth analyses are conducted on the issue of market orientation of non-profit organizations. Although, profit is not their primary goal it does not mean that non-profit organizations should not test business conducting on the market. Non-profit art organizations must have an even more aggressive role on the market, which means that they have to influence the public in order to create new needs (Adižes; 2002, 24). Key reasons for applying marketing strategies in a theatre are classical organizational models, the role of political elites, old methods of ticket sales and a need for financing theatre projects (Marić; 2000, 15).

Marketing oriented organization is „consumer oriented“ and it is defined as an organization which „puts great effort in order to feel, serve and satisfy the needs and wishes of its clients and audience, but within its financial limits“ (Kotler&Levy; 1969, 43). Consumer orientation is equal to the implementation of marketing concepts or marketing orientation in non-profit organizations, with a focus on consumers, coordinated efforts and profitability (Kotler&Andreasen; 1987, 38).

Market orientation is „the generation of adequate market notifications which are related to present and future needs of buyers, as well as relative abilities of competitors to satisfy those needs; the integration and good communication between the departments and coordinated strategic organization to respond to specific needs of the market.“ (Shegliand&Dart; 1994, 276/ Hunt&Morgan; 1995, 1/ Ruekert; 1992, 228).

2. Research

The main aim of this research was to discover whether theatres in Bosnia and Herzegovina are market oriented. For research purposes five key questions were defined:

1. What is the level of market orientation of theatres in Bosnia-Herzegovina?
2. What level did theaters in Bosnia-Herzegovina reach in the process of “gathering market information”?
3. What level did theaters in Bosnia-Herzegovina reach in the process of “disseminating market information”?
4. What level did theaters in Bosnia-Herzegovina reach in the process of „answering market information”?
5. What effect can eventual market orientation have on theatre's profitability?

2.1. Research methodology

The data collected during research was collected through questionnaires which were sent to fourteen different theatres in Bosnia and Herzegovina. The questionnaires were addressed to marketing sector personnel, as well as non-marketing sectors and directors. 85,7 % of questionnaires were answered.

The questionnaire was composed of 32 Markor model questions, but they also consisted of market orientation elements of non-profit sector (Kohli&Jaworski; 1990, 12). The questionnaire consisted of following elements: a) ten questions on „gathering market information“, b) eight questions on „dissemination of market information“, c) fourteen questions on „responding to market

information“. Every question was graded according to Lickert's scale from 1 (disagree totally) to 5 (agree totally). It is essential to note that in some cases inverted coding was used (1-agree totally, 5-disagree totally)

2.2. Research results

Collected data was analyzed in SPSS. In order to collect data for analysis, every statement in the questionnaire was defined as a variable (v1, v2, v3, etc.). Furthermore, every variable was connected to a grade from 1 to 5, according to a given answer. On the basis of these parameters arithmetic mean and standard deviation of every variable was calculated.

Table 1 – Scales for measuring market orientation of theatres in Bosnia and Herzegovina[8]

VAR. NO.	STATEMENT	MEAN GRADE	STANDARD DEVIATION
	Collecting market information		
1.	We meet with audience at least once per year in order to find out what kind of repertoire and other services they want to see in the future.	4,58	0,515
2.	Representatives responsible for public relations cooperate directly with the audience, in order to notice their needs and serve them better.	4,50	0,522
3.	In our theatre we work on the so called „in-house“market research, so that we can outline the real needs and preferences of our audience.	4,50	0,674
4.	We are slow in discovering the preferences of our audiences, notably in theatre shows and services (*)	2,75	1,215
5.	At least once per year we ask our audience to grade the quality of our programme and other services we offer.	4,17	0,718
6.	We often talk with the audience or with individuals who we think could influence the decisions of our audience.	4,25	0,965
7.	We often collect business information in an informal way (lunch with colleagues from other theatres, business meetings, cocktails, private contacts, etc.).	4,00	1,128
8.	Several departments in our theatre collect information on our competitors, independently from each other.	3,00	1,348
9.	We are slow in noticing fundamental changes in	3,42	1,311

[8] Legend: (1 = disagree totally; 2 = diagree; 3 = undecided/do not know; 4 = agree; 5 = agree totally). Questions marked with the asterix (*) are questions that were graded with inverted codes, and thus the scale is changed with these questions : 1 = agree totally; 2 = agree; 3 = undecided/do not know; 4 = disagree; 5 = disagree totally.

VAR. NO.	STATEMENT	MEAN GRADE	STANDARD DEVIATION
	theatre business (e.g. competition, social changes, economic situation, legal regulations). (*)		
10.	We periodically analyze changes in business environment (e.g. social changes, politics, salaries), which could have an influence on our audience.	3,83	1,267
	Distributing market information		
11.	Most of our informal meetings in this theatre are focused on our competition and their tactics and strategies.	3,58	1,165
12.	We have joint interdepartmental meetings at least on trimester basis, where we discuss our market trends and development.	4,00	0,953
13.	Marketing sector personnel (or similar sector) in our organization spend a lot of time in discussing with personnel from other sectors on issues of future needs/audience preferences.	3,92	0,900
14.	In our organization we circulate newspapers, daily news, reports, etc.), which offer information on our audience.	4,08	0,793
15.	When something important happens to our audience, the entire theatre learns about the event in a very short time.	4,45	0,688
16.	The information on audience satisfaction is always distributed to levels in our organization.	4,58	0,900
17.	There is minimal communication between our marketing sectors and other sectors when it comes to questions of market development. (*)	2,17	1,267
18.	When one sector discovers information on our competitors, it is usually slow in notifying other sectors about it. (*)	3,17	1,642
	Response to market information		
19.	We take a long time in deciding how to respond to competitor price change in tickets/services. (*)	3,17	1,642
20.	The main principles of market segmentation drive our development efforts and help us introduce new theatre services.	4,17	0,937
21.	For certain reasons, we tend to ignore changes that our audience asks for. (*)	3,67	1,497
22.	We periodically consider the activities that develop our services, so that we sure that the audience accepts them.	4,00	1,044
23.	Our business plans are developed through organizational and technical skills, rather than through market research. (*)	3,25	1,215
24.	Periodically, several sectors jointly plan answers to changes in our business environment.	3,25	1,055
25.	The services we offer depend on our internal politics, and not on real market needs. (*)	3,17	1,337
26.	If our main competitor would launch a campaign to	3,33	1,155

VAR. NO.	STATEMENT	MEAN GRADE	STANDARD DEVIATION
	get our audience, we would promptly create a counter strategy.		
27.	The activities of various sectors in our organization are well coordinated.	3,92	0,793
28.	We ignore our audience complaints. (*)	4,33	0,492
29.	Even if we had excellent marketing plan, we probably would not be able to implement it fully. (*)	2,58	0,996
30.	We are fast to respond to price changes that our competitors impose.	3,00	1,279
31.	When we learn that the audience is not satisfied with the quality of our services, we quickly take the necessary steps to change the negative trend.	4,17	0,835
32.	When we learn that the audience would like to modify the services that we offer, the responsible sectors put great efforts to introduce the change.	4,00	0,739

Source: author's research and calculation

On the basis of provided data, one comes to the answer to the first question: *"what is the level of market orientation of Bosnia and Herzegovina's theatres?"* The result was obtained through the method of finding the arithmetic mean of all median values of specific variables. The average grade given to market orientation level of theatre sector in Bosnia and Herzegovina was 3, 7148 with a standard deviation of 0, 36593. This brings us to the conclusion that theatre sector in Bosnia and Herzegovina does not have a highly, but partially market oriented system[9].

The second question was: *"what level did theaters in Bosnia-Herzegovina reach in the process of „gathering market information"?* The grade given to Bosnia-Herzegovina's theatre sector in conducting this process was 3.9000. This is the best result, which confirms partial market orientation with a standard deviation of 0.42426.

The third question was: *"what level did theaters in Bosnia-Herzegovina reach in „disseminating market information?"* The grade given to this activity was 3.7292, which also confirms that here we have partial market orientation with somewhat lower standard deviation of 0,48216. In reality, this confirms that information collected outside of theatre is not adequately disseminated within the organization itself.

The fourth question:*" what level did theaters in Bosnia-Herzegovina reach in „answering market information" processes?"* was given a grade of 3.5714

[9] Ocjena 3 označava neutralnu tržišnu orijentaciju, dok ocjene iznad 3 predstavljaju pozitivnu tržišnu orijentaciju.

with a standard deviation of 0.45888, which leads to a conclusion that theatres respond poorly to information gathered from the outside.
In order to give an answer to the fifth question: *"what effect can eventual market orientation have on theatre's profitability?"* we needed to grade several measures of success. As a measure of success in theatre sector, we took a number of permanently employed artists in ensembles, as well as a number of independent units in the theatre, revenue from ticket sales, number of premiers and a number of times the ensembles participate at festivals or guest visits. All indicators are considered on the annual basis.
The questionnaire also asked a question: "how would you grade the activity level at your theatre planned for the last year?" The answers could be graded from 1 to 5, where 1 means that no activities were introduced, and 5 means that all planned activities were completed. Table 2 lists all general questions related to theaters, and answers which show the level of success of every theatre considered in this analysis. The answers presented in the table below show the eventual influence of market orientation on theatre profitability.

Table 2 – Variables for measuring the effect of market orientation on theatre profitability

VAR. NO.	QUESTIONS	MEAN GRADE	STANDARD DEVIATION
34.	What is the number of permanently employed personnel in the theatre?	35,80	20,730
35.	What is the number of permanently employed artists in ensembles?	13,89	5,968
36.	What is the number of sectors in the theatre?	3,29	1,496
37.	What was last year's annual revenue from ticket sales? [10]	50867,26	48014,562
38.	How many premiers and shows did your theatre have last year?	28,73	59,114
39.	How many times did your ensembles participate at festivals or visits to other theaters in the last year?	8,40	8,181
40.	What grade would you give to your theatre in terms of completing annual goals?	3,82	0,603

Source: author's research and calculation

Table 3 presents a correlation matrix which shows a connection between certain variables. The highest level of correlation between the two variables equals to 1, while the lowest equals to 0.
It can be noticed that the values on the main diagonal are all equal to one, because every variable is in perfect correlation with itself. Besides, the correlations above and below the main diagonal seem to present an "image in the mirror".

[10] In convertable marks (KM).

Table 3 – Correlation matrix[11]

		MO[12]	GMI	DMI	RTI	V34	V35	V36	V37	V38	V39	V40
MO	Pearson Correlation	1										
	Sig. (1-tailed)	,										
	N	12										
GMI	Pearson Correlation	,772**	1									
	Sig. (1-tailed)	,002	,									
	N	12	12									
DMI	Pearson Correlation	,754**	,500*	1								
	Sig. (1-tailed)	,002	,049	,								
	N	12	12	12								
RTI	Pearson Correlation	,864**	,454	,455	1							
	Sig. (1-tailed)	,000	,069	,069	,							
	N	12	12	12	12							
V34	Pearson Correlation	,333	,366	-,338	,488	1						
	Sig. (1-tailed)	,173	,149	,169	,076	,						
	N	10	10	10	10	10						
V35	Pearson Correlation	,560	,697*	,262	,413	,909**	1					
	Sig. (1-tailed)	,058	,018	,248	,135	,002	,					
	N	9	9	9	9	7	9					
V36	Pearson Correlation	,789*	,639	,429	,786*	,139	,591	1				
	Sig. (1-tailed)	,017	,061	,169	,018	,397	,108	,				
	N	7	7	7	7	6	6	7				
V37	Pearson Correlation	,187	,087	,116	,212	-,083	-,040	-,188	1			
	Sig. (1-tailed)	,315	,412	,383	,292	,430	,466	,381	,			
	N	9	9	9	9	7	7	5	9			
V38	Pearson Correlation	,037	,262	-,121	-,030	-,026	-,040	-,099	-,159	1		
	Sig. (1-tailed)	,457	,218	,362	,465	,474	,460	,426	,354	,		
	N	11	11	11	11	9	9	6	8	11		
V39	Pearson Correlation	-,088	-,226	-,218	,095	,321	,219	-,083	-,020	,018	1	
	Sig. (1-tailed)	,404	,265	,272	,397	,200	,302	,447	,483	,480	,	
	N	10	10	10	10	9	8	5	7	10	10	
V40	Pearson Correlation	,301	,325	-,166	,434	,613	,621*	,380	,265	,153	,129	1
	Sig. (1-tailed)	,185	,164	,313	,091	,040	,037	,229	,263	,327	,361	,
	N	11	11	11	11	9	9	6	8	11	10	11

Source: author's research and calculation

Table 3 illustrates a high level of correlation between market orientation and its indicators. The highest degree of correlation exists between market orientation and "response to market information", followed by market orientation and distribution of market information, and market information and gathering market information. This also represents the effect these indicators have on market orientation.

Although less statistically important, but still with a high degree of correlation, is the relation between market orientation and the number of independent organization units within the theatre.

Statistically, gathering information and information dissemination correlate with the number of permanently engaged artists, while information dissemination does not correlate significantly with any of the given variables. The responsiveness to the information highly correlates with the number of

[11] ** - correlation is significant on 0.01level (1-tailed); * - correlation is significant on 0.05 (1-tailed)

[12] MO – market orientation; PTI – gathering market information; DTI – distributing market information; OTI – response to market information. Signes V34-V40 are explained in Table 2.

independent organization units within the theatre. However, this relation is statistically less important.

Statistically significant, as well as highly correlated is the relation between the number of permanently employed personnel and permanently engaged artists.

The research also showed that goal-oriented theatres are directly influenced by a number of permanently engaged artists in the ensembles.

Table 4 illustrates the correlation between market orientation and per capita earnings, since these the former is the main indicator of the latter. It is possible to note that in the table below the level of correlation is very low, which demonstrates the insignificant influence of this indicator on the overall market orientation of theatres in Bosnia and Herzegovina.

Table 4 – Correlation between market orientation and income (per person)[13]

		MO	PI
TO	Pearson Correlation	1	
	Sig. (1-tailed)	,	
	N	12	
PZ	Pearson Correlation	,264	1
	Sig. (1-tailed)	,284	,
	N	7	7

Source: author's research and calculation

3. CONCLUSION

The results show that theatres in Bosnia and Herzegovina are only partially market oriented. If one considers market orientation as a process consisting of three phases (information gathering, information dissemination within the organization and information receptiveness), it is easy to note that, as they develop, these phases loose on strength. Furthermore, the first phase of the process (information gathering) was graded with the highest grades, while information dissemination received somewhat lower graded. Lastly, information receptiveness was graded the lowest.

Although they do gather market information, it is evident that theatres still do not succeed in turning this action to their advantage. This occurs mainly because of poor internal information dissemination, as well as uncoordinated responsiveness to gathered information.

The correlation analysis proved that there is an important link between market orientation and the number of independent working units within theatres, as well as a number of permanently engaged artists. There is also a significant correlation between goal fulfillment and the number of permanently engaged artists. Nevertheless, although the main indicator of market orientation is per capita earning, the correlation between the two was not proven.

[13] MO – market orientation; PI – income (per person).

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MARK VS. BRAND – TERM AND CONTROVERSIES

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Abstract

Starting from the new marketing paradigm, putting the buyer, and therefore his understanding of the products and services that meet his daily needs at the center of marketing actions, attracts more and more attention. Having in mind the latest advertising drive of "Coca-Cola" one can say that, so far, they have been engaged in the sale of "Coca-Cola", and now sell Coca Cola "side of life."
The work compares two terms *mark and brand*, and provides the most common meanings of these terms, starting from the differences in the concepts of trade mark and brand.
The universal anglicanization not only in the language of marketing, but also in other languages, the term *brand* is more and more being used synonymously to the term *mark*, which we can not agree with.
Customers and consumers create a special relationship to the mark. There are different models of the evolution of the concept of branding. Corporate brand as a concept implies a coordinated portfolio of marks.
The practice of marketing is based on product quality, development of trademarks and a creation of a brand. Contemporary practice of marketing starts with the creation of brands which are given characteristics of trademarks and products.
Brand, in general, expresses a mission and values that the company nurtures, and must be incorporated in the vision of the company. Starting point for building a brand is a belief that must realistically indicate the value related to the client. This belief is particularly important in the process of communicating the brand, both with external and with internal factors.

JEL classification: M21, M31

Keywords: brand, mark, trademark, brand equity, product

Introductory thought

When talking about brand, we usually do not refer to all the issues that arise from just one word, word which etymologically derives from the Anglo-Saxon language where it used to denote the verb „burn", i.e. the 12th century, in which the current term brand, actually denoted glimmer and brand marking. Concurrently, the semantic term brand, or the 'Croatianised' term „marka",

which is not the appropriate term to be used for the above terminology, as it does not comprise all the problematic issues, i.e. the scope of brand that the word encompasses in the English language, derives, at least in terms of etymology, from the Wild West cowboys who used to brand their cattle. As the term brand, in the older books on marketing, namely, according to the American Marketing Association, as well as according to Kotler (Kotler; 2006., 549) and Bennett (Bennett; 1995., 85), actually means name, term, sign, symbol or design, or their combination aimed at the identification of the goods or services of one producer, or a group of producers, and their distinction from the goods and services of the competitors. The definition of brand by the American Marketing Association dates back to the beginning of the 1960s. Nevertheless, it can still be found in numerous books on marketing, including the ones written by Croatian authors, although it is quite obsolete, and this paper will display the difference in mark vs. modern-day mark, i.e., brand terminology.

Theoretical propositions of mark and brand

The classic definition of mark can eventually be expanded by more contemporary concepts where it actually refers to a system of fundamental, visual, verbal and written features with the aim of identification and distinguishing of the product or service of one seller or supplier from the others. However, brand surpasses anything we can see, hear or touch; therefore, in the context of this statement we observe it as a phenomenon that behaves like a living organism, as in its definition it does not challenge the concept of the product, name, symbol or any other physical – contemplative characteristics. Thus, brand represents the quality of a company, the business management and communication within a company as well as interaction with the market. However, interaction with the brand itself gives rise to a series of emotional, rational, cultural and sociological images that bear association to the producer. When buying, buyers frequently do not purchase only the product, as was considered in the past, but its emotional significance as well, i.e. they buy a supplement for their unsatisfied needs. According to Pavlek (Pavlek; 2008. 92-94.) brand becomes the most valuable asset of a company and the assessment is that, nowadays, it accounts for an average of some 50 % of a company's balance structure in developed countries.

If we are to return to the very beginning and start with the product, then we may find that the history records the first signs of origin or authorship in Greco-Roman period and in China on the ceramic vessels. The ancient Romans placed symbols upon their stores, depending on the type of services they provided – a ham for a butchery and such. The noblemen and knights of the Middle Ages had done the same, so the analogy conveys the desire to distinguish and the

pride of the one who wares such symbols. This desire is in fact a desire for own identity. Gradually, such placement of symbols is given legislative formats in 19th century when the very first mark registration laws (trademark laws) are passed. These laws had a purpose: (1) to distinguish, identify; (2) of identity, owner and origin protection; (3) risk protection, that is fraud protection, of the consumer (Pavlek; 2008., 89).

The salesmen had then begun to mark their merchandise in order to increase product recognition and enhance diversification of different owner product. In this context, we find the term *mark* to be completely satisfactory. Later on, an immense budget and omnipresent media appearance, as well as the sheer emphasis on the product as the best, the strongest, the fastest and the most efficient one, were arguments enough to ensure the leverage in competition. Other producers began to offer the same and the superlatives proudly emphasized before became something that the user understands as given and, naturally, expects. Soon, all the producers began to add identity and character to their products, which led to mark value development.

The mark had then been considered principally as the means of identification of certain products or services that the producer or the owner guaranteed the promised performance or the so-called functional quality level (the structure, equipment, characteristics, usage, appearance, endurance and other).

The relation towards the mark and its creation was in accordance with the time and trends. In those days the term mark had been used to denote diversity, whereas nowadays the relation towards the term mark becomes dynamic to such extent that not even the many authors dealing with marketing manage to follow it (Pavlek; 2008., 120).

Presently, under the term mark one understands a number of significant qualifiers which include mark awareness, mark value, mark image, mark culture, mark attributes, mark strategy, mark expectations, mark management etc. (Mušura; 2009., 14). The term mark does not satisfy all these elements.

We may quote the American Marketing Association definition from the early 1960s, but which is still found in many contemporary marketing textbooks, and it is as follows: A mark represents a name, term, sign, symbol or design, or the combination of the aforementioned, with the purpose of merchandise or service identification of one producer or a group of producers and the differentiation of their merchandise and service from competition. That definition no longer satisfies the contemporary relations of consumer and modern-day mark. Such

an approach to mark definition mostly serves the purpose of differentiation, id est for identification and protection.

Brand is a promise, a belief

The modern-day mark represents a promise, a belief, and the consumers expect certain characteristics and uses from it. The designers of modern-day mark seal an unsigned contract with the consumers on its values. It represents a guarantee, trust, diminished risk and reputation, and we tend to imitate it, sometimes even identify with it, experience it, personify it, and create an entire collection in our minds (Pavlek; 2002., 94).

That is the reason why American Marketing Association definition may be considered static as a means of recognition, while modern-day life tells of the strategic desire to create specificity, mark superiority and value, identity creation and the relation towards the consumers, experience aspect and idea. In modern-day approach, mark is no longer considered as simply a result of the functional attributes, but of feelings, that is beliefs, as well.

Emotional relation, the way that the people sense mark, become the decisive element in its diversification and its significant value proposition. The higher the level of mark experience is, the higher the mark value because a circle of loyal followers gather around it. A step further from that classical marking is the idea behind which is the mark and its promise. Mark can no longer be simply a characteristic. In the context of the international communication, the term brand, as a code of understanding, denotes a mark accepted by the consumers, which they relate to on the basis of differential features and promises they must believe in, as well as it superiority or appropriateness for their lifestyle, status and purchasing power. Consequently, the marks become beliefs, ideas, the world which they relate to, and the term mark becomes brand. Nowadays, the distinction is clear. Trademark is a feature, and brand arises from the human mind as a mental map of associations and experiences. Also, it should be emphasized that the mark, that is trademark is to be viewed from producer aspect, whereas brand is to be viewed from the consumer aspect. Lately, the term brand is used in international communication as well in order to emphasize additional value superceding mark features. Mark is used more as a legal term (hallmark, sign, trace, imprint, product name), and it is present in numerous languages – German die Marke, Italian marca, French marque, and it originates from Greek marka, meaning a sign (Pavlek; 2008., 120).

Brands and emotions

The strength of a brand shifted from performance to trust, that is belief, and the buyers rewarded only those who have not sacrificed their trust in the name of profit. The true stars of today are only those brands that have managed to rise in the upper category and became emotional brands that the people like so much they would not change them for anything in the world. When the quality and functionality became expected categories, the innovative brands shifted their values from performance to emotions, experience and the relationship with the consumer. Brands are based on emotions and not on abilities (faster, more, stronger). They do not aim simply at the mind of the consumer, but their heart (Bilopavlović; 2008., 18).

Emotional component may be seen through loyalty the buyers in Croatia display towards the homemade brands after the global ones had entered our market. Many had expected that the homemade brands will loose the battle with stronger ones like Milka, Lindt, Nescafe, Knorr… but the consumers remained loyal to homemade brands that incite positive emotions in them for years on (Vranešević; 2008., 42).

We have to decide whether we want to treat out buyers as one night stands and risk the chance that we may never see them again, or as a lifelong companion worth the additional effort. Sometimes, it is enough to offer the buyers just a little more than what is expected to win them over for life (Bilopavlović; 2008., 19).

Brand value

A successful brand has faithful consumers, which in the end reflects on the sales value and the market value of the owner company (Antić et al.; 2008., 200). Today, the emphasis is on the creation of emotional relations which increases the mark value, so that the terms brand, branding and brand equity are ever more assumed in the international plain (Pavlek; 2008., 89).

Several studies attempted to evaluate the brand contribution to the company value. The Interbrand study for 2008 (see Table 1) from which one can conclude that the brand contributes more than a one third of the company value.

Table 1 Top 10 Global Brands

BEST GLOBAL BRANDS

2008 rankings

Contract All | Expand All | Print

2008 Rank	2007 Rank	Brand	Country of Origin	Sector	2008 Brand Value ($m)	Change in Brand Value
1	1	Coca-Cola	United States	Beverages	66,667	2%
2	3	IBM	United States	Computer Services	59,031	3%
3	2	Microsoft	United States	Computer Software	59,007	1%
4	4	GE	United States	Diversified	53,086	3%
5	5	NOKIA	Finland	Consumer Electronics	35,942	7%
6	6	TOYOTA	Japan	Automotive	34,050	6%
7	7	intel	United States	Computer Hardware	31,261	1%
8	8	McDonald's	United States	Restaurants	31,049	6%
9	9	Disney	United States	Media	29,251	0%
10	20	Google	United States	Internet Services	25,590	43%

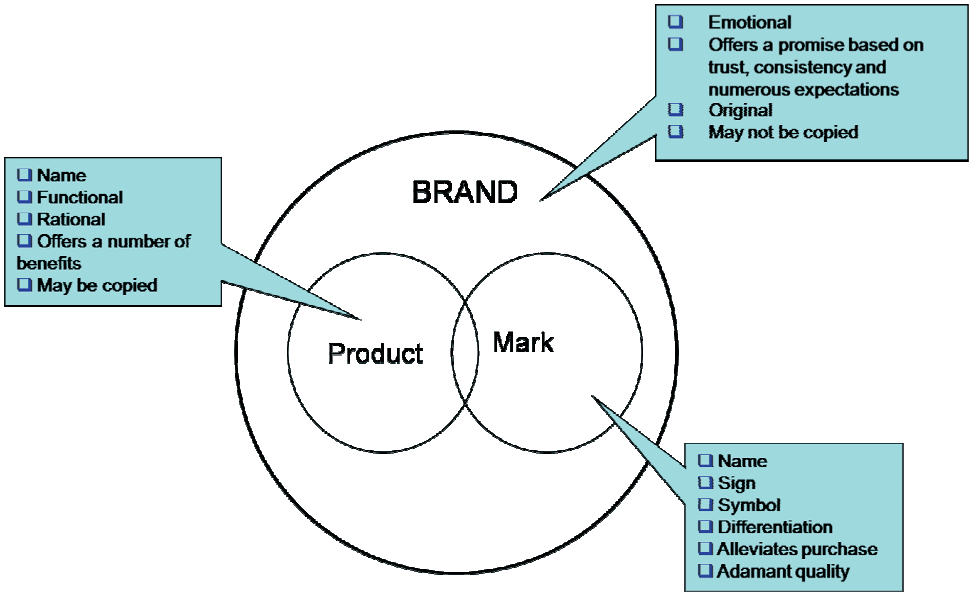
Source: http://www.interbrand.com/best_global_brands.aspx?langid=1000 (Accessed 19th of March 2009)

In the evaluation process, Interbrands viewed brands as the company's financial assets, attempting to evaluate the contribution of the brand to sales and profit, the stability of that contribution in the future and the future profit worth today. The criteria are rather strict. For instance, to enter the list of Top 100, each brand must realise at least one third of the entire profit outside the domicile country, must be recognized by buyers not using the product / service behind the brand, and the marketing and finance data must be public.

The various researches in brand value show the superiority of the brand over the mark, that is trademark, and its higher level, because no mark (name, design…) can measure to the emotions and belies that the brand offers. Consequently, Kotler cites that the brand value measure is the level up to which the clients are willing to pay more for the brand, which is backed by the

research results according to which 72 % of clients would pay 20 % higher price for their chosen brand (Kotler; 2006., 556). The higher price that may be added to a generic product because of the brand is justified exactly through rational and emotional additional value that the company employees and the clients feel due to brand (Vranešević; 2007., 11).

Picture 1 Product vs. Mark vs. Brand



Source: authors

Picture 1 depicts the basic brand features used in contemporary approach to mark definition, which expresses the dynamic relationship with the consumers, while mark (trademark) is related to the classical approach of feature identification.

As is shown in the Picture 1, brand is superior to mark. It contains all the elements of the mark, and more, with the presence of the emotional component that cannot be copied, because emotions are unique, original and with a promise, trust and consistency are offered based on the brand strength.
If we are to view the product, mark and brand from fraud aspect, then the significant brand characteristic in relation to product and mark is that in the eyes of the consumer, brand reflects a perception of originality and authenticity; that is, a brand cannot be copied, it is original and unique. Brand is the answer to the fact that the value the buyers seek is for the most part a combination of functional and psychological uses or features, often presupposed through

functional product features and psychological brand features (Vranešević; 2007., 12).

Instead of a conclusion

Brand is an experience is the mind of the buyer. Brand is a promise. Clearly, we are talking about terms no longer defined by the material, tangible values, such as quality, but emotions and perceptions, hope and belief.

The strongest brand in 2008 according to Interbrand is the untouchable, omnipresent Coca-Cola, which out of the 100 billion dollars of its market capital can thank its brand for the 67 billion. If we want to be mean, we will say that it is a combination of sugar and water sold 2000 times its value. In the Coca-Cola world, it is about being together, uniqueness, recognition, family, warmth and other social values and attitudes, which, realistically seen something that a fizzy drink could not produce – that is the current top brand of the world.

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MANAGEMENT OF INSTITUITIONS ON THE EXAMPLE OF STUDENT CENTRES

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Abstract:

Student centres in the Republic of Croatia act as non-profit public institutions whose founders are universities and polytechnics. Their activity is to organize food and accommodation, temporary and occasional employment of students, and cultural, sports and other activities.

They are not the state budget users nor are they financed by their universities founders either. The Ministry of Science supports students by subsidizing, but without defraying the expenses of the student centres activities. As non-profit organizations, everything that centres book as revenues, they should return into the activity again.

In accordance with the Act on Institutions, (National Gazette No 76/1993, 29/1997, 47/1999, and 35/2008) student centres are managed by Governing body, and the principal is the manager of the student centre. The Centre can also have Professional body that discusses and makes decisions about professional issues of the centre activity. Internal structure is established by the statute and the surveillance of student centres is conducted by the ministry in charge.

The main issue in management of student centres is the answer to the question; how, from the existing revenues, meet all the expenses necessary to easily conduct the activity, regarding the fact that the prices of food and accommodation for students and subsidies from the Ministry of Science, Education and Sport were established by the decision of the Ministry in 1994, and they have not been changed since.

Based on the conducted researches, we are of belief that it is possible to significantly improve student centres activity; primarily by introducing permanent mechanisms for automatic correction of food and accommodation prices correspondingly to life expenses, subsidizing from the national budget based on the number of students, improving food quality, ensuring transparent public tender procedures on determining the most suitable suppliers, and providing own additional resources.

JEL classification: J58, L31

Key words: students centres activity, student centres, management, administrative council, institutions.

1. Introduction

Within the public sector institutions appear as an organizational forms too. Establishment, branch, general acts and other issues of importance to the work of institutions are regulated by the Law on Institutions (National Gazette no. 76/1993, 29/1997, 47/1999 and 35/2008.) as lex generalis.
With this law there are special laws, lex specialis, for different areas, eg education, health...
Article discusses management of public institutions, within their student centers, as public institutions where the highlights role of public governance. Student centers, a public institution, serving the public interest and do not share the profits.
The paper used: methods of data collection (internal, external), methods of data processing (manual data processing, mechanical processing of the data), methods of analyzing the results (analysis, synthesis, induction, deduction method matches, compilation methods, mathematical - statistical methods).
So far in Croatia was not written about the theme of management institutions on the example of the student centers.

2. The legal regime of institutions in the Croatian law

Institution is a legal entity which is established to carry out continuous education, science, culture, media, sports, physical education, social welfare, health and other sectors if it is not earned income (Law on institutions). Important elements of such institutions are defined :
-it is a legal entity, established to permanently operate and is not established for profit.
Institution is establihing by the act of establishing, as it brings the founder, and it may be domestic and foreign, natural and legal persons. The team is determined by the act and its activities. Institution has a name that refers to its work.
The founders of institution normally are always a public-legal entities: the Republic of Croatia, the municipality, city, county (city of Zagreb), high schools...
The internal organization of institutions are regulated by the statute.
If institution, however, gains profit, then it is applied to commercial law regulations.

3. Management institute

Institution manages the Governing council or other common body. The Governing Council provides programs and institutions developement, supervised their execution, decides on the financial plan and annual balance

sheet, founder proposes a change of activity, given the founder and director of institution suggestions and opinions on certain issues and make decisions, and performs other duties specified by law, the act of founding and the statute of institution.

Head of institution is director, if the law is not otherwise provided.

Director organizes and manages the activities and business facilities, represent institution,take all legal actions for and on behalf of institution, represents institution in all proceedings before courts, administrative and other state bodies and legal persons with public powers.

Director is responsible for the legality of institution.

Director can not, without the special powers of the Governing council or the founders of the institution or organ which is by the founder appointed as the other contracting party, sign a contract in his name and his account in own name for the account of others, or for and on behalf of others.

Director leads a professional work of institution, and he is appointed and dismissed by the Governing council.

Professional work of institution leads a professional manager if so prescribed by law, the act establishing institution or by statute.

Institutions may have an Expert council or other common body professional institutions.Composition, establishment and operations of Expert councils institutions are set by regulations of the institution in accordance with the law and the act establishing the institution.

Expert Council discusses and decides on professional matters work facilities within the competencies established by law, act on the establishment and the statute of institution, gives the Governing Council, director and head of professional opinions and suggestions regarding the organization of work and conditions for development activities and other affairs of certain legislation, act on the establishment and the statute of the institution.

Institutions may have other oversight, technical and advisory bodies. Composition, mode of establishment, mandate and powers of these bodies shall be determined by the statute of the institution in accordance with the law and the act establishing the institution.

Management institution is based on public management.

Concept of public management, which refers to the public sector, means the partial restoration of the values associated with public sector and public interest - responsibility, equality, fairness and legality. Namely, rendering of accounts, control, response to the needs of students, transparency and participation, are important at least as matters of economy and efficiency (Perko Šeparović, I. 2006., Pp. 14 and 15.).

4. Student Centers in the Republic of Croatia as a non-profit public institutions

Student centers are established on the basis of the Law on Institutions and in accordance with the Law on Science and Higher Education Act (National Gazette no. 123/2003 and 46/2007.).
Constitutional rights of student centers have universities and schools. Internal structure, the way of management, financing and other issues of importance for the work of student centers regulated by the act of their establishment, and it established general acts (extract from the Statute of the student center). Centers are nonprofit organizations, and their accounting is established under the provisions of the Regulation on Accounting of non-profit organizations (National Gazette 10/2008.).
When determining non-profit organizations, there are three important assumptions:
The first assumption is that the legal persons are and work primarily with a purpose other than profit. The highlights here are not to avoid the creation of profit (in terms of the emergence of surplus income from all sources in relation to the costs of all forms) but the existence of predominantly purposes of public interest.
Another feature of non-profit organizations is that they are not allowed to share the realized net profit to third parties, which might due to its position affect the operation of the organization, in order to acquire personal benefits (this applies for example to the founders, members, officers, directors, agents, employees and other physical and legal entities closely associated with the already mentioned).
This prohibition is not extended to the benefits that can be achieved with the purpose of public interest, even when it is performed to third parties (as, for example, charitable donations to the poor).
The third assumption refers to the fact that the characteristics of non-profit organization does not necessarily depend on its legal form. In other words, the crucial importance of activity and purpose of the organization, not the character of its legal personality (Handbook on Laws for Civic Organizations Open Society Institute, International Center for-Profit Law, 1996. year).
So student centers relations with users of services set up without immediate market status, a student activity center is supported by the state. (Herner, Ž., Marinac, A., Osijek, 2007.)

5. Internal organization of student centers

Student centers are registered as a public institution for the complete and necessary care for students. Work is organized according to areas of student standards:

- students nutrition needs (student restaurants),
- student service (temporary and occasional employment of students),
- student accommodation (student hostels and private accommodation subsidy)
- organization of cultural, entertainment and sports content.

Based on the conduct of student activity centers generate revenues.

6. Managing Student Centers

Student centers, according to the Law on Institutions (National Gazette, no. 76/93, 29/97, 47/99 and 35/08) are managed by the Governing Council and leader of the student center, director.

Center may have Expert Council, which discusses and decides on professional matters of Center work. The internal organization is regulated by the statute, and the oversight of the student center by the Ministry.

Managing student centers is important from the aspect of managing their activities and thus their income and expenditures.

System management student centers is necessarily based on computer database.

6.1. Managing student nutrition needs

Managing student eating is a very sensitive issue, since the limited number of students have rights on meals. Namely the right to nutrition have just regular students. Map of the state budget intended for co-financing of nutrition is sufficient only for the food co-financing part of the students, not all students, even though all the regular students have a right to nutrition. Testing of students, we find that they would prefer to use canteen items (hamburger, hot dog, smoked meats products, milk, juices...).

However, these items are not allowed by Decision of the Ministry and they would significantly increase the number of student meals, and would cause breakthrough item in the State budget, which would student centers make deprived of the funds from the State budget, and that would create the debt to suppliers.

Due to providing and using services of students nutrition the Ministry and student centers sign the agreement.

Ministry gives support to the exact prescribed meals which make contribution to agreements as follows: - complete meal, for each meal there is a list of individual meals, standards for individual meals and the price of each individual meal, and prices for each individual meals are calculated on the basis of norms;

-list of other food products for which is approved grants of Ministry (simple food, milk products and drinks with individual prices);

-list of additional dishes with individual prices for which the Ministry approved grants.

Student centers are not allowed to allow users (students) to take out food from the student restaurant meals.
Student center is required to provide spatial, technical, computer-communications, sanitary and other requirements for preparing, dispensing and consuming meals during the academic year.
Student centers are allowed to issuing only the amount of meals that are consistent with the rights of users, which is regulated by the Ordinance of support to cover the costs of nutrition students (National Gazette no. 58/2001) and the applicable decisions of the Minister on the prices of food for students.
Student centers are obliged to offer to users (students) complete meals so that the average price during a month does not exceed 16.70 kuna.
For the realization of the price difference (margin) important is number of students who use their rights. If a small number of students used their rights for food, a student will not achieve central sufficient difference in price (spread) to settle the costs of operations.
If a large number of students used their rights for food, student center break clause in the state budget, which refers to the nutrition of students and is due to the loss.
We can conclude that for the positive management of student centers is substantial optimum number of students who will use their rights to the amount of the state. If it is in increasing student meal price above 17.60 kuna, student centers generate higher margin, but the students remain to withhold a certain number of meals during a month. Students who are not domicile for example, are entitled to 60 meals.

6.2. Managing student service

Income from fees for arranging the employment of regular students are charged only from an employer and used to improve student and student standards, and can not amount to more than 12% of net profit student (the Law on Labor exchange students).

6.3. Managing student accommodation

The total price of accommodation in student houses is 210.00 kuna per bed and found it still in 1993. year and was not changed until today. Of this amount a student pays 105.00 kuna, and the Ministry of Education and Sports, co-financed 105.00 kn. This price does not include overhead expenses (electricity, water, heating). We believe that the price of accommodation is unrealistic and therefore student centers that have the student's homes mainly in the sectors stated negative financial results of operations because they have not predicted other sources to cover the costs of the accommodation price. Student tenants

Ministry of Education and Sports subsidized accommodation with 147.00 kuna per month.

7. State of food and accommodation of students in some European countries

In Slovenia, the Law on Higher Education settled the status issues of student nutrition and student homes.
Student hostels are the institutions within the University (Maribor, Koper) and the independent Institute (Ljubljana), which establishes the state. Student hostels and restaurants are privately owned. Ministry for Education and Science issued the Law on subsidizing students.
Students, subsidized by Slovenian Ministry pay equivalent of 230 kn to 523 kn. Non-subsidized students pay the economic cost of 600 - 1200 kn Height meal subsidies for student meals from the budget funds is 75% reimbursement for nutrition for workers are determined by collective agreement.
Price single-bed room in Austria amounts to 140 euros, while the double-bed rooms cost 168 euros. The apartment with 2 rooms is 235 euros.
In Germany the average price of accommodation of students the amount of 278 euros per month.

8. Financing Student Centers

Financing activities of the student center is being realized from the following sources: income support for students from the Ministry of Education and Sports, revenues from the payment of students for food, income from student services, income from payments for student accommodation in student homes, donations, own revenues. Subsidizing student meals and accommodation of students from Ministry of Science, Education and Sports is supporting the students, while not funded business student centers. As a non-profit organization, the surplus income earned central student is used only for the development activities of the center, especially the user services of the Center. If realized, Center for the loss in business, it covers from the property of the Center, and founder of assets, all in a manner and under the terms of certain regulations for this type of activity (excerpt from the statute of the student center).

9. The main problem in the management of student centers

The question is whether a student centers can realize the difference in price from which to associated costs of procurement of food items, salary and material and other costs with the prices that are not changed so many years.

Price of complete meal (soup, main course, side-dish, salad, dessert) was found in the amount of 16.70 kn, of which the Ministry subsidizes 12.30 kuna or 73.65%, a student at the student's food fund pays an amount of 4.40 kn, or 26.35%.
The price of accommodation in student homes was found in the amount of 210.00 kn, of which the Ministry of subsidized 105.00 kn or 50.0%, while the student accommodation in the home paid 105.00 kuna.
We note that a student for 4.40 kuna get lunch, which consists of soup, bread, main dishes, supplements, salads and deserts.
The same student a night in a double room with heating and an unlimited amount of hot water and with free internet access, cleaning, maid and reception pays 3.5 kuna per day, or 105 kuna per month.
We can conclude that the Student centers are faced with losses mainly due to unrealistic prices for accommodation and meals.

10. Possibility of improving the management of the student centers

It is possible to achieve significant shifts in the business of student centers, and above all: the introduction of fixed correction mechanisms in the price of food and accommodation and to automatically according to the movement costs of living. Real price of student meals instead of 16.70 so far would be kn 22.00 kn, while the real price of student accommodation, instead of 210.00 kn would be 415.00 kn. Support this claim is the fact that overhead costs are significantly more expensive, especially electricity, water and heating.
The food items are also more expensive.
The number of student users of student nutrition should be kept in mind as a criterion for reimbursement from the State Budget.
In some student centers right on the nutrition benefits use more students than the planned subsidy in the State budget.
Due to the proximity of local schools by introducing students and high school student in certain centers, and insufficient provision of quality student nutrition, reduce the number of student users of student nutrition.
These student centers would certainly work on raising the quality of food to achieve a greater number of students used the right to nutrition.
Greater the difference in cost of student centers can achieve by transparent public procurement and at the selection of most favorable suppliers.
Student centers are insufficiently using possibility of additional sources of income (providing catering services, sale of food waste, photocopying, rental of the restaurant for various celebrations ...).
It is vital to better co-operation with the student center environment, as well as assurances that the conclusion of the contract with the student to work through student service cheaper than the classic work on the contract.

11. Conclusion

Management of public institutions is under great public attention. From the student center as a public institution it is expected a positive financial result. In achieving this objective, their administrations are often encountered in a variety of obstacles.

Given that their main activity the provision of student meals and accommodation of students, the prices of these services for many years have not changed, so that the centers may generate losses in business.

Positive bussiness of student centers is possible, but with corrections of price meals and accommodation, and how living costs vary.

Nutrition should also be subsidizing students from the State budget according to the number of students. Administration of student centers must certainly raise the quality of meal service. It is necessary to ensure transparent procedures in public procurement at the selection of most favorable suppliers.

It is also possible to raise the income of additional finding of the research and better cooperation with the environment especially in the area of student services.

It is necessary to base student centers system management on IT database.

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SOME LINKS BETWEEN GAME THEORY AND DECISION THEORY IN ECONOMICS

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Abstract

Certain optimal strategies based upon game theory are given in this paper. A decision-making function and a risk function are explained. Decision-making criteria are applied for determining best decision-making functions with respect to a specific criterion. Special attention is given to the minimax criterion.

JEL classification: C02, C71, D81,

Key words: saddle-point, minimax criterion, Bayesian criterion, loss function, risk function, decision-making function

Introduction

In making a decision or a choice it seems rational to choose an option which has mathematical expectation "which promises most ", i.e. to choose an option which minimizes the expected loss or maximizes the expected gain. Unfortunately, this simple approach to decision-making does not always function, since it is often very difficult to assign a numerical value either to a result or to probability of the outcome. This paper considers game theory and statistical games, and can be used as an introduction to decision theory.

1. Game theory

1.1 Zero-sum games

The game is said to be a zero-sum game when there is a conflict between players, and whatever one player loses in the game the other player wins. It is possible to consider non-zero-sum games for more than two players, but they go beyond the scope of this paper. In game theory it is assumed that while

selecting his/her strategy none of the players knows what the other player will do, noting that once the strategy is selected, it cannot be changed.
Games are classified according to the number of strategies available to every player. For example, if every player has to choose between two strategies, then it is going to be a 2×2 game. If one player has 4 options, and the other 5, then it will be a 4×5 or a 5×4 game.
In this paper we consider just those games in which every player has only finitely many options.

1.1.1 Notation

Let us denote two players by Player A and Player B.
Player A options will be denoted by I, II, III, etc.
Player B options will be denoted by 1, 2, 3, etc.
The game might be presented by a matrix, e.g. a 2×2 game might be presented as follows:

		Player A	
		I	II
Player B	1	$L(I,1)$	$L(II,1)$
	2	$L(I,2)$	$L(II,2)$

Matrix elements are called payoffs (i.e. loss for Player A and gain for Player B). Amounts $L(I,1)$, $L(II,1)$, $L(I,2)$ and $L(II,2)$ are loss function values of a certain game. $L(I,1)$ represents loss of Player A (and gain of Player B) when Player A chooses option I, and Player B chooses option 1, etc.
Game theory tries to find optimal strategies, i.e. the ones most profitable for every player, as well as a corresponding payoff or value of the game.

1.1.2 Saddle-point

A pair of strategies will be in balance if and only if element $L(a,b)$ corresponding to balance is at the same time the greatest in the column and the least in the row. Such strategy is called a saddle-point.
For example, a 3×3 matrix

		Player A		
		I	II	III
Player B	1	6	2	2
	2	4	3	5
	3	-3	1	0

has a saddle-point in the second row and the second column, but a 2×2 matrix

$$\begin{pmatrix} 2 & -2 \\ -2 & 2 \end{pmatrix}$$

does not have saddle-points.

1.1.3 Domination

In a payoff matrix one strategy (represented by a row or a column) dominates[14] over the other strategy if the choice of the first strategy is at least as good as the choice of the second strategy and in some cases even better. Player A will look for a lower loss, whereas Player B will look for a greater gain. The dominated strategy can always be rejected in the game.

For example, in a $(4' 3)$ game

		Player A			
		I	II	III	IV
Player B	1	2	0	1	4
	2	1	2	1	4
	3	4	1	3	2

Since Player A looks for a lower loss, strategy II dominates over strategy IV, since the loss of Player A will always be less if strategy II is selected and not strategy IV. Therefore, Player A will never choose strategy IV; hence, it can be rejected.

The game is reduced to a $3' 3$ game

		Player A		
		I	II	III
Player B	1	2	0	1
	2	1	2	1
	3	4	1	3

However, since Player B looks for a greater gain, strategy 3 now dominates over strategy 1, since the gain of Player B is always greater if strategy 3 is selected and not strategy 1. Thus, the game is reduced to a $3' 2$ game

		Player A		
		I	II	III
Player B	2	1	2	1
	3	4	1	3

[14] R.B.Myerson; (1997), p.26, Game Theory Analysis of Conflict, First Harvard University Press (paperback edition)

2. Statistical games

By observing social, physical and other phenomena, regulating laws or relations are called state of nature. The conclusion about the state of nature is reached on the basis of results obtained from a statistical experiment. Drawing a conclusion about the state of nature on the basis of experimental results is called statistical inference. A statistical inference problem can be considered a two-player game.

In statistical inference decisions on the population, such as expectation or variance of some property, are based upon sample data. Statistical inference might therefore be observed as a game between the Nature that controls relevant features of the population and a statistician who tries to make a decision on the population.

One way in which statistical games differ from game theory is that in game theory every player selects a strategy without knowing what the opponent will do. In a statistical game, a statistician has sample data which provide some information about the choice of nature.

The state of nature denoted by θ is unknown to a statistician. The set of all states of nature is denoted by Ω. A statistician will take some action **a** or make a decision **a** if he/she finds out that the state of nature is θ. The set of all actions or decisions is denoted by A. Prior to taking some action, a statistician conducts an experiment for the purpose of collecting data on the state of nature. Experiment outcome is a random variable whose probability law depends on an unknown parameter. If in one experiment a random variable C takes the value x, a statistician takes an action, i.e. makes a decision $a = d(x)$. Function $d(x)$ is called a decision-making function. By this function decision $a = d(x)$ is unambiguously assigned to every experiment outcome x.

Example 1.

A statistician is told that a coin is either normal or double-headed. A statistician cannot examine the coin but he/she can notice what comes up after tossing the coin. Then, a statistician should decide whether the coin is double-headed or not. If a statistician makes a wrong decision, he/she should pay a fee in the amount of 1 CU[15]. In case of a right decision there is no fee (or reward).

Ignoring the fact that a statistician observes one tossing, the problem can be considered as the following game

[15] CU - currency unit

Statistician

(Player A)

Nature (Player B)		a_1	a_2
	θ_1	0	1
	θ_2	1	0

where

$\theta_1 =$ "state of nature" is that the coin is double-headed

$\theta_2 =$ "state of nature" is that the coin is balanced

$a_1 =$ decision made by a statistician is that the coin is double-headed

$a_2 =$ decision made by a statistician is that the coin is balanced

However, a statistician knows what happened at tossing, i.e. a statistician knows whether a random variable X took the value $x = 0$ (heads) or $x = 1$ (tails). A statistician wants to use that information for making a choice between a_1 and a_2, so that the decision-making function determining which action to take in any of the cases is

$$d_1(x) = \begin{cases} a_1, \textit{when } x = 0 \\ a_2, \textit{when } x = 1 \end{cases},$$

i.e. $d_1(0) = a_1$ *and* $d_1(1) = a_2$.

The purpose of indices is to distinguish different functions. Other possible decision-making functions might be

$$d_2(0) = a_1 \text{ and } d_2(1) = a_1$$

i.e., always choose a_1 regardless of the experiment outcome,

$$\textit{or } d_3(0) = a_2 \textit{ and } d_3(1) = a_2$$
$$\textit{or } d_4(0) = a_2 \textit{ and } d_4(1) = a_1$$

The following table gives corresponding values of the loss function

		Statistician	
		a_1	a_2
Nature	θ_1	$L(a_1,\theta_1)$	$L(a_2,\theta_1)$
	θ_2	$L(a_1,\theta_2)$	$L(a_2,\theta_2)$

One option is to select a_1 when $x=0$ and a_2 when $x=1$, which might be expressed as

$$R(d_1,\theta_j)=E\left[L\left(d_1(x),\theta_j\right)\right],$$

whereby $\left[L\left(d_1(x),\theta_j\right)\right]$ is a loss function in case of the decision $d_1(x)$ and Nature strategy θ_j.

Expectation is calculated with respect to a random variable x and

with θ_1 $\quad P(x=0)=1$

$\quad P(x=1)=0$

with θ_2 $\quad P(x=0)=1/2$

$\quad P(x=1)=1/2$

The aforementioned gives

$$\begin{aligned}
R(d_1,\theta_1)&=1\,L(a_1,\theta_1)+0\,L(a_2,\theta_1) &&=1\cdot 0+0\cdot 1 &&=0\\
R(d_1,\theta_2)&=1/2\,L(a_1,\theta_2)+1/2\,L(a_2,\theta_2) &&=1/2\cdot 0+1/2\cdot 0 &&=1/2\\
R(d_2,\theta_1)&=1\,L(a_1,\theta_1)+0\,L(a_1,\theta_1) &&=1\cdot 0+0\cdot 0 &&=0\\
R(d_2,\theta_2)&=1/2\,L(a_1,\theta_2)+1/2\,L(a_1,\theta_2) &&=1/2\cdot 1+1/2\cdot 1 &&=1\\
R(d_3,\theta_1)&=1\,L(a_2,\theta_1)+0\,L(a_2,\theta_1) &&=1\cdot 1+0\cdot 1 &&=1\\
R(d_3,\theta_2)&=1/2\,L(a_2,\theta_2)+1/2\,L(a_2,\theta_2) &&=1/2\cdot 0+1/2\cdot 0 &&=0\\
R(d_4,\theta_1)&=1\,L(a_2,\theta_1)+0\,L(a_1,\theta_1) &&=1\cdot 1+0\cdot 0 &&=1\\
R(d_4,\theta_2)&=1/2\,L(a_2,\theta_2)+1/2\,L(a_1,\theta_2) &&=1/2\cdot 0+1/2\cdot 1 &&=1/2
\end{aligned}$$

Let us note that a 4×2 game is a zero-sum game for two players where payoffs are equal to corresponding values of the risk function.

Nature	Statistician d_1	d_2	d_3	d_4
θ_1	0	1	1	
θ_2	1	0	1/2	

Note that d_1 dominates over d_2, and d_3 dominates over d_4, so that d_2 and d_4 can be rejected.
The game is reduced to a 2×2 zero-sum game for two players.

Nature	Statistician d_1	d_3	
θ_1	0	1	
θ_2	1/2	0	

An optimal strategy for a statistician is with probabilities $2/3$ and $1/3$ for d_1 and d_3, respectively.

3. Decision-making criteria

Generally speaking, it is possible to find the best decision-making function only with respect to some criteria. In the sequel we will consider two criteria.

Minimax criterion

According to the minimax criterion, a decision-making function is chosen for which $R(d,\theta)$, maximized by θ, is minimal.
If we apply the minimax criterion to the example from Section 2 with d_2 and d_4, maximal risk for d_1 is $1/2$, and for d_3 it is 1. Thus, d_1 minimizes maximal risk.

Bayesian criterion

If Q is observed as a random variable, in accordance with the Bayesian criterion, a decision-making function is chosen for which $E\left[R(d,\theta)\right]$ is minimal, where expectation is calculated with respect to Q. For the criterion it is necessary to consider Q as a random variable with the given distribution.

Application of the Bayesian criterion to the example from Section 2 requires probabilities to be assigned to strategies of the Nature θ_1 and θ_2. If $P(\theta_1) = p$ and $P(\theta_2) = 1- p$, then the Bayes risk is for

$$d_1 = 0 \cdot p + 1/2(1-p) = 1/2(1-p)$$
$$d_3 = 1 \cdot p + 0(1-p) = p.$$

When $p > 1/3$, Bayes risk as to d_1 is less than Bayes risk for d_3, so that d_1 is preferred over d_3.

When $p < 1/3$, Bayes risk as to d_3 is less than Bayes risk for d_1, so that d_3 is preferred over d_1.

When $p = 1/3$, both Bayesian criteria are equal and any d_1 and d_3 can be chosen.

The aforementioned can be improved such that the problem is translated to the basic set $\leftrightarrow$ sample, so that decision-making is of the form:

a) A set of all possible values is defined that can be taken by Q in the problem under consideration. This set is denoted by Ω and it is called parameter space.
b) A set of all possible actions or decisions is defined, which can be reached in the problem under consideration. This set is called action space or decision space and it is denoted by A.
c) We define function

$$a = d(x_1, x_2, ..., x_n)$$

of a random sample $x_1, x_2, ...x_n$, which is called a decision-making function.. A set of values of this function is action space A. This means that a statistician takes an action a, if for the realized value of the sample $x_1, x_2, ...x_n$ he/she has obtained $a = d(x_1, x_2, ..., x_n)$.

Example 2. Let $f(x;Q)$ be the Gaussian probability distribution law[16]

$$f(x;Q) = \frac{1}{\sqrt{2\pi}} e^{-\frac{(x-\Theta)^2}{2}}, -\infty < x < +\infty,$$

where Q is any real number.
Parameter space Q is a set of real numbers

$$\Omega = \{Q½ \infty < Q < +\infty\}.$$

[16] Sarapa, N.; (1988), p.265, Teorija vjerojatnosti., Zagreb, Školska knjiga, UDK 519.21(075.8)

If for different values of Q we take different actions, the set of actions A is also a set of real numbers

$$A = \{a \mid -\infty < a < +\infty\}.$$

For a decision-making function we can take any function of the random sample $x_1, x_2, ...x_n$ taken from this normal arrangement. For example, we can take the arithmetic mean[17] of the sample

$$d(x_1, x_2, ...x_n) = \frac{1}{n}\sum_{i=1}^{n} x_i.$$

For the realization of sample $x_1, x_2, ...x_n$ we obtain

$$a = d(x_1, x_2, ...x_n) = \frac{1}{n}\sum_{i=1}^{n} x_i.$$

Loss function

In the game against the nature, a statistician will have gain or loss, depending on the action taken i.e. decision made. Since the action

Table 1:

	possible actions	
	a_1	a_2
states of nature Θ_1	0	10
Θ_2	10	0

In order to find something out about the state of nature, a statistician conducts an experiment whose outcomes are values of a random variable x. Let a random variable X take the value $x = 0$ in case of heads, and the value $x = 1$ in case of tails. In order to use the information obtained through the experiment, a statistician must define all possible decision-making functions.

[17] Crnjac D., Crnjac M.; (2004), Nejednakosti, razlike i odnosi među nekim statističkim sredinama, Zbirka radova XIII., Dane Kordić, Frano Ljubić, Ivan Pavlović, Brano Markić, Ante Markotić, Dražena Tomić, Sanja Bijakšić(ur), pp.171-186, UDK 33 (06.055.2), Ekonomski fakultet u Mostaru, Sveučilište u Mostaru

One possibility is to take action a_1 when $x = 0$ and action a_2, when $x = 1$, that defines the decision-making function

$$d_1(x) = \begin{cases} a_1, \ when \ x = 0, \\ a_2, \ when \ x = 1, \end{cases}$$

whose values are $d_1(0) = \mathrm{a}_1 \ and \ d_1(1) = \mathrm{a}_2$.

The other possibility is to take action a_1 in both cases, so that the decision-making function is

$$d_2(x) = \begin{cases} a_1, \ when \ x = 0, \\ a_1, \ when \ x = 1, \end{cases}$$

with values $d_2(0) = a_1 \ when \ d_2(1) = a_1$.

It is possible to define two more decision-making functions

$$d_3(x) = \begin{cases} a_2, \ when \ x = 0, \\ a_2, \ when \ x = 1, \end{cases}$$

whose values are $d_3(0) = a_2 \ and \ d_3(1) = a_2, \ and$

$$d_4(x) = \begin{cases} a_2, \ when \ x = 0, \\ a_1, \ when \ x = 1, \end{cases}$$

with values $d_4(0) = a_2 \ and \ d_4(1) = a_1$.

As it can be seen, the decision-making function assigns one action to every value of a random variable x. Since we have two values of a random variable x, i.e. $0 \ and \ 1$, and two possible actions a_1 and a_2, there are $2^2 = 4$ decision-making functions that are previously denoted by $d_1(x), \ d_2(x), d_3(x) \ and \ d_4(x)$. Values of these functions can be represented by Table 2.

Table 2:

	d_1	d_2	d_3	d_4
x 0	a_1	a_1	a_2	a_2
x 1	a_2	a_1	a_2	a_1

Choice of the loss function $L(a,\mathrm{Q})$ depends on the nature of the problem under consideration. In problems referring to statistical evaluation, a loss function is taken to be of the form

$$L(a,\mathrm{Q}) = (a - \mathrm{Q})^2,$$

and it is called a quadratic loss error[18]. In problems referring to testing statistical hypotheses of loss functions, function

$$L(a,\mathrm{Q}) = \begin{cases} 0, \text{ if a right decision has been made,} \\ 1, \text{ if a wrong decision has been made} \end{cases}$$

Conclusion

Some optimal strategies, i.e. decision-making functions, are given in this paper. Decision-making criteria as well as criteria for optimizing decision-making functions are also given with respect to some criteria, and certain improvements are made.

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NEW APPROACHES TO THE MODERN RETAIL MANAGEMENT

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Abstract

A concentrational retail development has effectuated further changes in its structure and, accordingly, the changes in the retail economic entity management. In that respect, altered is also a heretofore retail marketing paradigm, as the assortment formation, based upon category management and other vertical marketing types, becomes preponderant. On the other hand, in addition to the cognizance of developmental legalities of the new business unit types, new technologies, and human resources, the knowledge of retail-oriented buyer interconnection modalities becomes ever so pronounced in the new circumstances. Of course, it is harmonized with the newest marketing development phase, based upon an orientation toward buyers and processes.
Such an approach is in a direct function of creation of presuppositions for the achievement of a more efficacious and effective eceonomic growth and development in the reatil sector.

JEL classification: L81, M31,

Keywords: retail sale, management, category management, marketing, Republic of Croatia

1. Introduction

This paper provides for a short retrospection to the modern trends in a retail-company management. The purpose of the paper would be to provide for a basis for further research in the corporate retail management in the Republic of Croatia in the modern circumstances of large foreign retail chains' penetration into the Croatian market.

2. From marketing to the commercial corporate management

Up to the 1980s, it was interesting to discuss the emancipation of a store-oriented marketing with regard to that of a producer, as well as an individual store marketing (Theis;1999,30–42). However, many scientific papers on commercial business transactions, i.e., on commercial management, have been already recorded nowadays (Foscht et al.;2008,22). The formation of small-sized but transportationally strong commercial concerns and consolidational tendencies (of the small-sized toward the large-sized stores) has significantly modified reatil

structure. Modern commercial management is being developed in these circumstances.

Namely, it has been perennially emphasized that the knowledge of commerce gains its importance, and an increasing power of commercial companies in a distributional process between production and consumption is adduced as a reason for this phenomenon (Rudolph;2005,9).
In that respect, H. Liebmann has paid his attention while focusing on the purchaser-oriented benefit as a key task in commercial management already in 1988 (Foscht et al.;2008,22). This is in conformity with the newest phase in the post-1980 marketing development (characterized by a special market orientation).
It is therefore emphasized that the most significant strategic mistakes in many contemporary commercial companies consist not of an ignorance of business units' formal developmental legality, new technologies, and personnel and other cooperants cognizance but of a knowledge how to be interconnected with the reatil customers, related to a retail business unit's location.
Thus, the very commercial marketing is nowadays more an abstract model, for essential is the assortment formation, related to an increased category management (CM) program and other vertical marketing forms' introduction. It pertains to the large-sized commercial companies and their cooperation with the suppliers.
On the other hand, it has been established already in the 1980s that an enforced orientation toward customers may prove successful only if the realistic logistics solutions are found, e.g., a supply-chain management (SCM). In that respect, one should emphasize that nowadays the just-in-time (JIT) strategies gained significance in commerce as well, and vertical cooperation emerges as a supposition of reengineering. This pertains to the optimization of partnership concerning a creation of values between commerce and industry.
Based upon contemporary practice favoring customers and logistics, new concepts have been developed in retail business with regard to the participants' cooperation within a distribution channel. These new concepts are predominantly an efficient consumer response (ECR), quick response (QR), continuous replenishment (CR) and the aforementioned category management (CM). In this correlation, we may accept that a just-in-time (JIT) orientation has determined the first generation of modern retail logistics, while an orientation toward the creation of value chains has provided for the second commercial logistics generation.
Naturally, a confrontation between various strategic issues within a commercial company has been intensified by an increasing size of many commercial retail companies. One may differentiate between the strategic business units (especially regarding the product categories and store lines, i.e., the business unit types) in the commercial retail companies as well, what improves an excogitation of portfilio theory, so that the forms for the strategic planning phases, strictly connected to a general phase planning form, have been developed. Based upon these

excogitations, the contributions to a commercial retail company's strategic planning have also been created.

3. Various theoretical approaches to a commercial comapany´s strategy

One may analyze the following as strategic decisions ina commercial company (Müller-Hagedorn&Toporowski;2007,49–51): a) selection of a business unit type; b) internationalization-related decisions; c) diversification direction and scope; d) scope of cooperation between commerce and industry; e) decisions on the formation of central resources, especially the IT and logistics systems, as well as on the formation of informational structures, predominantly related to centralization and decentralization.

According to some sources, the contributions related to the business units' type selection pertain to the concrete business units, e.g., to discounting, department stores, etc., or to their combination, i.e., to the multichannel systems, according to other authors. In the center of attention are frequently the theories that explicate the consumer purchase site selection. Provided hereby are economic models. In any case, dominant are the setups based on an attitudinal theory, emanating from the fact that a consumer selects a business unit type based upon his or her attitudes.

Finally, the theoretical approaches, based upon an access to emotions, are also being applied in addition to the exclusively cognitively-oriented models. In this context, an orientation to an experience as a strategic concept has gained its importance.

In the discussions on the internationalization of distributive commerce business activities, one may predominantly find the application of general attitudes pertaining to distributive commerce, theming both the basic internationalization decisions and internationalization types. Hereby, a series of theories have been interpolated. A supposition based on resources and a new institutional economics gains special importance herein.

When debating over the distributive commerce internationalization, especially great attention is paid to the issue of market penetration type and thus to the issue of coordination between the domestic and foreign activities. How much the theoretical suppositions may explain certain developmental internationalization trends is equally critically tested. Additionally, themed are also the decisions pertaining to the target countries' selection, market entrance time selection, as well as the issue whether a market-political toolbox should be standardized or differentiated.

Empirically, an approach to the commerce involves both the companies that limit their service offer to a single unique business unit form and the companies that encompass a spectrum of business unit types or even expand their activities to other vocations and economic activities. An issue of concentration or entrepreneurial activity diversification stands behind this decision.

Namely, both the companies that concentrate their activity on a single business unit type and the concerns with multiple business unit types exist in commerce. They can be direceted to one or more vocations, can be exclusively stationary or nonstationary, or can incorporate both commerce types and be affiliated with only a wholesale or a retail level or with both tiers.

A theisis that rationalization possibilities can be detected via economic cross-level cooperation effectuates the fact that commercial companies increasingly have to deal with the issue how important is a strict coordination or even cooperation with the upstream-located productional levels. The concepts such as the aforesaid efficient consumer response (ECR), category management (CM), or the so-called "collaborative planning, forecasting, and replenishment" (CPFR) exist in practice as a visible result of such debates. They are an instant follow-up to the question of how useful is a coordination of various functional areas, especially marketing and logistics. Both hypotheses—a crossing of economic levels and crossing the boundaries of individual business functions within a company—are reflected exactly in the supply chain management (SCM) concept, whereby this concept should not be solely reduced to the physical distribution tasks.

Approximately ever since 1994, the efficient consumer response (ECR) idea has initiated many activities between commerce and industry. According to the ECR idea, efficacy may be increased if certain cooperation between industry and commerce is effectuated while planning the market-political instruments. Collaborative planning, forecasting, and replenishment (CPFR) presents a setup whereby commercial and production companies are cooperating in order to develop planning and prognostic data pertaining to the demand for the products sold by these companies. The jointly retrieved data are fisrtly used to modify the product stocks at the terminal point of sale (POS) within a store as to avoid the out-of-stock (OOS) cases, provided that it is economically justified, as well as to optimize the entire supply chain. A basis for CPFR is provided by data interchange between participating companies, whereby historical data (sales amounts) and specially processed plan data are especially relevant.

Within the efficient consumer response (ECR), category management (CM) is also being developed, whereby the assortment should be divided in categories that correspond to the consumer desires and needs, and correspondent strategies and tacticts should be developed for these categories. Hereby, category is defined as a "group of products that can be extracted and managed individually … and is recognized as different and/or replacable by the consumers in the satisfaction of their needs." (Müller-Hagedorn&Toporowski;2007,50) The handling of formed product categories is located into one process scheme, the CM process, which also involves the creation of strategies and tactics, as well as an introduction of a procedure-control plan, in addition to a category analysis. An ECR idea, i.e., a CM idea, was later transferred to certain market-

political and marketing instruments, e.g., to the sales improvement, commercial branding, or price strategy.
We may purport that efficient consumer response (ECR) and collaborative planning, forecasting, and replenishment (CPFR) imply an interconnection between marketing and commercial logistics. The decisions within these conceptions relate to the construction of warehouse network, structural conditions of a warehouse or a transit terminal, and current operations, whereby prognoses, orders, stocks and processes are lead. Of course, efficient logistics gains its significance for a commercial company predominantly due to a competitive pressure. In order to raise efficiency, certain value-creative stages are interconnected. Hereby, one should emphasize the creation of an integrated supply management, creation of adjusted warehouse structures, vendor managing inventory (VDI), as well as standardization and automation of further data transfer, up to the concentrated commerce and industry procedures for the application of product-oriented radio frequency identification (RFID) technology as a consequence of an integrated supply chain managemnt (SCM). Through a narrower collaboration between individual value-creative stages, a debate on the creation of certain supply condition system is reopened.

4. New distribution channel forms

In addition to the "classical" distribution channel types, it has been opined that some new forms, especially in the consumables sector, have been recently developed, based upon the adduced new managemental conceptions. Thus, with regard to the new managemental conceptions, one should again mention the new distribution channel forms:

(a) the appearance of new commerce centers, e.g., factory outlet centers (FOC);
(b) a quick response (QR) concept;
(c) an efficinet consumer response (ECR) concept;
(d) e-retail within e-commerce (Ehrmann;2003,466–467).

As a rule, the FOCs are created by virtue of multiple producers' collaboration. Their commodities are oferred without the stores involved. Frequently, arranged is an "experience purchase." The buyers should be attracted by catering facilities, motion picture theaters, natatoriums or ceratin entertaining performances.
The QR system was developed in the US as a strategy concept as to shorten the the current time in an overall logistics channel (supply chain). It can be defined as a "partner delivery system harmonized with demand of all companies participating in a logistics channel, based upon constant data interchange" (Ehrmann;2003,467). Known are the QR system in the textile industry. They pertain to data interchange systems that cross the boundaries of a company and

effectuate a pronounced reaction and delivery time reduction. The concept can be observed as a specific just-in-time (JIT) retail delivery type .
Although the ECR concept was introduced already in 1992, there is no unified definition thereof so far. One should emphasize that ECR is practically predominantly concentrated on retail sale and wholesale, i.e., almost exclusively on consumables.
The ECR concept actually represents a follow-up to the QR concept and can be translated as a "successful reaction to consumer demand." As a strategic concept of an interorganizational collaboration between producers, wholesalers, and retailers within a distribution channel, ECR is especially significant, for the objective of an increase in the market-change reactional capacity, i.e., a reaction to customer desires, should be achieved through an integrated management at the level of an overall supply chain, while simultaneously optimizing the costs and effects in the commodity assortment, supply, stocks and advertising areas and introducing the products into an overall distribution channel. In that respect, the ECR setup is based on a CM idea regarding a supply-oriented management and SCM, i.e., on an interorganizational supply-oriented logistics chain management.

In any case, ECR may be also observed as an expression of SCM in the consumables niche. In SCM, the cooperation beween companies is also extended both to the supply and to the demand side, so that marketing, product, and logistics are being controlled. A data warehouse and the aforementioned CM are of special importance for the introduction of ECR, and thereby the observation of a supply chain from a marketing point of view as well (Zschom;2004).
This means that consumer behavior while purchasing serves as an impuls to the production and logistics processes. Thus, an overall observation presupposes that collaboration of all distributional degrees is necessary for the realization of ECR as to optimize merchandise and information flows. A fundament for corporate cooperation is a rapid electronic data interchange (EDI).
The ECR is a method for an efficacious value chain formation focused on a consumer-oriented benefit (Corsten&Pötzl;2004,7). A value chain is an analytical strategic planning toolset (Porter) and was increasingly applied in many marketing-based papers, expenditure calculations, controlling and strategic management (Schmickler&Rudolph;2002,19).
E-commerce could be opined of as a further developmental stage of parcel trade. It is essential that the overall supply, marketing, promotion, customer service and payment processes are supported by the Internet technology. Commodity delivery is complemented by complete services.

5. Some remarks on the situation in the Republic of Croatia

In the Republic of Croatia, the concentrational processes in retail sale were initiated not sooner than on the occasion of an accelerated entrance of the large-sized foreign retail chains after 1998. Thus, the problems are nowadays existent in Croatia especially in the relations between domestic producers and the large foreign retail chains (Segetlija;2006,1324). The proposals for the development of cooperation between domestic retail companies and domestic production are therefore important as a strategy to increase their competitiveness. Equally, partner relations with foreign suppliers are also being proposed for the enforcement of competition of Croatian retail companies and for a successful CM implementation. Therefore, both partnership (with production) and cooperation within the overall value chain are pronounced for the development of the Croatian retail sale.

6. Conclusive thoughts

Concentrational processes in economy have also effectuated further changes in marketing, so that an individualized commercial marketing is already an obsolete category, because various forms of partnerships and cooperation between commercial and productional companies are being developed, including the entire supply chains. In these conditions, new management concepts pertaining to the large-sized commercial companies, where both the marketing and logistics elements are equally important, have been created out of an individual commercial marketing.

Therein, the Croatian companies and retail commerce groups should use the benefits and advantages brought by partnerships and cooperations with both the productional and commercial companies on the international market.

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ORGANIZATION AND APPLICATION OF INFORMATION TECHNOLOGIES IN ENTERPRISES OF HERZEGOVINA REGION

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Abstract

Rapid development of information technologies has had a big influence on global economy and has activated the series of changes such as: globalization, liberalization, concurrency growth, market expansion, availability of market information to all segments etc. Also, the significance of the Information itself has become larger since information technologies are making the process of gathering, processing, storing and distributing of data much easier with the primary goal of possessing the right information at the right time and at the right place in the organization with minimization of costs. The achievement of this goal is leading to improvement in all segments of business activity such as: research and development of new products, process of supply, supply management, accounting and finance, marketing, sales, control, communication and decision making.

Application of information technologies in the modern business does not only include buying and owning PCs in the company, but also a presence of high quality organization and utilization of information technologies which is a guarantee for successful and competitive existence in the market. What kind of information system should be implemented is dependant on the company size, amount of information and data it operates with, the type of business, future plans etc.
The objective of this research is to get the picture of level of enterprise informatization in Herzegovina with respect to amount and manner of information technology utilization. From these goals, the following hypotheses were set:

H1 – information technologies are insufficiently used and are not appropriately organized in the companies of Herzegovina region

H2 – there are substantial differences in utilization and organization of information technologies in the enterprises of Herzegovina region regarding their size

This paper will present the research based on the original questionnaire from the project named "Research and need analysis for training and consultative services for small and medium enterprises in the Herzegovina region" which was carried out by the authors for the Herzegovina regional development agency. The research was conducted in the end of year 2008 and in the beginning of 2009 and it comprised 105 enterprises from the Herzegovina region which spans over Federation of Bosnia and Herzegovina and Republic of Srpska. The size of

the enterprise (micro, small, medium and large) was defined through a two-dimensional criteria including two variables: number of employees and total income.
The research is expected to confirm the hypothesis and create the foundation for undertaking the appropriate actions in order to change the current, unsatisfying situation.

JEL classification: D83, G14,

Keywords: Information technologies, organization, enterprise, Herzegovina

1. Introduction

Rapid development of information technologies has had a big influence on global economy and has activated the series of changes such as: globalization, liberalization, concurrency growth, market expansion, availability of market information etc. Also, the significance of the Information itself has become larger since information technologies are making the process of gathering, processing, storing and distributing of data much easier with the primary goal of possessing the right information at the right time and at the right place in the organization with minimization of costs. The achievement of this goal is leading to improvement in all segments of business activity such as: research and development of new products, process of supply, supply management, accounting and finance, marketing, control, communication and decision making.
The level of application of information technologies on strategic, tactical and operational layers of enterprise's management hierarchy is having increased influence, along with some other factors, in determination of quality of competitive ability of business systems. (Markić; 2002, 19). However, information technology is just the potential that should be fulfilled with right work organization, direction and involvement of all employees. (Vajić et al.; 1994, 250). Application of information technologies in the modern business does not only include buying and owning PCs in the company, but also a presence of high quality organization and utilization of information technologies which is a guarantee for successful and competitive existence in the market. What kind of information system should be implemented is dependant on the company size, amount of information and data it operates with, the type of business, future plans etc.

2. Research Methodology

2.1. Establishment of hypothesis

From the previously mentioned field of interest, the goal of this research was derived and it could be stated as learning about organization, application and

usability of information technologies in the enterprises of the Herzegovina region (Klepić et al.; 2009). Also, there is the question of difference in utilization of information technologies in the enterprises regarding their size.
According to stated goals, the following hypotheses were set:

H1 – information technologies are insufficiently used and are not appropriately organized in the companies of Herzegovina region

H2 – there are substantial differences in utilization and organization of information technologies in the enterprises of Herzegovina region regarding their size

2.2. Scope of research and methods of data collection

This paper will present the research based on the original questionnaire from the project named "Research and need analysis for training and consultative services for small and medium enterprises of Herzegovina region" which was carried out by the authors for the Herzegovina regional development agency.
The research was conducted in the end of year 2008 and in the beginning of 2009 and it comprised 105 enterprises from the Herzegovina region which spans over Federation of Bosnia and Herzegovina and Republic of Srpska. The size of the enterprise (micro, small, medium and large) was defined through a two-dimensional criteria including two variables: number of employees and total income which are defined by Federal Law of encouraging development of small enterprise (Law on encouraging development of small enterprise).

2.3. Model of data processing

The questionnaire included yes/no questions and multiple choice questions containing answers concerning the level of application, possession and organization of information technologies. All the collected answers were observed in two ways: in aggregate and separately for every group of enterprises (micro, small, medium and large). Data were technically and statistically processed using Microsoft Excel.

3. Research Results

3.1. Basic characteristics of observed enterprises

The results analysis of empirical research of basic characteristic of the enterprises in the region, demonstrated following results:

- High percentage of observed enterprises were established in the last decade – from the year 2000 and there are 40% of them. 24% of them were established during the civil war (1990-1995) and 14% were established up to the year 1989.

- Most of these enterprises are stating their primary activity as retail/wholesale trade (27,62%). 17,14% of them are into different processing industries, 11,43% are in construction industry. Business services, agriculture and hunting and forestry have the same percentage of 5,71%.
- 96% of observed enterprises are under private ownership, 2% is under public ownership and 1% is belonging to mixed ownership as well as to joint ownership.
- 82% of the enterprises is run by national owners, 8% of them have foreign owners, while 10% of the enterprises have mixed owner structure.
- Most of the enterprises (70,48%) of Herzegovina region are organized as limited liability companies (LLC). 9,52% of them are registered as handicraft business, 8,57% are corporations, 4,76% are sole proprietors with independent retail shops, and other 1,90% are divided among private catering shops and restaurants, cooperatives and other forms of organizing.
- Big part of the investigated enterprises are employing 1 to 9 employees (47,12%). 29,81% of them are employing 10 to 49 employees, 18,27% hire from 50 to 249 employees and 4,81% hire over 250 employees.
- High percentage of observed enterprises are making up to 400.000 BAM in revenue, 28% of them are making between 400.000 BAM and 4.000.000 BAM in revenue, 25% of them are making from 4.000.000 BAM to 40.000.000 BAM, while 6% are making over 40.000.000 BAM in revenue.

Using the given criteria (number of employees and total revenue) the classification of observed enterprises of Herzegovina region has been done (The Law on encouraging development of small enterprise*).* According to the research results, 41% of the observed enterprises can be categorized as micro enterprises, 28% are small, 24% are medium and 7% of them are large enterprises.

3.2. Organization and application of information technologies in enterprises of Herzegovina Region

The companies that are active in complex, unpredictable and heterogeneous environment and which are faced with extremely strong competitors in this era of globalization have to base their business on highly sophisticated technologies. Organization and utilization of information technologies and resources is highly important for their operations so the research tried to gain some knowledge about the level of computer equipment and it's utilization in everyday business at observed enterprises.

According to the acquired results 31,3% of the enterprises made purchase of some IT equipment in the last month. 29,3% of the enterprises made such purchase in the last half year (6 months), 20,2% of them did it during the last year, while 19,2% of them made their last purchase over one year ago (15,2% from one year to three years and 4% over three years ago).

Table 1. The time of the last purchase of IT equipment

Last purchase	**Micro**	**Small**	**Medium**	**Large**
during the last month	21,05%	13,79%	56%	71,43%
during the last 6 months	26,32%	34,48%	28%	28,57%
during the last year	21,05%	27,59%	16%	0%
between one and three years	23,69%	20,69%	0%	0%
over three years	7,89%	3,45%	0%	0%
Total	100%	100%	100%	100%

Source: Author's calculation

Obtained data demonstrated in Table 1. are pointing to the fact that bigger enterprises are more frequent than smaller ones in their IT purchase, which is very important because of the high speed of IT development.

Computers should be connected with network in the modern information systems for their faster and more efficient work, but also for the purpose of lowering the costs. Obtained results show that 67% of the computers inside the enterprises are connected via intranet, while 33% of them are not connected. Size oriented analysis demonstrates that all the large enterprises have their computers networked, the same happens in 92% of medium, 62,07% in small and 48,72 in micro enterprises.

The research also tried to give the answer to the questions of which computer applications and software solutions are used in daily business at the observed enterprises having in mind the fact that more sophisticated information systems offer more efficient business results. According to the obtained results, the most present software solution is Microsoft Office package (Word, Excel etc.) which are used in 61,8% of the enterprises. The second category is consisted of specialized software which is standard support for operational transactions (accounting software etc.) and it is present in only 13,2% of the enterprises. The third category is involving specialized software products which are directly related to the main activity of the enterprise and it is present in 8,8% of the enterprises. 16,2% of the enterprises possess their own complete information management system, while none of the observed entities possess any software solutions related to decision support systems.

Table 2. The presence of software solutions at the enterprises of Herzegovina region

Software solutions in use	**Micro**	**Small**	**Medium**	**Large**
Microsoft Office Package (Word, Excel etc.)	80%	63,16%	40%	0%
specialized software which is standard support for operational transactions (accounting software etc.)	6,67%	15,79%	26,67%	0%
specialized software products which are directly related to the main activity of the enterprise	6,67%	10,53%	13,33%	0%
decision support system software	0%	0%	0%	0%
complete information management system	6,66%	10,53%	20%	100%
Total	100,01	100,01	100	100

Source: Author's calculation

The research tried to give the answers of organization of information systems, that is: the organization of support, maintenance and service of the information equipment and processes in the enterprise. In more than half of the observed entities (61%), there are no IT employees. In 28% of the enterprises there is one person in charge of IT (21% - he/she does this activity along the other jobs, 7% - that's his/her only activity). 11% of the enterprises have their own IT section (5% ad the part of some other department, 6% as standalone department with own manager). Analysis also demonstrated that, when it comes to the size of the enterprise, 40% of large enterprises have the IT department, while 8% of medium ones have it. Almost none of the small and micro enterprises have the IT department.

Outsourcing function of the information systems is usually referred to confiding one part or whole data processing to some other enterprise which is specialized in that kind of business (Bajgorić; 2007, 521). The maintenance of computer equipment is handled differently throughout the enterprises. 59,8% don't have any kind of contract with specialized IT company (31,4% hire IT expert when necessary, 28,4% had no say in this matter). The other 40,1% of the enterprises have some kind of contracts of maintenance and 8,8% of them for hardware maintenance (computers and network equipment), 12,7% of them for software support and 18,6% of them for both of previously stated matters. Analysis shows that medium and large enterprises have distinctive lead in signing contracts with specialized companies (outsourcing) against the small and micro ones.

Table 3. Contracts of maintenance and service of IT equipment and processes

Outsourcing for IT maintenance and service	Micro	Small	Medium	Large
a) no	41,46%	20,69%	16%	28,57%
b) no – hiring expert when necessary	34,15%	44,83%	20%	0%
c) yes – for service of hardware	4,88%	10,34%	16%	0%
d) yes – for service of software	7,32%	10,34%	16%	42,86%
e) yes – for service of hardware and software	12,2%	13,79%	32%	28,57%
Total	100,01%	99,99%	100%	100%

Source: Author's calculation

When it comes to utilization of information technologies for storing data about customers/suppliers/partners, the analysis shows that 26,5% of the enterprises store all of their information as digital data. 28,4% of them store most of their information as digital data, 20,6% do it just for some information, 9,8% rarely and 14,7% store no information as digital data and keep all of their archive just in paper form.

Table 4. Level of digital data storing

Storing information as digital data	Micro	Small	Medium	Large
a) not at all	27,91%	7,14%	4,17%	0%
b) few information	16,28%	7,14%	4,17%	0%
c) some information	18,6%	25%	20,83%	14,29%
d) most of it	11,63%	32,14%	45,83%	57,14%
e) completely	25,58%	28,58%	25%	28,57%
Total	100%	100%	100%	100%

Source: Author's calculation

According to the collected data, 88,5% of the enterprises is connected to the Internet, while 11,5% isn't. ADSL connection is the most common way of accessing the Internet which is used by 80% of the enterprises. 11,1% use cable Internet provider. Wireless Internet access is present at 7,8% enterprises, and only 1% use dial-up connection. The analysis shows that all of the large enterprises are connected to the Internet. 96% of medium, 93,10% of small and 79,07% of micro enterprises use Internet connection.

Web site is an important and unavoidable segment of enterprise's communication with the environment and it's effecting company's efficiency highly. According to the obtained results of the research, 51,5% of the enterprises of Herzegovina region possess their own web-site. Only 5,8% of these companies update the web-site on daily bases. 3,8% of them hasn't done a single update since the web-site had been created and published. 23,1% of them update their web-sites on weekly bases, 26,9% once a month, 21,2% once in every 3 months, 17,3% do it once a year and only 1,9% do it rarely than once a

year. When it comes to enterprises that don't possess a web-site, 11,8% of them have no plans of creating one. The rest have some plans for it without stating specific time of when that should happen. 43,1% are thinking of creating the web-site sometime during the next couple of years, 17,6% will make one in next year, 15,7% in next 6 months and 11,8% plan on creating one in the next three months. When observing the issue from the size of the enterprise point of view results show that 85,71% of large, 76% of medium. 50% of small and 31,71 of micro enterprises own a web-site.

E-mail has taken its substantial position both in personal and business life. The research tried to discover in what extent enterprises of Herzegovina region use this way of communication. The results show that 74,5% of the enterprises own an official e-mail. The analysis demonstrate that 85,71% of large enterprises possess an official e-mail. 96% of medium, 85,19% of small and 52,27% of micro enterprises do also.

When it comes to providing official e-mails to the employees, 24% of the enterprises do so for all of the employees. 35,6 of the enterprises provide e-mails to managers only (26,9 to all of the managers, 8,7% to top managers only). 19,2% provide it to the executive officer and 21,2% don't provide official e-mails at all.

Table 5. The possession of official e-mail by employees

Possession of e-mail	**Micro**	**Small**	**Medium**	**Large**
a) no one	29,55%	25%	8%	0%
b) just the chief executive	36,36%	14,29%	0%	0%
c) top managers	0%	14,29%	20%	0%
d) all managers	9,09%	25%	48%	71,43%
e) all employees	25%	21,42%	24%	28,57%
	100%	100%	100%	100%

Source: Author's calculation

Mere possession of official e-mail doesn't consequently mean that enterprise and the employees are using it. Results demonstrate that 87,6% of the enterprises practice the usage of the official e-mails in the communication and 46,6% of them do it very often, 21,9% do it rarely and 19% do it between rarely and often. 12,4% of the enterprises don't use the electronic way of communicating ever. The analysis demonstrates in the following table that larger enterprises use the electronic communication far more that smaller enterprises do.

Table 6. The extent of electronic communication usage in the enterprises

Electronic communication	Micro	Small	Medium	Large
a) never	22,73%	10,34%	0%	0%
b) rarely	29,55%	24,14%	12%	0%
c) between rarely and often	20,45%	20,69%	20%	0%
d) very often	13,64%	24,14%	52%	71,43%
e) extremely often (always)	13,64%	20,69%	16%	28,57%
Total	100,01%	100%	100%	100%

Source: Author's calculation

Increasing usage of electronic transactions, led to their big significance for enterprises as they considerably raise the level of effectiveness and business efficiency. According to the research results 52,4% of enterprises offer their customers/suppliers/partners possibility of electronic transactions (orders, reservations, payment etc.). Analysis of research results shows that all the big enterprises have an offered possibility of electronic transactions, 76% medium, 65,52% small and 22,73 micro ones also have it.

Available possibility of performing transactions doesn't necessarily mean that they are deployed by enterprises that have them. Research shows that 41,9% of enterprises of Herzegovina region use the options of electronic realization of transactions with their customers/suppliers/partners very often, 18.1% of them between often and rarely, 18,1% rarely, and 21,9% enterprises don't use it at all.

Table 7. The level of deployment of electronic transactions

Electronic transactions	Micro	Small	Medium	Large
a) never	36,36%	17,24%	4%	14,29%
b) rarely	22,73%	20,69%	12%	0%
c) between rarely and often	15,91%	20,69%	20%	14,29%
d) very often	11,36%	17,24%	48%	57,14%
e) extremely often (always)	13,64%	24,14%	16%	14,28%
Total	100%	100%	100%	100,0%

Source: Author's calculation

Internet banking makes business easier, faster, more efficient and cheaper, therefore the research tried to realize in what extent do the enterprises of Herzegovina region use Internet banking as a part of their business conduct.

According to the results, 53,3% of enterprises don't use Internet banking. Size oriented analysis demonstrates that 71,43% of large, 76% of medium, 62,07% of small and 15,91% of micro enterprises use Internet banking.

4. Conclusion

Fast development and big extent of usage of information technologies in business area along with the effects they carry to the business performance has made them on of the most important factors of enterprise concurrency. On its way to European integrations, Bosnia and Herzegovina is forced to liberalize and open its market which leads to the fact that Bosnia and Herzegovina enterprises found themselves competing with other enterprises from highly developed west European economies which are using up to date achievements from information technology filed in their business.

The results obtained from the research and analysis of collected data about the level and ways of information technologies organization and deployment at the enterprises of Herzegovina region clearly point that the first hypotheses H1 of this research can be accepted: "information technologies are insufficiently used and are not appropriately organized in the companies of Herzegovina region".
Results concerning the level and ways of information technologies organization and deployment at the enterprises of Herzegovina region regarding their size (large, medium, small and micro) clearly and arguably point that the second hypotheses H2 of this research can be accepted: „there are substantial differences in utilization and organization of information technologies in the enterprises of Herzegovina region regarding their size".

Enterprises should, regardless of their size, use the possibilities of information technologies, which are strongly related to company success in modern business of global and concurrent environment. Micro and small enterprises should use the help of IT experts in their business activity more often and they should also improve and modernize their communication with the environment as well as their online business.

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THE EVOLUTION OF THE SOFA-TV IN THE NEW DIGITAL SCENARIO

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Abstract

The traditional television is now at a turning point because the introduction of digital technology has changed the competitive context: it has modified the bargain power of the traditional players by offering new opportunities to the new entrants and imposing new strategies to the existing ones. This paper, basing on 32 case studies and the census of Sat TV, DTT and IPTV offerings, aims at describing the current state of channel offerings, individualizing the principal players and identifying their strategies, thus allowing us to give a few predictions as to the possible future changes in the industry. The analysis will have a general applicability, as the considerations made are not particularly country-specific, although performed within the Italian context, one of the most advanced in the development of digital TV platforms.

JEL classification: D83, L15, L86

Keywords: digital technology, competitive, strategies

The TV industry

The TV industry, for decades quite static, is currently undergoing important changes (Meisel, 2007): such business is in fact being shaped by a number of driving forces, such as the digitalization of the TV signal, the diffusion of new alternative access technologies, the development of broadband and streaming video technologies, the introduction of Web TV and new generation access terminals, and the progress of interactive and personal television solutions (Bria, Kärrberg, & Andersson, 2007; Burbridge, 2006; Hu, 2007; Jirachaipravit & Probert, 2007; Hyers, 2006; McGrail & Roberts, 2005; Probert, 2007; Shin, 2007; Shim, Ahn, & Shim, 2006). Past changes, as well as those to come, are so radical that some authors prefer to talk about TV (r)evolution rather than evolution, asserting that the very meaning of the term "television" needs to be revised (Rangone & Turconi, 2003).
It is clear that the traditional television is now at a turning point. As a matter of fact, the digital television technology introduction has changed the competitive

context. This phenomenon is going to renovate the audiovisual industry, modifying the bargains power of the players, offering new opportunity to the new entrants and imposing new develop strategies to the existing ones. Therefore in the digital scenario today some new specialized operators are entering the market by focusing on own competences without have to buy frequencies or to build a transport network.
The technological evolution has shifted the boundaries of the TV industry. Television platforms are in competition, not only among themselves, but also with "New Media" offering contents and services not specifically related to the television sector (Poel, Renda, & Ballon, 2007; Furregoni, Rangone, Renga, & Valsecchi, 2007): i) Internet and ii) all the new ways of offline use of digital contents (e.g. podcasting, downloading of entertainment contents on the PC or mobile phone). There is strong competition between traditional media and new media for the *share of time* of users and the *share of advertising* of investors.
Three digital platforms viewed through the "traditional" television screen (Sofa-TV) can be identified on digital networks: Sat TV, DTT and IPTV (Toletti & Turba, 2008). Globally, the majority of sales presently continue to apply to Sofa-TVs even if other digital platforms are emerging (for instance Mobile TV and Web TV).
For this reason, this paper will focus on Sofa TVs, in particular describing the current state of channel offerings, individualizing the main players and identifying their strategies in order to offer a few predictions about possible future changes**.** The analysis will have a general applicability, as the considerations made are not particularly country-specific, although performed within the Italian context, one of the most advanced in the development of digital television platforms.
In order to achieve such results, the paper is further divided into four sections. The first section will present the empirical study on which our considerations are based. The second section will describe the offerings of the Sofa-TV sector. The third section will deal with the players of the Sofa-TV industry and their strategies. Finally, the fourth section will offer some elements for further discussion.

Empirical study

The information needed for the analysis and evaluation of the Sofa-TV sector in Italy was mainly collected through a case study methodology, but an exhaustive census of the Sofa-TV offerings was also taken in order to complete the information base. The empirical study has been conducted in 2008 on a sample of 32 companies operating at different stages of the new digital TV value chain and with different characteristics (e.g. size, revenue, business model). For each case we had single or multiple interviews talking with all the most important decision makers. The panel comprises:

- 13 cases from broadcasters and Telco operators (i.e. Elemedia, Fastweb, Gruppo Mediaset, Gruppo Telecom Italia, Infostrada, La7/TI Media, MTV Italia, Rai, Rete A, R.T.I. Interactive Media, SitCom, SKY Italia, Tiscali);
- 6 cases from content providers (i.e. Digicast, Einstein Multimedia, Endemol, Turner Broadcasting System Italia, Walt Disney, Yam112003);
- 8 cases from service providers (i.e. BIP, Cisco Italia, IBM, IconMedialab, Kora, Skylogic, TXT Polymedia, Xaltia);
- 5 cases from media/advertising centers (i.e. Carat/Isobar, Digitalia '08, MediaCom Italia, Niumidia Adv, Sipra);

Moreover, an exhaustive census of the Sofa-TV offerings have been done aimed at mapping all the channels transmitted on the digital Sofa-TV platforms present in Italy today. More than 500 channels were individuated and analyzed both in 2007 and 2008, and for each, 23 important variables were investigated.
All the research on the New TV sector began in January 2007 and is still in progress.

The Sofa-TV offerings in Italy

In this chapter, we will analyze in detail the television channel offerings in Italy relative to the three digital platforms included in the Sofa-TV category: Sat TV, DTT e IPTV.
Between 2007 and 2008 the offer is grown on all the Sofa-TV. In particular:

- The offerings on Sat TV grow from 243 to 297 channels, thanks to SKY Italia's portfolio expansion;
- The DTT offerings increase from 40 to 45 channels, thanks to the introduction of new channels on the part of, first, Mediaset (e.g. Joy, Mya, Steel e Disney), then Rai (Rai4) and finally radio broadcasts from the Espresso Group (Radio Deejay, Radio Capital, m2o);
- IPTV channel offerings rose notably, from 153 to 218, as the result of two phenomena: first, the transposition of channels from SKY Italia satellite platform to IPTV; and second, the significant increase both in the On demand channels, due to the entry of two new players (Tiscali and Infostrada) in this arena, as well as in the channels of already existing operators (geared towards specific market niches that were, up until now, ignored).

The Sofa-TV offerings can be broken down referring to the means of distribution of the channels. There are essentially two: On demand channels, where contents are viewable upon viewer request; and linear channels, where there is a programmed schedule that is predefined and delivered in an ongoing manner. There are also certain channels that cannot be classified as either On demand or linear because they do not have sufficient ongoing programming, nor are they viewable when the viewer chooses. All these channels provide valuable contents (particularly soccer, but also sports, movies and TV series)

but are available exclusively during certain predefined times and for only a few hours per day.
It should be noted that the On demand channels are only present on IPTV, the only platform that, from the technological point of view, can support one-to-one delivery on request. The other platforms, nevertheless, are trying to increase the viewing flexibility of their own contents in order to more closely match the On demand rationale. On the one hand, both the satellite and the DTT platforms have introduced their +1 versions for certain pay channels in order to make them more easily viewable for their users (since they transmit the programming with a one-hour delay) and on the other hand, the monopolizer of the satellite platform, SKY Italia, counts mostly on its MySKY service which, in fact, allows the user to create his own On demand library through program recording.

To complete the analysis of the offerings, it is beneficial to distinguish between "native" channels on each platform (created specifically for that platform) and transposed channels (those replicated on the platform in question, but native of other platforms). Naturally, given the technological limitations that were previously mentioned, such a distinction makes sense only in regards to linear channels, since those On demand are present exclusively on, and were created solely for, IPTV. In the case of linear channels, we see how the previously indicated growth in the number of channels can be explained in two ways. On the one hand in fact, it can depend on the diverse propensity for innovation (intended as the ability to create new channels) of the different platforms, and on the other, it can be tied to the diverse propensity for imitation (intended as the ability to replicate the offerings generated by other platforms). In the case of satellite and DTT, the propensity for innovation prevails, and the widest assortment of "native" channels continues to be that of satellite. However, in the last year, there has been a significant planning effort on the part of DTT as well, despite the intrinsic limitations of transmission capacity. In the case of IPTV, there is the prevalence of duplication of the SKY Italia channel offerings, since at the moment, such a platform is not able to create its own original offerings of linear channels.

The digital-TV value chain and the principal players

The value chain provides a means to analyse the contribution that each player makes to the delivery of value to the customer (Jirachaipravit & Probert, 2007). Technology and competitive strategy includes the analysis of the value chain (Kurokawa et al., 2005; Segal-Horn, 2003). The value chain of the new digital television can be represent with four main activities (Figure 1):

Figure 1 - Digital-TV Value Chain

Source: Author's calculation

- *Content production*, which include the concept, the production and the post-production of video contents.
- *Packaging & Scheduling*, which include the contents aggregation, their schedule in a programming and the organization of channels bouquets.
- *Distribution & Diffusion*, which include all the signal delivery activities.
- *Service and customer management*, which include all the pre and post sale activities, CRM and payment management.

The introduction of digital technology in the Sofa-TV arena has greatly changed the competition in this sector, allowing the entry of both new operators, born specifically to take advantage of the possibilities offered by digitalization, as well operators coming from other industries. In particular, in the Italian Sofa-TV market, the categories of most important players refer to: the "traditional" broadcasters of analog TV (i.e. RAI, Mediaset and La7); satellite TV broadcasters (i.e. SKY Italia - the result of the fusion of the first two Italian operators in the satellite TV arena - Stream and Telepiù); and a series of players who, with already consolidated businesses in sectors like telecommunications in particular, but also paper publishing, entered the Sofa-TV arena thanks to the opportunities introduced by the new digital technology (e.g. Fastweb, Telecom Italia, Infostrada, Tiscali, Gruppo L'Espresso, Class Italia).
Therefore, digital technology, while on the one hand bringing a strong increase in the number of competitors in a sector characterized for years by the Rai-Mediaset duopoly, and on the other, putting in competition many different players, has decisively changed the strategies of the players and their ways of competing in the Sofa-TV arena.
Following this paragraph, we will try to highlight the main characteristics of the most important clusters of competitors ("traditional" broadcasters, "digital" broadcasters, and the Telcos) discussing the strategies developed by these operators.

1."Traditional" broadcasters

Due to both recent EC legislation delineating the passage to digitalization and its analog to digital switch-over times, and to the effective strategy executed by SKY Italia on satellite, traditional channel operators have been pushed to a faster and more efficient capitalization of digital opportunities. However, in

order for DTT to not represent merely a siphoning off of revenues from the analogical to the digital platform, they must maximize strategies and channel offerings that, on one hand can offer a competitive alternative to SKY Italia's pay TV (and the IPTVs, as well), and on the other hand, can increase the volume of advertising on free-to-air channels through either an increase in the audience and/or its greater segmentation and profiling, or through innovative advertising campaigns, that, thanks to the possibilities offered by digital technologies, could prove more effective.
On the other platforms of Sofa-TV, traditional broadcasters have continued, up until 2008, to position themselves further upstream in the chain as content and programming suppliers with less concentration on the final client. Already from 2009 things should change, since a consortium of the three biggest traditional broadcasters is working to launch a free satellite platform as an alternative to that of SKY Italia.

2. SKY Italia

At the moment it is the only important operator in the satellite platform arena, even if, as noted, things could change soon. In these last few years, it has been getting extremely positive results (it is in fact ranked the Number Two Italian television operator in terms of revenue, if we do not consider the national Rai-imposed tax that all Italians must pay in order to have television).
In the last year, SKY Italia has aimed for both a further broadening of its already ample and varied channel offerings, as well as a greater penetration of its most innovative services (MySKY, which allows an easy program recording and/or delayed viewing; and HD, which allows High Definition viewing of a great number of contents).
It is not present on DTT, whereas on IPTV it plays an indirectly key role, since its offerings represent a fundamental component of three of the four Telco operators' packages in this sphere.

3. The Telcos

The Telcos play their game in the field of television by pushing IPTV, even if, in absolute terms, the results are still marginal compared to other digital platforms. It is, however, necessary to highlight that the offerings in the Telco television sphere are more tied to the need to expand their service portfolio in order to reduce the churn rate and increase the ARPU, than to their desire to develop a new business that can be profitable in and of itself.
Two new players, Infostrada and Tiscali, entered the field, and even if up until now they play an absolutely marginal role, they are interpreting the concept of IPTV in an original way, with a "hybrid" model that brings different characteristics, typical of the Web to Sofa-TV. Tiscali, in particular, has greatly

invested in IPTV, creating a decisively innovative product in regards to user interface, graphic qualities and On demand content offerings.

Conclusions: current trends and future turning points

In conclusion, it is possible to make some consideration as to what might be the future evolution of the industry. Such considerations, although obtained from the analysis of the Italian reality, can certainly be applied to other international contexts as well, since the factors that could influence the development of the industry are, in large part, not country-specific.

The future turning points that we see on the horizon are: i) the competitive battle in the pay contents market, which is getting increasingly more interesting, with on the one hand, SKY Italia's continued growth, increase and enrichment of offerings, and on the other, Mediaset's new and improved, more aggressive game played by in the field of DTT; ii) Rai's ability to develop a position in the sector, considering its complete exclusion from the Pay TV arena, currently the most attractive attribute of digital television; iii) IPTV operators' ability to carve out their own niche and exploit both the specificity of this platform and their key resources as operators of Telecommunication and Internet service providers.

In particular, the main factors that will be able to influence the development of the market, not only in Italy, but in general in every country characterized by the evolution of the TV towards digital platforms are the following three:

- the normative and regulatory framework
- technological evolution of the networks
- the evolution of the systems and tools for measuring the audience and the users

1. The normative and regulatory framework

It is obvious that any evolution of the normative or regulatory framework could heavily influence the dynamics of this sector. Up until today in Italy the two most interesting phenomena are: on the one hand, the definition of times and modalities (including the theme of public subsidies for the purchase of STBs) of the switch-off of analog TV, which has already begun to apply to certain regions of Italy and which, up until today, seem to be, in large part, fixed; and on the other hand, the theme of regulation of product placement in TV programs, which could have a strong impact on the roles and strategies of the operators.

2. The technological evolution of the networks

The three categories of Sofa-TV are base on completely different channels from a technological point of view, due to both their current characteristics as well as the evolution that they will undergo in the years to come.

In an attempt to simplify and schematically present this theme, we can characterize the different digital platforms by three main performance characteristics:

- The bandwidth, which influences the number of deliverable channels and their quality (for example, influencing the possibility of transmitting in HD);
- The intrinsic interactivity, that depends on the presence of an embedded back hl channel;
- The geographic coverage (which, in reality, is not an intrinsic characteristic of technology, but depends on the investments made within the system of operators).

It is obvious that the positioning of the three digital platforms on these three parameters is varied and is destined, moreover, to undergo very different dynamics in time:

- Sat TV presents clear strengths in its territorial coverage and bandwidth; the weakness of this platform is, however, the absence of an intrinsic return signal, which limits its capabilities for certain formats (like On demand) and for certain more interactive services;
- IPTV has, on the other hand, as its own strong point, the back channel intrinsic of its network (IP) and therefore capabilities on an interactive level; in terms of coverage of the territory and breath of range, it still suffers from problems tied to the digital divide, with the presence therefore of areas of the country not yet reached by a sufficient bandwidth;
- DTT starts with good coverage of the territory, but suffers from a limited bandwidth and from a lack of intrinsic back channel.

With reference to the back channel it should be noted that the platforms that don't have embedded potential can still use external channels, with normal Internet connectivity at home or on the cellular network (as for example, has already been done for certain services, like the pay per view contents).

3. The evolution of the audience and user measurement systems and tools

One of the great novelties brought by digital platforms is represented by the possibility of establishing a real relationship with users, to know their behaviors, and therefore, to profile and group them (even if this possibility is much greater in the presence of a back channel).

It is evident that, as these characteristics are very interesting for the advertisers, they have the ability to create new revenue opportunities for the broadcasters. However, in order that this truly become a reality, there is a need for adequate measurements which are both consistent with the new platforms, and trustworthy systems of measurement of the audience, ones accepted by the entire market.

The three factors analyzed above, the regulations, the technological evolution and the achievement of audience measuring systems, will in coming years strongly influence the offering strategies and business models of the broadcasters on the different platforms and therefore their reciprocal competitiveness.

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IMPACT ANALYSIS OF CHANGES IN HUMAN RESOURCE CAPITAL ON ECONOMIC DEVELOPMENT – FROM GRAVELY UNDERDEVELOPED TO HIGHLY DEVELOPED SOCIETIES

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Abstract

This research encompasses 177 countries around the world with the data on human resource variables for the year 2005. The countries have been put into four groups: gravely underdeveloped, developing, developed, and highly developed. The research has looked into the variables Human Development Index, population, population over 65 years of age, primary education enrolment, investment into secondary education, investment into tertiary education, investment into research and development, Gender–Related Development Index and productivity increase, and analyzed how they influence the economic growth rate. This means that the impact of changes in the observed variables is analyzed, i.e. how they influence the standard of living and level of development in countries of the world. The main hypothesis is that investing in people, i.e. in primary, secondary and tertiary education will bring long-term positive effects on social growth and development, thus contributing to the level of development and overall standard of living. Another hypothesis is that, depending on the development level, human capital and education will exert different influence on GDP per capita, which indicates that a number of economic variables play a major role on the effects of education.

JEL classification: E24, O15

Keywords: primary education, secondary education, tertiary education, human resource capital, economic development, development level

1. Introductory considerations

Research of impact analysis of changes in human resource capital on economic development – from gravely underdeveloped to highly developed societies – has been divided in three parts. The first part provides a brief theoretical overview of literature on impact of education on human capital development published in the country and abroad. The second part covers the research methodology and explains data used in research and analysis by countries

around the world. The third part provides analysis and interpretation of results of conducted research, showing impact changes of human capital development on economic development and gross domestic product (GDP) per capita of the observed countries of the world. The aim of this research is to test the hypothesis that investing in people, i.e. investing in primary, secondary and tertiary education will bring long-term positive and significant effects on social growth and development, thus contributing to the level of development and overall standard of living. Another hypothesis is that, depending on the development level, human capital and education will exert different influence on GDP per capita, which indicates that a number of economic variables play a major role on the effects of education.

2. Theoretical overview of education impact on human capital development

Many scientists think that successful companies and societies in the 21st century will be those that will be the most successful in revealing, storing and applying what their people know. In order to be successful in knowledge management and creation of added value, it is necessary to create suitable conditions in an organization, i.e. society itself. In other words, this means that knowledge intensive organizations or self-learning organizations, i.e. self-learning society have to be developed.

Learning Organization or Knowledge Organization or Knowledge Society (Armstrong;2001,89) is an organization or a society in which people at all levels, individually or collectively, continuously increase their knowledge in order to achieve results they desire. Emphasis is, of course, on people and development of their capacities to overcome changes by changing their knowledge, skills, attitudes, habits, values, etc., that is, on their ability to learn. The future of learning societies will depend only on the ability of individuals and teams to learn and to increase their creativity, innovation and knowledge all the time.

Dynamic development of organization learning theory results in appearance of different learning schools: systematic (authors were, among others, Beer, Senge, Sterman, Sutton), organizational (author Argyris) and strategic (authors Burgelman and Sayles). Also, according to Huczynski and Buchanan (Senge;2000,218), in the concept of organizational learning it is possible to recognize two different learning models: the one based on behaviourism, referring to creation of procedural knowledge (the ability to practice a certain skill without understanding the complex cause-and-effect relationship), and the cognitive one, which is closer to creation of declarative knowledge (understanding the concept which does not necessarily have the practical application).On the other hand, according to the psychologist Kingsland (Senge;2000,237), learning is a combination of cognitive, affective and

behavioural activities through which a learning person at the same time thinks, feels and acts.

Organizations, like individuals, can use different levels of learning: from accidental (reflex, spontaneous, unconscious, incidental) to educated (conscious, inductive, calibrating, integral). Although certain forms of leaning may appear spontaneously (for example, reflexes), the practice of the most successful organizations and societies of today indicates the importance of the planned and conscious attitude toward the learning process. According to Pedlar and associates (Aronson et al.;2005,118), the key characteristics of a learning society are: learning and participatory approach to formulation of strategies, which includes regular planning, application and monitoring, reporting on the achieved, organizational structure facilitating changes and development, openness to environment that ensures utilization of opportunities, and inter-organizational learning and internal climate which emphasizes learning and development.

Peter Senge (Senge;2000,268) lists the five main disciplines in building of a learning organization or society: personal mastery, recognizing mental models, building shared vision, team learning and systems thinking. Personal mastery is the discipline of continually clarifying and deepening our personal vision, of focusing our energies, of developing patience, and of seeing reality objectively. Simply put, organization or a society cannot learn until all their members start to learn and apply the concept of life-long or generative learning. Further, mental models are deeply ingrained assumptions, generalizations, or even pictures and/or images that influence how we understand the world and how we take action, and these are wrong with the most of the people. According to Argyris (Davey;2003,19), with mental models most of the people practice defence behaviour due to fear, which is actually a barrier to individual and organizational learning. Argyris thinks that human behaviour emerges from "a scale of conclusions" which consists of human observations, theories and assumptions created by individuals, beliefs they acquire and actions they take, and since human mental models have mistakes, individuals very often behave inappropriately. As a methodology for elimination of mistakes in human mental models, Argyris suggests harmonization of what is thought with what is said ("left – hand column and right – hand column" techniques). Building a shared vision refers to the capacity to hold a shared picture of the future we seek to create. The shared vision of a society can and must be built only of individual visions of its members. Team learning is vital, because it's the teams, not individuals, who are the key learning units in a modern organization or society. When teams really learn, not only they achieve exceptional results, but also individual members develop faster than they would otherwise develop, while in situations when teams cannot learn, an organization or a society also cannot learn. Finally, systems thinking is a group of knowledge and methods which are

developed in order to provide an insight in how to change them. Systems thinking is the fifth discipline, it integrates the other disciplines, and it is easier to develop it with people of younger age.
An important feature of a learning organization is that investing in new knowledge becomes a way of behaving in which everyone is a knowledge worker and so everyone can compare their knowledge with the knowledge of their competitors and see whether it is shrinking or growing (Benchmarking). The concept of a learning organization is, without any doubt, becoming a philosophy with growing presence in modern societies, from large multinational companies to the smallest organizations, and this large emphasis on organization learning is caused by ever faster and more frequent changes in today's economy. Of course, creating such a society is not easy at all; therefore Learning Labs are more often applied. Learning Labs provide accounts of real situations where teams learn how to learn together through simulation games, where they find mistakes from which they learn, in order not to make them in future.
It results from all of the above stated that the future of development of business organizations, states or societies will depend on capacities of individuals, teams, departments, facilities or total corporations or institutions and their desire to learn and to increase their knowledge throughout their life and working life. Therefore states and societies have no choice but to finally start making larger investments into people, creation of new knowledge and development of learning organizations and a learning society, which are the main prerequisites for survival and success under ever tougher competitive conditions. The concept of developing education, an education system, a learning organization and a learning society is becoming a new imperative for every business entity and every society in the period ahead of us, in which only those companies and societies that will have the necessary knowledge will have the crucial role on the market, i.e. faster and higher economic growth.

3. Data collection and methodology

The base of research conducted in this paper comprises data collected on statistical variables of Human Development Index, population, population over 65 years of age, primary education enrolment, investment into secondary education, investment into tertiary education, investment into research and development, Gender–Related Development Index and productivity increase[19] for 177 countries of the world for the period from 1975 to 2005, with

[19] Calculation method for all of the stated statistical variables and the list of observed countries in the world are explained and stated in detail on http://unstats.un.org/unsd/

projections for the year 2015, where the year 2005 has been taken as the basic year for the needs of this research.[20]

4. Research results analysis

The research presented in this paper is based on analysis of data obtained by calculating linear regression equation, linear correlation coefficients and multiple linear correlations, and available data have been processed and analyzed with application of SPSS statistical programme package.
Impact changes of human capital variables on GDP per capita in countries of the world have been observed on the grounds of different development levels of the countries of the world for the year 2005, and according to the previous arbitrary division by the authors of this paper into gravely underdeveloped countries, (GDP per capita under $1 000), underdeveloped countries (GDP per capita ranges from $1 000 to $5 000), developed countries (GDP per capita ranges from $5 000 to 20 000) and highly developed countries (GDP per capita exceeds $20 000).

4.1. Impact analysis of human capital on economic development

Variable	**Gravely underdeveloped countries**	**Underdeveloped countries**	**Developed countries**	**Highly developed countries**
Human Development Index	0,71	0,77	0,85	0,82
Population	- 0,61	- 0,66	- 0,69	- 0,72
Population over 65 years of age	- 0,53	0,45	0,52	0,56
Primary education enrolment	0,59	0,54	0,51	0,48
Investment into secondary education	- 0,62	0,51	0,56	- 0,52
Investment into tertiary education	0,51	0,73	0,91	0,85

[20] Official statistical data of United Nations, cited according to http://hdr.undp.org/

Investment into research and development	0,37	0,43	0,57	0,84
Gender Related Development Index	0,42	0,46	0,45	0,51
Productivity increase	0,49	0,54	0,71	0,86

Table 1. Overview of linear correlation coefficients of the observed variables and their impact on GDP per capita of analyzed countries of the world according to the division from gravely underdeveloped to highly developed countries of the world.

Positive impact of the Human Development Index variable grows along with the growth of development level of a country, with a slightly decreased impact in highly developed countries, i.e. human capital has a slightly weaker impact on economic development after a country achieves a certain high development level.

Negative impact of the population variable grows as the development level of a certain country grows, i.e. higher level of standard of living - the lesser population a country has, easier and faster it achieves the higher level of GDP per capita.

The population over 65 years of age variable has a negative impact in gravely underdeveloped countries, while its impact is positive and grows as the country achieves higher development level, which points to the growing contribution of retired people to economic development as the wealth of a country grows.

The enrolment into primary education variable has a positive trend with the falling tendency as the standard of living grows, which indicates a positive, but still decreasing impact of primary education as development level of a society grows.

The investment into secondary education variable has a negative impact in gravely underdeveloped and highly developed countries, while its positive impact in underdeveloped and developed countries reveals the inability of the poorest countries to ensure development and contribution of educated people with secondary education. Even in highly developed countries of the world it reveals insufficiencies of secondary education and the need for higher education needed for a more serious social and economic development.

The investment into tertiary education variable has a trend of a positive impact, independently of a development level of a country, which clearly indicates the importance of university and life-long education for development of a society and economic progress.

For the investment into research and development variable, a positive impact increases from gravely underdeveloped toward highly developed countries, so that the impact in highly developed countries would become incomparably and significantly larger than in countries with the lower standard of living, which shows that the impact of science and research as well as innovative and creative projects is becoming prominent.
The Gender Related Development Index variable has a trend of a positive impact, independently of the standard of living in the countries of the world, which indicates the importance of even development of both genders in every society.
The productivity increase variable shows a growing positive impact as development level of the countries increases, which indicates that the significance of a human factor in work and work processes grows along with economic development.

5. Research results synthesis

Research results indicate a presence of a positive pattern of human capital development impact on economic development of the countries of the world, and they also indicate different movement tendencies of human capital development impact, if we observe countries of the world from gravely underdeveloped to highly developed, i.e. according to their economic development.
The research has proved that the main research hypothesis is positive, i.e. that investing in people, that is, investing in primary, secondary and tertiary education will bring long-term positive and significant effects on social growth and development, thus contributing to the level of development of a certain country and overall standard of living. Another hypothesis has also been confirmed, stating that, depending on the development level, human capital and education will exert different influence on GDP per capita, which indicates that a number of economic variables play a major role on the effects of education.

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PRODUCTION COSTS MANAGEMENT BY MEANS OF INDIRECT COST ALLOCATED MODEL

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Abstract

Management costs in a business system requires planning, budgeting, monitoring and comparing of all kinds of expenses. When calculating a production through the production order system there always seems to appear the same dilemma; which key or keys should be chosen for allocating indirect costs. As a result, in addition to the well-known classical methods for allocating indirect costs, a new method is developed in the form of a Model for allocating indirect costs. By applying the above-mentioned model, the classical methods are omitted from the process of allocation indirect costs, which contributes to an easier and faster planning, monitoring, comparing, and reducing costs.

JEL classification: D24

Keywords: direct costs, indirect costs, allocation of costs

1. GENERAL INFORMATION ABOUT MANAGEMENT COSTS

Managing business results serves the purpose of achieving profits, which is basically calculated in a way that the realized revenues extract realized expenditures that make up different types of costs. Within the concept of managing business results, management costs occupy a particular place. This means, when increasing the revenues one should try to decrease the costs to obtain the greater profit. Therefore, management must find ways that can further decrease costs, in other words, how and what to save.
The management cost is to be, or become, if it is not already, perpetual care for management as well as all other employees in the business system. When increasing the efficiency of business system it requires active, continuous, management cost, which involves constant improving of the scope management and content costs. Occasional care costs and occasional programs for the subsequent reduction of costs will not provide good enough or great results. Therefore, only actively managing costs can best contribute to the business operations of the system.

"Every good management must understand the importance of cost and many of you set a goal to reduce them. Nevertheless, such treatment is not effective enough, when not achieving triggers for significant costs, since we often do not known them. We gladly reach for measures in the primary sector, while other areas of operations are operated by existing work habits and factors. At these areas there are a lot of activity, which are prescribed, and many are the result of knowledge in the company." (Koletnik, 2000, 4)

There are two ways to control costs: static cost management and active cost management. Static way to manage costs is marked by occasional non-systematic opportunity and take measures by management, and such measures are short-term effects. With static management costs, as a rule, the study and reduce certain types of expenses, and such cost management is appropriate only in emergency situations, i.e. when one should immediately adopt the necessary measures. Active cost management includes a permanent, systematic and timely seeking opportunities to reduce costs, and their consistent implementation. Considering that the active cost management is not a quick and short-term improvement, as opposed to static, active cost management has long-term effects.

All costs that arise in a business system are collected by the business function of accounting, within, which are the accounting costs. The task of accounting of costs is constantly recording and studying the costs by type, locations and media, as well as monitoring and study of internal business performance by product and services as well as by organizational units. Measurement and monitoring costs represent the basic prerequisite, which are fulfilled in order to gain access to the process of managing costs in the production process. Thomas speaks in favour of the fact that the total costs in manufacturing business systems, around 80% or even over 90% of the costs are waste in production, while the remaining part of the costs are waste outside the sphere of production.

"In practical terms, cost management means submission to the system controlling costs. In other words, cost management includes forecasting, planning, budgeting, and control of costs and analysis show that the conduct of the costs depending on the change of circumstances and causes of deviations from the anticipated costs with a view to their retention in the acceptable limits, and insurance information managers to choose between alternatives that allow changes of direction activities in order to achieve optimal economic results." (Belak, 1995, 131)

Concept of managing costs of production in a business system means that all expenses should be planned and put within a budget, tracked and compared. Therefore, this paper will describe in more detail the planned manner of making calculations, calculation of work orders as well as a model for allocated indirect costs.

2. PLANNED CALCULATION

Management costs, among other things, mean continuous monitoring and comparation of the planned and realized. Planning activities will be done through planning calculations, which are constructed for all products and services. Planning calculation includes all resources required for the production of a product or service.

Normal process of making planning calculations used in most business systems, consisting of norms of use of individual resources that can express the quantity in the units of measure and value of currencies. In other words, the planned calculation consists of all kinds of charges, and that are according to the agents (the possibility of monitoring costs to the level of each product) divided into two groups: direct and indirect costs.
Direct costs include the following types of expenses: basic materials, auxiliary materials, cooperation and work on construction. Indirect costs can be divided into two different groups: the indirect costs of production and the costs of administration and sales. The first group of indirect costs in the production includes the following types of costs: other materials, other services, a work directed by electrical energy, thermal energy, water, maintenance, and depreciation. Another group of indirect costs are the costs of administration and sales, which include all types of costs that are related to business administration, controlling, financial accounting services, commercial services, legal and personnel services, and other administrative services (which are not directly related to production).
Because of frequent problems about the selection the way that we choose the related indirect costs by a particular product, this production planning calculation is not good enough. Why planned calculation should be made in such a way that all of the listed resources include the materials and labour. In terms of expense, materials are divided into a group of direct costs, while the work allocated to the group of indirect costs. Therefore, the labour costs that are expressed through the gross price of an hour, are all related indirect costs. Therefore, planning calculation is a first step towards an active way of managing costs of production, because it enables the determination of height deviations of costs by individual work orders (projects, objects).

3 PRODUCTION ORDER

Terminology commonly used within the propulsion bookkeeping when calculation of production is production order. However, as synonyms work orders can still use the terms: a project and object/facility. One project or facility can be realized as more work orders, and more projects or facilities may

realize as a working order, all due to cost reduction. For the clear view that to avoid any ambiguities in the text will only be used the term working order.
Monitoring costs of production to the level of each individual product, it is possible to achieve by using the system of production orders. Production order is to be used by the registered resources that are spent for the production of specific quantities of specific products. In this way, we collect all the direct costs (basic materials, auxiliary materials, cooperation and work on the construction) that arise in the preparation of certain products. When clearance of production orders or other indirect costs or expenses (other goods and services, a work directed by electrical energy, thermal energy, water, amortization and cost of administration and sales) are to be allocated it is used by selected keys on all work orders. The sum of incurred direct and indirect costs are becoming more cost for a particular work order, or product. Netheless to say, just the cost price for each manufactured product, which is obtained based on calculation of working order, allows the management of business systems to manage production costs and it is done in terms of monitoring by obtaining individual production orders. Thus, the basic purpose of introducing the working orders in a single business system is to manage costs of production in order to obtain the higher profit.
Introduction of production orders in production planning allows the comparison for a calculation with subsequent calculation, which is obtained based on the calculation of production orders. In this way, one determines the differences in costs and standards of planning and subsequent calculations to the next phase through specific measures and activities, which may have an impact on reducing costs. The meaning of the calculation of production orders in the manufacturing business systems is the calculation of cost price for each product that is produced in a specified time. Therefore it is necessary to perform monthly calculations of all the production orders that are in production, regardless of whether the production of those production orders are completed or are being continued in the coming months.
Direct or even referred to as direct costs, comprise all the costs that arise in the immediate production, and that can be directly associated with a specific product. The collection of direct costs per production orders does not constitute a greater problem. Indirect or indirect costs are those costs that arise in the immediate production but also outside the immediate production, and cannot be directly associated with a specific product. Therefore, the collection of indirect costs for each production order is a complex process. Considering that the given indirect costs cannot be collected by individual production orders as a direct cost, they are added to production orders according to specified timetable criteria. In the bookkeeping terminology criteria schedule of indirect costs, has also been called "keys to the indirect costs timetable." (More about it: Habek et al., 2002, 325)

The selection of a common indicator that in a situation best reflects the causes of the formation of indirect costs with respect to all types of products, determines the key schedule of indirect costs per production orders. The keys to the schedule of indirect costs represent the classical methods for allocating indirect costs per production orders. Uncertainty that regularly appears in the current calculation of production order is, the selection of keys or the keys to the schedule of indirect costs per production orders. The selection of the keys to the schedule of indirect costs is a subjective process for which there are no precisely defined and written policies.
One of the ways to solve the above-mentioned uncertainty consists in the following, that there are no traditional methods for allocating indirect costs in production orders, and it should be developed a new method for allocating indirect costs. It is therefore in the next chapter described a new method for allocating indirect costs in production orders under the title: Indirect cost allocated model.

4. INDIRECT COST ALLOCATED MODEL

The starting point for developing a model to allocate indirect costs is the budget of a company, in which are involved all direct and indirect costs. "The budget is a financial plan for the organization to determine revenues, expenses, etc. for a specified period. It usually involves admission, income from sales, costs, efficiency, cash flow, etc., and the control of the budget is used to be able to monitor your own performances and be responsible for the budget. "(Avelini-Holjevac, 1998, 95)
Consequently, budgeting is the process of planning and controlling of future operations to achieve planned business objectives and policies that are being established. In other words, before describing the model in mathematical form, and for more clear comprehension of the model, it is necessary to initially define certain terms used in the model, and they are:

- Costs are specific resources that should be sacrificed or to be waived in order to achieve a certain goal, by measures in monetary units which are also stated.
- The budget is planned sum of all types of direct and indirect costs to the annual level.
- The project as the name implies, also considers, beside the projects, other facilities and production orders depending on the type of activity that deals with the business.
- The capacity in the technological sense, represents the work position, a group of jobs, drive, while in terms of expense includes the following types of costs: costs of working hours, the associated indirect costs and other related indirect costs, which are obtained by allocation.

- Direct or direct costs are the costs under which consider only those expenditures that occur in the immediate production, or to those costs that can be directly associated with a specific project, facility or work order. However, for the purposes of this model of operation work costs are not classified in the groups of direct costs, but they are found in capacities costs.
- Indirect or indirect costs are those costs that can not be monitored by the level of individual projects, facilities or work orders, so you should need to allocate for each project, facilities or work orders. Thus, the indirect costs in this model are divided into: the associated indirect costs and other indirect costs.
- The associated indirect costs are costs that are immediately (directly) added to individual types of facilities. These may be the following costs: the cost of depreciation, maintenance costs, costs of medical examinations of workers, the cost of insurance for workers, etc.
- The other indirect costs include all those indirect costs that can not be sorted in by the previous group of associated indirect costs, therefore they should be allocated by individual types of capacities.

Indirect costs allocated model is shown in the following terms:

$$\mathbf{TP_{ij} = IT_{ij} + \sum_{m=1}^{n} TK_{mj}P_i} \qquad \mathbf{(1)}$$

Where:
i - the number of projects (i = 1, 2, ... n)
j - month of the year (j = 1, 2, ... 12)

TP_{ij} - cost of i-th project for the j-th month
IT_{ij} - direct costs of the i-th project for the j-th month
$TK_{mj}P_i$ - the cost of m-capacity in j-th month for the i-th project

Costs of the m-capacity in j-th month for the i-th project are equal to the sum number of product hours of m-capacity of which are spent on i-th project and the value of hours of that capacity:

$$\mathbf{TK_{mj}\,P_i = SK_mP_i \cdot VS_m} \qquad \mathbf{(2)}$$

Where:
$TK_{mj}\,P_i$ - the cost of m-capacity of the j-th month for i-th project
SK_mP_i - the number of m-capacity hours of which are spent on i-th project
VS_m - Value of the m-capacity hour

The value of m- capacity hour is calculated:

$$VS_m = \frac{TK_m}{SK_m} \quad (3)$$

Where:
VS_m - Value of the m-capacity hour
TK_m - the cost of the m-capacity
SK_m - number of the m-capacity hours

Based on this expression, using the hour values (prices) of each type of capacity it is possible to make comparisons with prices of hours of competitions on the market.
Considering that in the budget base preparation parameter for planning indirect costs to the value of an hour, a business management system receives a continuous way to control the planned and realized.
The costs of the m-capacity of the sum equals to the total value of hours for the m-capacity, and the value of the coefficient for other allocated indirect costs to the m-the capacity and associated indirect costs of the m-capacity:

$$TK_m = UVS_m + Vk_m + PNT_m \quad (4)$$

Where:
TK_m - expenses for the m-capacity
UVS_m - the total value of hours for the m-capacity of these
Vk_m - the value of the coefficient for other allocate indirect costs to the m-capacity of these
PNT_m - associated indirect costs of m-capacity of the

The coefficient value of these other allocated indirect costs in the m-the capacity is calculated:

$$Vk_m = ONT \cdot k_m \quad (5)$$

Where:
Vk_m - the coefficient value of the allocated indirect costs in the m-capacity
ONT - other indirect costs to allocate by capacities
k_m - coefficient for allocating of these other indirect costs in the m-capacity

The coefficient to allocate these other indirect costs in the m-the capacity is calculated as following:

$$k_m = \frac{\sqrt{SK_m \cdot UVS_m}}{\sum_{m=1}^{n} \sqrt{SK_m \cdot UVS_m}} \quad (6)$$

Where:
k_m - coefficient for allocating these other indirect costs in the m-capacity
SK_m - number of the m-capacity hours
UVS_m - the total value for these m-capacity hours

5. CONCLUSION

The indirect costs allocated model is set in a manner that the indirect costs are apportioned by capacity in two interrelated steps, the first step, the cost are immediately (directly) associated to certain types of capacity, and are called the associated indirect costs. The second step is scheduling the indirect costs that include allocation of these costs by using the coefficient on individual types of capacity, and resulting costs are named the other indirect costs.

The associated indirect costs are those costs that may result in connection with a particular type of capacity (a position, a group of jobs, drive) and most often are the costs of depreciation, maintenance, medical examinations of workers, security workers, etc. Other indirect costs include those indirect costs that can not be sorted in the previous group of associated indirect costs such as: costs of administration and sales, staff costs for operating expenses, insurance and protection of property, etc.

Table 1 shows the allocation of indirect costs by individual types of capacity in order to show the way in which to allocate indirect costs by using a model for allocations of indirect costs, all on the basis of test data.

Table 1 Allocation of indirect costs by capacity

1	Capacity type (**K**)	Locksmiths	Welders	Machining	Consultants
2	Number of capacity (**m**)	1	2	3	4
3	The total number of hours (**SK**)	*9000*	*7000*	*5000*	*2000*
4	Total hours value (**UVS**)	*180.000,00*	*175.000,00*	*150.000,00*	*100.000,00*
5	Coefficient for total hours value schedule (**k**)	**0,345**	**0,300**	**0,234**	**0,121**
6	Coefficients value (**Vk**)	**276.000,00**	**240.000,00**	**187.200,00**	**96.800,00**
7	Added indirect costs (**PNT**)	*5.000,00*	*70.000,00*	*120.000,00*	*60.000,00*
8	Capacity costs (**TK** =UVS +Vk +PNT)	**506.000,00**	**485.000,00**	**457.200,00**	**256.800,00**
9	Hours value (**VS** =TK : SK)	**56,22**	**69,28**	**91,44**	**128,40**

Source: calculated by author

Note: In the italics are indicated the values obtained by monitoring, and in bold are indicated
values obtained by using the model for allocating indirect costs.

In this example, the other indirect costs (ONT) that should be allocated by capacities by using the coefficient (k) in amounts of HRK 800,000.00. The calculation is made according to formulas 3 to 6, and the amount of allocated other indirect costs by the types of capacity can be seen from the number 6 which is located in the Table 1.
By the application of Models to allocate indirect costs it should be stated that the classical methods of process of indirect costs are omitted, and therefore, no longer should be used by subjective process when choosing keys for the allocations of indirect costs per production orders. Therefore, the model to allocate indirect costs represents a new dimension within the concept of managing the costs of production, which will definitely contribute to easier, and faster planning, monitoring, comparing, and reducing costs.

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KNOWLEDGE MANAGEMENT AS A DRIVER OF CONTINUOUS CHANGE MANAGEMENT IMPROVEMENT IN ACADEMIC INSTITUTIONS

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Abstract

Globalization processes have brought significant changes in society in general, on the market, in economy, and especially in academic institutions. The changes taking place through the Bologna process continually present new challenges to Croatian academic institutions. Programs such as Erasmus, Socrates, and others permanently support learning and research, as well as improvements in teaching in order to achieve higher levels of knowledge and competitiveness for teachers, researchers, and students. The trends in higher education show an increase in the following demands towards academic institutions:
- to organize higher education in the context of lifelong learning,
- to internationalize the education process and research,
- to cooperate and create an interactive partnership between university and business,
- to reorganize knowledge,
- to provide mobility and flexibility for "knowledge-producing" jobs,
- to continuously promote new knowledge and new expectations.

Knowledge based on an economic, i.e. business premise is marked by information production, transfer and dissemination – for universities in general, as well as for individual processes in academic institutions. The conclusion of different European (academic) commissions is that more should be invested in modernization and quality of university and other higher education teaching. The aim is to create a direct impact on the quality of education, to better implement new positive trends in university development, as well as to provide better facilities and equipment for all students, teachers and researchers.

JEL classification: H52, I23

Keywords: knowledge, higher education, university, academic institutions, change management, knowledge management.

1. Introduction

Significant changes in the society in general, i.e. on the market, in the world economy and national economies have significantly contributed to and have continuous impact on demands for changes in education in general, and particularly in higher education. The omnipresent globalization influences the

time and volume of these changes. Numerous projects have been established for better and more successful organization of academic education, with more or less success, and they contributed to the ultimate appearance of the prominent "Bologna Process", accepted by most of the European academic institutions and European universities.
Changes that are accepted by academic institutions may be formal and/or structural, or they can refer only to:

- Redefinition of the past events in an academic institution,
- Structural changes in organization of higher education today,
- Planning and programming future interventions in higher education organization and structure.

Changes may refer to the content of business operations of an academic institution, but also to the environment in which it is active as well as to the academic institution itself:

- In terms of national legislation,
- In terms of academic staff demands – professors and lecturers;
- In terms of demands of the current and future students, beneficiaries of academic education programmes.

Very often changes do not only depend on those who really work in academic education system. Most often these changes have resulted from the broader social context imposed to a certain extent to the wider academia. These changes have not had any significant influence either on change of organization structure or radical change of education content for years. However, adoption and implementation of the „Bologna Process" project bring radical changes to organization of classes, education content, time flow and teaching on the most of the European academic institutions and universities. „Knowledge and education are the most important resources of Europe, which is poor in raw materials, and those who invest in education, they invest in future "[1]
What follows the implementation of new development guidelines for academic teaching also necessarily brings facing with diversity in former organization of academic education as well. Diversity management is a term that has been more or less successfully analyzed, considered and evaluated for long time, and during implementation of new organizational interventions in academia it is necessary to take the diversities that exist on certain European universities into consideration, and to overcome by diversity management, more or less successfully, the conflicts that might arise from these diversities.

[1] Liessmann, K. P. (2008). Teorija neobrazovanosti. Zablude društva znanja, Naklada Jesenski i Turk, p. 7 (*Theory of Uneducation. Delusions of the Knowledge Society)*

2. Intellectual capital – foundation for development of academic institutions

The role and significance of intellectual capital has been constantly growing during the last decades. Attachment to intellectual capital and implementation of practices can be observed starting from economy, over research institutions and up to academic institutions. Knowledge management has become a skill, i.e. a course taught and studied on most of the European and world universities. However, not only academic institutions, but also economy, public sector, entrepreneurship, and state administration, to a large extent – all of them want, strive to learn and should know: how to manage knowledge, how to possess „a sufficient amount" of intellectual capital, how to acquire knowledge and how to transfer it. Ever more academic institutions become places of knowledge "production" and dissemination, i.e. transfer of new knowledge. How to organize knowledge transfer and how to start the national innovative system are the questions that European academia has been dealing with for many years. Predecessors to the Bologna process were:

- Sorbonne Joint Declaration 1998
- Bologna Declaration 1999
- Lisbon Agenda of March (Lisbon Council, 2000)
- Prague Declaration 2001

All the efforts for transparency of knowledge production, transfer and implementation, and involvement of certain national academic systems have had a goal to raise these national systems to a higher level, to include individual national knowledge systems in the European level. In this changed context of creation, production, transfer and implementation of knowledge, all academic institutions and research institutes must go through a very important transformational metamorphosis. In such changed conditions of organization and knowledge management, more and more attention is given to the quality of educational and research systems, their flexibility and readiness for fast adoption and implementation of upcoming changes. It is especially important for academic institutions to maintain constant transparency of the change process, possibility of process evaluation and ability of competition in relation to new implementations and innovations in the academic education and knowledge society system.

The "Sorbonne Joint Declaration" is a document by which basics of building and harmonization of European higher education system have been established. The Declaration was signed by 4 ministries of science, education and culture (France, Italy, Great Britain and Germany). The Declaration states that for the union of Europe not only euro, banks and economy are important, but also knowledge as well as building of intellectual, cultural, social and technical dimensions of Europe as a continent. These four countries, signatories of the "Sorbonne Joint Declaration", have the longest academic – university tradition. Universities were born in Europe more than three centuries ago. During the past

centuries, scientists, professors as well as students "circulated" freely, they acquired and transferred knowledge, communicated within a university and were linked to other universities. Knowledge and information dissemination (although without globalization, electronic and digital information, without the Internet) was at the very high level.

We are witnessing large changes in education, work conditions, and diversification of personal careers in higher education, necessity of life-long learning and impact of new information forms and new technological possibilities on improvement of scientific and research work; both of professors and students. New opening of Europe for changes, positive in the sense of applying new knowledge and new technical and technological conditions of studying and the teaching process contribute to elimination of barriers and to building of new organization structures in academic education. International recognition of challenging (attractive) potentials of own systems directly influence development of relationships in the process of education and learning, mobility of students and professors as well. The result should be reflected in ever better and more successful cooperation within academic institutions (universities), between academic institutions, both within a country and even more at the European level. In its theses, the "Sorbonne Joint Declaration" proposes more originality and flexibility for the unique European academic education and information dissemination system by introducing and implementing ECTs scheme and one-term teaching. Evaluation of teaching and participants in the form of ECTs points gives initial choice and provides continuous education on different European universities. The readiness to implement particular unifications provides the opportunity for students to enter the academic world at any time of their professional life, regardless of the academic environment in which they have studied so far. Undergraduate levels would have different programmes, involving demands for the multidisciplinarity of the studies, development of knowledge and skills in foreign languages, and willingness to learn and use new information technologies. International acknowledgement of the first level and recognition of qualification is important for success of these propositions at international, i.e. European level. Graduate study would provide the main choice between shorter and longer doctor degree studies, with possibility of transfer from one to another. Both graduate studies would include possibilities for research and independent research work as well. Both undergraduate and graduate studies offer the opportunity for students to study during one term on some European university, according to their own wish and choice. At the same time the opportunity is also provided for teaching staff, professors, to work on European universities (for countries – EU members). The European Universities Rector Conference has given a stimulus and support to implementation of the "Sorbonne Joint Declaration". The convention, acknowledgement of higher

education qualifications in European academic circles received its statement and confirmation on the conference in Lisbon in 2000.
Two years following the signing of the Bologna declaration and three years after the Sorbonne Declaration, European ministries of higher education presented a programme (2001) at the conference in Prague. The Declaration in Prague was signed by 32 participants of the conference. The conference in Prague has brought a whole range of directives and priorities for implementation of the Bologna process. Foundations for development of higher education have been determined. Implementation of the declaration is in the process, and it is developing according to the adopted guidelines and recommendations of the Bologna process signatories.

The following was agreed according to the Prague Declaration:

- „Adoption of a system of easily readable and comparable degrees
- Adoption of a system essentially bases on two main cycles
- Establishment of a system of credits
- Promotion of mobility
- Promotion of European cooperation in quality assurance
- Promotion of the European dimension in higher education“[2]

The European University Association, the European Association of Institutions in Higher Education (EURASHE), the National Unions of Students in Europe and the Council of Europe continue cooperation and coordination on building of a unique system of European education at all levels.

3. Knowledge society – Bologna Declaration

All European universities, being the centres for intellectual capital development, bring into legacy different starting points, rich history and tradition of academic education. Richness in diversity, high professional level of academic education, high domination of national orientations bring a range of advantages, but they also put numerous hindrances to process unification according to the Bologna Declaration. European academic institutions and universities have different education profiles at their base, whose jurisdiction ranges from public to private funds, both in teaching staff profile and student population. Changes proposed by the Bologna process, globalization, intensive internationalization, and spreading of knowledge society, implementation of new forms of information and information technology, new pathways and communications put an obligation in front of all education institutions to adopt new achievements in their own educational cycle. Although application and

[2] Prema: Prague Declaration, Towards the European Higher Education Area; Communique of meeting of European Ministers in charge of Higher Education, Prague, May 19th 2001., str. 1-3. http://www.europeaum.org/content/view/60/65 23.2.2009.

implementation of reforms of the new European academic education system is continuously being monitored in a critical and analytical way, changes are still inevitable. According to one of the conventions[3], European Commission, Directorate General for Education and Culture provide certain components and conclusions of the current phase of the Bologna process implementation:

- "Holistic Bologna"[4] – represents a process that involves relationships within the system and the integral process as such, for example, links between creating a Bachelor/Master degree structure, scoring system and accumulation system institutions, up to the opening of a life-long perspective. The figure in which an experimental learning cycle is represented brings in relation a certain former experience toward the concept of the new on one side; and current experiments according to the conclusion arising from that. "Accommodative knowledge" and "Convergent knowledge" are taken into account on one side, against "Divergent Knowledge" and "Assimilative Knowledge". Transformation via Extension and via Intention brings to certain conclusions relevant for determining the development guidelines.

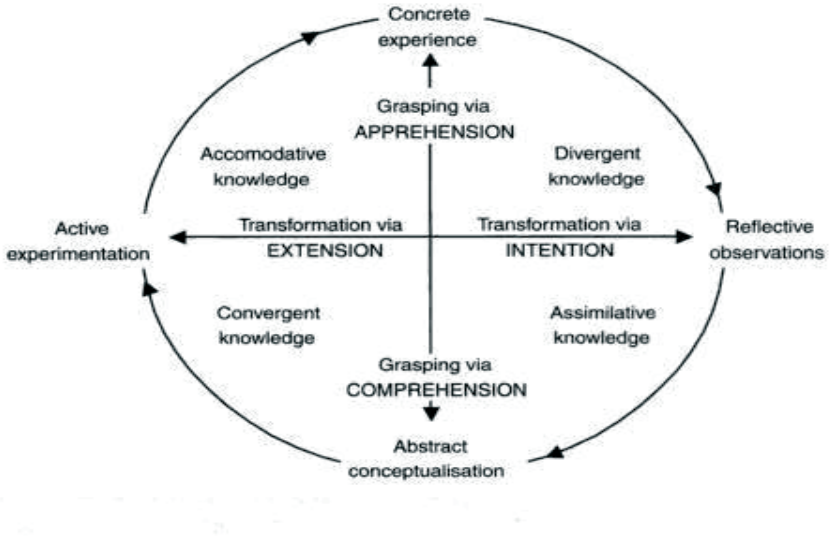

Figure 1: Kolb's Experimental Learning Cycle[5]

[3] Trends in learning structures in European Higher Education III, Bologna fours year after: Steps towards sustainable reform og higher education in Europe (2003), European Commission, EUA Graz Convention,
pp. 15-17.
[4] Idem, pp. 15-17.
[5] McPherson,M., & Nunes, B. M. (2004): Developing Innovation in Online Learning, An Action Research Framework, Routledge, str. 15

- Analysis of the Bologna process ("Systemic Bologna"), in terms of guidelines and programmes involves the overall, systematic implementation of the Bologna process. Integration of all elements in one unit should result in implementation not only in the area of learning and education, but it also includes administrative and infrastructural business functions, and all institutions of that process's financing. The reform of European higher education cannot be successfully implemented without mutual efficient and effective linking of all elements in the process into one unit.

- Ambivalence of the Bologna process ("Ambivalent Bologna") in practice means two reform lines and potential conflicts or disagreements that arise during the implementation programme:

- Firstly, in the specific qualities of the programmes that exist in certain national systems; in relation to global competitiveness. It is very important to continuously promote transparency in the structure of organization, but also to promote transparency in the cooperation of European partners, respecting funds as well as students and researchers, i.e. professors. Such a transparent programme requires higher concentration of excellence and more competition centres as well as clearer outline of excellence strength. The implementation process actively includes all strictness in the treatment of individual weaknesses of particular system units. Process weaknesses should be urgently removed from European academic education, and ever better results and growing competitiveness of higher education should be continuously achieved.

- Secondly, ambivalence of the Bologna process should also reflect in the social circumstances of implementation, taking into account the "stressfulness" in communication and cooperation of Bologna partners. Building of a new unique European higher education starts from solidarity among the equal and different partners, flexibility of approach, care about certain people and certain content.

- Promotion and improvement of the Bologna process ("Furthering Bologna"[6]) –significantly contributes to positive acceptance and implementation of established goals of higher education according to the determined rules of "Bologna". The programme for promotion of "Bologna" questions and analyzes the reality of the goals set in development of European higher education. Not one point of view or a point important for creating and continuous development of European higher education should be omitted. What is also undisputable is the constant finding of new professors as well as raising the quality of teaching staff, i.e. professors. Without a good and professional engagement and diligence

[6] Idem, str. 15-17

of teachers, i.e. professors, there will be no positive results in the Bologna process. "The spirit of times deals with this problem under the title 'education ethics'"[7]. The problems of ethics in the knowledge transfer as well as the question of human knowledge management are issues requiring discussion within the Bologna process implementation and a clearer definition.

4. Conclusion

The European University Association, the European Association of Institutions in Higher Education (EURASHE), the National Unions of Students in Europe and the Council of Europe continue cooperation and coordination on building of a unique system of European education at all levels.
Erasmus, Socrates and other programmes in the framework of "old Europe" bring innovations and demand radical changes in academic education.
All programmes respect redefinition of the past events in an academic institution, as well as structural changes in organization of higher education today, and influence the planning and programming of future interventions in organization and structure of higher education.

Knowledge based on economic premises bears basic characteristics of production, transfer and dissemination of information, both for universities in general and for all individual processes in academic institutions. The conclusion of various European (academic) committees is that more investment should be made into modernization and quality of teaching at universities, in academic institutions, in order to directly influence the quality of education and provide better implementation of new positive trends of university development, but also to provide better equipment for all professors, scientists and students at universities. Transparency of the process, structural convergence in diversity of national education systems, programme mobility, cultural and linguistic diversity, and transferability of knowledge evaluation of both students and professors of various academic institutions – all of these are challenges, limitations, but also possible and achievable advantages in implementation of the Bologna process and better management of intellectual capital in Europe.

[7] Liesman, P. K. (2008), Idem, str. 64

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METHODOLOGICAL TRAFFIC LOAD SURVEY OF THE ROAD SV. LEOPOLDA BOGDANA MANDIĆA WITH A QUEUING MODEL

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Abstract

The traffic in Osječko–Baranjska County is strongly marked by the regional road named *Sv. Leopolda Bogdana Mandića* (so-called "*Čepinska cesta*"). With its high traffic density and specific significance, this road is negatively characterized by traffic jams, waiting, minor and major accidents. Statistical data for the Republic of Croatia indicate that this is one of the roads with the heaviest traffic load in the country. In an experimental study conducted using traffic, operational and statistical methods of measurement, the problem of *Poisson queuing model* with a single waiting point was recognized. High frequency of vehicles exceeds the expected and assumed number of clients in a queue, which increases the average waiting time in the queuing model. For this reason, stationary traffic counting is undertaken in order to establish the traffic load. These results, as well as those for waiting times, confirm it is necessary to propose a new traffic organization for this road, which would decrease avarage waiting times and eliminate unneccesary halts. This in turn would increase the flow rate and minimize negative traffic situations.

JEL classification: C41

Keywords: traffic density, stationary traffic counting, peak periods, Poisson queuing model, rationalization, statistical analysis

1. Introduction

The traffic on the road named *Sv. Leopolda Bogdana Mandića* is not channelled in an optimum way, which is reflected in frequent traffic loads. This road has a significant impact on linkage between the city area and its satellite towns. At the same time it also passes through an industrial area in which most of the Osijek-based companies are situated, thus additionally increasing the traffic load by people driving to and from their jobs, especially in the peak periods.
Such a situation has been confirmed by traffic counting, where, based on the previous hourly traffic count data and current (real) count results, we confirmed the issues of waiting and halts. Existing results do not differ from the previous results, and they announce great struggle to find possible solutions.

This queuing as well as any other is characterized by irregular or accidental arrivals (although the average number of arrivals in a unit of time is known to us, it cannot be accurately predicted for each specific period), and also by the fact that the time for each service is different (the average service time is known, but it cannot be applied to every situation) (Gaither, 1987, 371).
All queuing models do not strive for a single, the best solution, because, as a rule, there is no such solution, but they describe the queuing behaviour by using the estimated parameters, like average waiting time per time unit or average service time. By changing these parameters different results are obtained and optimum solution is the solution considered the most realistic one in a certain moment (Barković, 1999, 204).
Only one of the many possibilities for application of the queuing model theory as quantitative method is presented in this paper. The model analyzed here is the Poisson single server queue. ((M/M/1) : (GD/∞/∞).
Possible improvements have been established, based on the collected data, with the aim of achieving safer and faster vehicular traffic flow with minimum delays and queues.
For the purpose of presenting the count results, descriptive parameters have been used on the road named *Sv. Leopolda Bogdana Mandića*, as the most represented and flexible ones in this type of predictive observation. Descriptive research methods are sometimes called normative research methods, because their primary function is to provide understanding of complex meanings of many discrete events. With such approach we research the traffic situations that demand application of observation techniques as the main method of data collecting. The dynamics of the traffic is reflected in turbulent observations.

2. DEVELOPMENT OF THE ROAD TRAFFIC

The first roads in Slavonia were built by the Romans at the beginning of the Christian era. The Romans had real road building teams, traffic signs along the roads, road maps showing the number and the type of the road, distance from the settlement and a station, signposts, lodging houses, and everything required by modern traffic, as it is shown on the Peutinger map[28]. In oldest of times simple footpaths turned into unsurfaced roads, and these were trodden until they

[28] Peutinger map is a road map of the Western Roman Empire, the only known surviving map of the Roman roads. It dates back to the 3rd or 4th century Anno Domini. One copy was obtained by the German humanist, Konrad Peutinger (1465-1547) from Nürnberg. The map was named after him: Tabula Peutingeriana. It is made in 8 sections on four sheets. Croatian countries are situated on the second sheet, i.e. section III: SEGMENTVM III. a Marcomannis ad Sarmatas vsque, i IV: SEGMENTVM IV. a Sarmatis vsque ad Hamaxobios. The Adriatic Sea is elongated in the west-east direction. The following Croatian countries can be found on the map: Isteria, LIBVRNIA, DALMATIA, Pannonia Superior, Pannonia Inferior.

became real roads. Travelling was fast and safe, because the road network system was good both for passenger and goods traffic. At Roman times main roads respected natural advantages and they were linking East to West and North to South through the Pannonian Plain (Dmitrović, 2007, 18).
Land traffic was characterized by the lack of hard topped roads, and by weak linkage of Slavonia to east-west and north-south directions. On most of the roads travelling was possible only during nice weather. All of this represented a large disadvantage in the traffic and economy of Osijek, Slavonia and Croatia (Pavličević, 1994, 29).
The road traffic was developing rapidly through history, especially at the time of the first cars, which resulted in even better and improved construction of the road network system. Roads covered large distances, all with the goal of transporting people and goods, which shows that traffic has played an important role in the social and economic development from the trodden pathways until today.

2.1. Road network system of Osijek – Baranja County

The dynamics of construction of roads and crosses in the period 1888 – 1892 can be observed in the "Account of the built ceramite roads and crosses in the town of Osijek" of November 20, 1892 (Davidović, 1982, 53). A conclusion can be drawn that construction of ceramite roads contributed to significant progress of overall infrastructure, but it also was an economic warning to introduce new materials and techniques in construction of town roads, which resulted in good town roads. Also, the regulatory basis in the form of the *Regulation Statute for City of Osijek* from 1901 was adopted, defining the wideness of newly designed roads.
Osijek is situated in the star-shaped intersection of roads leading to the following directions; Osijek – Beli Manastir, Osijek – Dalj – Erdut, Osijek – Vukovar, Osijek – Vinkovci, Osijek – Đakovo, Osijek – Našice and Osijek – Valpovo. This implies good linkage of the city with the neighbouring centres, but there is also an inevitable need for thorough modernization of these road directions (JAZU, Centar za znanstveni rad Osijek, 1981, 184). The purpose of the roads outside of settlements is to link the surrounding settlements and towns with regional centres in order to make the road network system dynamic and to provide safe and fast arrival for selected itinerary. The centre of Osijek-Baranja County has a central connection with roads outside of settlements that bypass or go through the city centre, which sometimes results in traffic delays and waiting. The road named *Sv. Leopolda Bogdana Mandića* (also called 'Čepinska cesta') is one of the linkages on the traffic route Osijek – Đakovo and vice versa, and entrance into the city from the direction of Đakovo additionally loads this road, which then results in traffic delays.

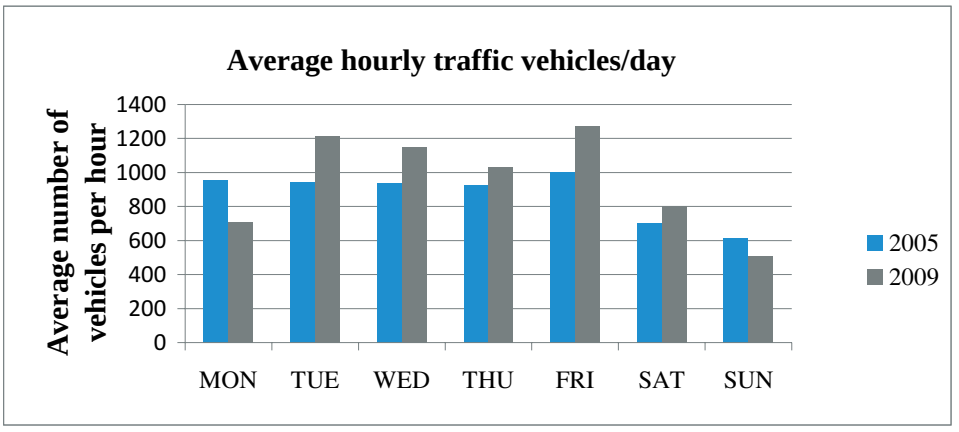
3. THE *SV. LEOPOLDA BOGDANA MANDIĆA* ROAD

This road is characterized by significant traffic load, which is shown by evaluation of situation. The traffic load is significant and it is in interaction with everyday traffic issues. Traffic issues reflect in waiting and frequent traffic jams that result from an insufficiently developed traffic organization, which causes problems in the usual traffic flow. There is a whole range of unsolved problems on this road, and among the larger ones is a level crossing, where the traffic is stopped at certain times when trains are passing, which causes unnecessary queuing. The vicinity of shopping centres and industrial facilities add additional load to this road, bringing people into direct collision with observed road issues, especially during periods when movements toward shopping centres are increased.

2.2. Evaluation of the previously observed and of the existing traffic situation

Stationary traffic counting (recording) of vehicles in movement that pass through the observed section in a time unit provides data about arrival and leaving of units on the observed section of the route. Hourly recording during peak periods was conducted seven days in a week, for the purpose of confirming and presenting the vehicular traffic flow on the *Sv. Lepolda Bogdana Mandića* road. By evaluation of the collected data for (2005/2009), new considerations are established, demanding rational dimensioning of the observed road.

Chart 1. Average hourly traffic per day on the *Sv. Leopolda Bogdana Mandića* road (D7) in 2005/2009



Source: Hrvatske ceste d.o.o., Traffic count on the roads of the Republic of Croatia, Zagreb, 2005, and Authors, 2009

The Chart 1 provides traffic count results by days through hourly traffic load out of summer months. The average hourly traffic on a weekday (Friday), considering both of the observed periods (2005/2009), reaches the highest average number of vehicles per hour of 954 (2005), and 1273 (2009) vehicles. By comparing data from these two years, a conclusion can be made that there are no specific deviations in terms of extreme values. However, as it can be observed, Monday and Sunday record opposite results, considering the assumed range of obtained data in 2009 in significantly higher values.
Reducing the number of vehicles and queuing results would result in an increased flow of vehicles through the observed section in a unit of time. The subject issues are supported by the presented data, with emphasis on rational elimination of the problem as a measure for further development of the road traffic.
Infrastructural facilities along the road also cause problems in terms of reduced traffic flow, for example, level crossing at the same level as the road, forbidden left turn from the observed *Sv. Leopolda Bogdana Mandića* road to Sv. Ana road. Shopping centres (Lidl, Interspar), other companies and petrol stations additionally attract clients and create problems when joining traffic in the main road.

4. METHODOLOGICAL SURVEY OF THE POISSON SINGLE SERVER QUEUE

Queues are, undoubtedly, everywhere around us. They are formed whenever units entering a system in order to be served, or entering the places providing the service, "wait" (Runzheimer, 2007, 427). On *Sv. Leopolda Bogdana Mandića* road, a queue consists of all vehicles waiting to come to the first position in a queue in order to join the traffic in the roundabout (i.e. they are waiting for service). The number of vehicles, i.e. traffic flow volume, represents the average (expected) number of clients arriving in a unit of time (λ), and the capacity of observed passing through represents the average (expected) number of clients that were served in a unit of time (μ).

In order to present a quantitative approach to the analysis of queuing on the *Sv. Leopolda Bogdana Mandića* road, we selected the *Poisson model* which implies a single server queue, general service discipline, and no limitations in terms of the allowed number of units in the system and source capacity. Written in Kendall's notation, this is the expression:

(M/M/1) : (GD/∞/∞)

The assumption of the model is that the average number of vehicle arrivals does not depend on the number of clients (vehicles) in the system ($\lambda_n = \lambda$ for all n),

or on the average service rate ($\mu_n = \mu$ for all n). The percentage of time during which servers are occupied, i.e. the system utilization, can be calculated in the following way:

$$\Psi = \frac{\lambda}{\mu}$$

The probability that there are no units in the system:

$$p_0 = 1 - \Psi$$

In order for such a queuing model to function and in order to satisfy the condition of system stability, the following requirement must be met: $\Psi < 1$, that is $\lambda < \mu$. Otherwise the queuing model will strive for infinity and service provider will not serve all the clients (vehicles), because their arrival rate per unit of time would exceed the number of services that a service provider can perform.

Basic system parameters (Barković, 2002, 414):

- *Expected number of units (clients) in the system*

$$L_s = \frac{\Psi}{1 - \Psi}$$

- *Expected number of units (clients) in the queue*

$$L_q = \frac{\Psi^2}{1 - \Psi}$$

- *Expected waiting time in the system*

$$W_s = \frac{L_s}{\lambda} = \frac{1}{\mu(1 - \Psi)}$$

- *Expected waiting time in the queue*

$$W_q = \frac{L_q}{\lambda} = \frac{\Psi}{\mu(1 - \Psi)}$$

There were on average 710 vehicles (λ) in a time period of one hour that passed through the observed road, and the average service time, i.e. time needed for a vehicle to enter the roundabout is 5.01 seconds. In other words, on average 718 vehicles (μ) entered the roundabout within an hour. As the λ parameter (the number of vehicles entering the system) is smaller than the μ parameter (the number of serviced vehicles), this implies the stability of the system. The following solutions were obtained by using the Poisson model ((M/M/1): (GD/∞/∞):

- Ψ = 0.99 (the probability that there are vehicles in the system is 99%)
- p_0 = 0.011 (the probability that the system is empty, i.e. that there are no vehicles in the system is 1.11%)
- L_s = 88.75 (the average (expected) number of vehicles in the system is 89)
- L_q = 87.76 (the average (expected) number of vehicles in the queue is 88)
- W_s = 0.125 (the expected (average) waiting time in the system is 0.125 hours, i.e. 7.5 minutes)
- W_q = 0.1236 (the expected (average) waiting time in the queue is 0.1236 hours, i.e. 7.42 minutes)

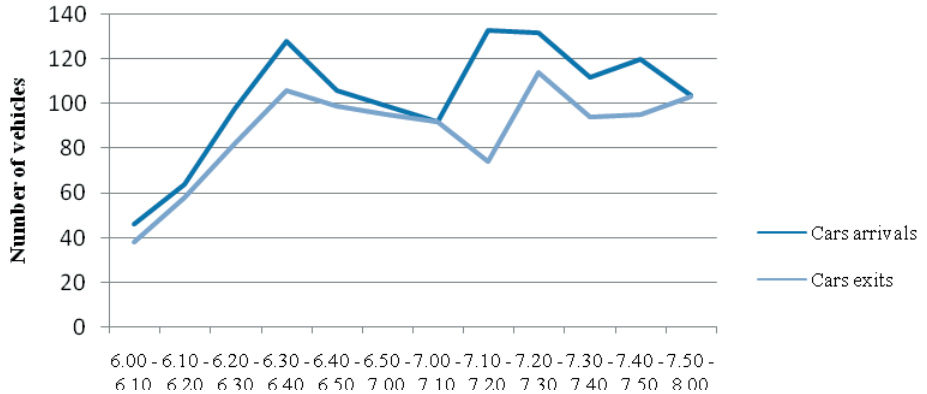
Achievements of the Queuing model theory have enabled development of various models of service level, i.e. methods for determining intersection efficiency measures, like the average delay and length of the waiting line.[29]

5. STATISTICAL DATA ANALYSIS OF A SINGLE SERVER QUEUING MODEL

Experimental study conducted by counting, i.e. measuring fluctuation of vehicles in the morning time interval on the *Sv. Leopolda Bogdana Mandića* road has given satisfying results of descriptive parameters. The stated interval represents a highly frequent, but also turbulent time frame determined by basic economic factors.

[29] http://www.gradst.hr/files/users/dcvitanic/teorija_prometnog%20toka.pdf Access (27-02-2009)

Chart 2. Car Arrivals and Exits in the period 6.00 – 8.00 h



Source: Authors, 2009

According to the Chart 2 we clarify the data for the traffic count on a weekday, or more precisely, on Monday. The morning period from 6.00 – 8.00 a.m. has been determined as the observed time period, when, due to economic factors, traffic starts and grows. The following vehicles passed through the road in the observed interval: personal vehicles, cargo vehicles, buses, motorcycles, mopeds, bicycles. The lowest value of frequency distribution was recorded with the number one, while the highest value was the quantity of 167 vehicles in ten minutes, with the average deviation of 10.63 vehicles in six time intervals within an hour (7.00 – 8.00 h), while in an earlier period (6.00 – 7.00 h) 146 vehicles passed. Most vehicles are personal cars, in ten minutes of the time interval (6.00 – 7.00 h) there were 584 cars, with the average of 97.33 cars and average deviation of 9 cars (δ^2 = 81.11 cars). In a somewhat more dynamic interval (7.00 – 8.00 h) there were 726 cars in traffic. In about ten minutes there were on average 121 cars, with the average deviation of 10.04 cars (δ^2 = 100.83). Waiting time on the level crossing, being on average 3 minutes, has extreme values.

The basic descriptive parameters of the observed road have been verified in the dynamics, and supported by SPSS calculation (statistical data processing software), v. 16.

6. CONCLUSION

From calculations it can be observed that the probability that there are vehicles in the system amounts to 99%. Vehicles intending to go to the city through the *Sv. Leopolda Bogdana Mandića* road during the peak period can expect that on average there will be 88 vehicles queuing before them and that they will have to

wait for approximately 7.5 minutes. As we talk about the average values, it is possible for vehicles to leave the system in a much shorter period, but it is also possible for them to lose as much as fifteen minutes of their time on this road, depending on the moment in which they go through. The result of methodological accounts indicates the necessity for a new proposal for improvements in dealing with issues on the section of the *Sv. Leopolda Bogdana Mandića road*.

For the purpose of solving traffic load problems, channelization of the road should be conducted through gradual delevelling. Level crossing should be conducted at two levels, thus avoiding the conflict with the road traffic while the swing-gate is down and unnecessary waiting. By removing the ban for turning left to the road named *Sv. Ana*, a possibility would be provided for drivers whose intention is not to enter the roundabout, but they do so because they have no choice, to leave the *Sv. Leopolda Bogdana Mandića* road here. Evaluation of the observed roundabout reveals the need for directing the traffic to larger number of exits, for example, to connect entrance to "Interspar" to the *Vinkovačka ulica* road, because vehicles heading in that direction would not have to enter the roundabout.

Conclusions of dynamics were made by methodological measuring through statistical parameters. Namely, large average number of vehicles in the minimum time interval of ten minutes records high average number of vehicles, or, more precisely, cars (as the most represented vehicle on the observed road) with their extreme and non-linear movements. A conclusion can be drawn that the *Sv. Leopolda Bogdana Mandića* road implies the high traffic level in Osijek– Baranja County, whose final result is queuing and overall traffic „nervosity". Considering the growing dynamics of economic trends, the observed road will record ever larger and more dynamic results also in the future traffic flow.

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STRATEGIC MANAGEMENT OF PUBLIC RELATIONS IN EDUCATION

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Abstract

Public relations is the strategically focused two-way communication to achive a certain goal. PR department plans and implements strategies to inform and gather support for the relevant public. The role of public relations in building knowledge societies is also sensitizing citizens and create a positive social climate for the acceptance of new programs and projects in the wider public, as well as ensuring the active participations of target public and the construction of the positive publicity, which allows PR in proactive action to prevent the emergence of conflict situation. If, however, demonstrate the need, PR department implements integrated communication strategy with the aim of reducing the negative publicity.

JEL classification: I21

Keywords: public relations, education, knowledge societies

MISSION AND TASK OF PUBLIC RELATIONS IN EDUCATIONAL SYSTEM

Raising quality and improving the educational system by 2010. is a strategic goal of Ministry of Science, Education and Sports of the Republic of Croatia. This is the project that has been conducted in our educational institutions for four years. The basic strategic document for its realization is Education Sector Development Plan that was adopted by the Government in June 2005. The project follows defined priorities that wish to standardize the quality of the entire educational system, enable its accessibility to everyone, but also improve teachers' professional education and improvement. In that context, the basic task of PR is to organize and pass on the desired messages to target public. This is about the communication whose goal is to achieve better understanding and acceptance of necessary changes that come with the process of raising quality and improving the complete educational system. Ministry of Science, Education and Sports, as holder of the project of improving Croatian educational system in accordance with European standards, introduces numerous changes in national scholastic and higher-education system creating pedagogical curriculum. Programmes such as introducing Croatian National Educational Standards in all primary schools, national exams and state graduation exam, reform of higher

education and coordination with Bologna Process, and development of science and technology system are main guidelines towards the society of knowledge. Therefore the role of public relations department is to inform and raise awareness of the citizens in order to create atmosphere of positive social climate for acceptance of new programmes and projects in the general public. PR strategies of two-way communication, informing and development of positive publicity are specially oriented towards gaining support from relevant public that is expected to actively participate. Proactive public relations also contribute to preventing potential conflict situations that would result in negative publicity.

INTERNAL AND EXTERNAL PUBLIC

Ministry, as holder of the project, has to take care about target public that is "inside" educational process, whether it is applying, shaping or "consuming" it when planning strategic communications with which it wants to win favour and support of the public. Internal public is made of expert associates that take part in creating new educational programmes and their evaluation; employees in educational process that every day in direct contact with pupils and students apply gained knowledge and recommended methods, unions in education area, and pupils and students. Since the improvement of social and material position and the development of knowledge and skills of educational staff is mentioned as one of the priorities in making the society of knowledge, we can say that union goals correspond with Ministry's goals, but in practice we are often witnesses that it is the unions who are "hot issue public"[1], especially when negotiating pay rise. Also, pupils and students are often the most critical public, unwilling to accept new things. Besides internal public, public relations department must also lead proactive relations with the so called external public, which includes political, financial, media and local public.

STRATEGIC PLANNING OF PUBLIC RELATIONS

1. RESEARCHES

The first step of strategic planning of public relations includes researching internal and external environment in order to establish the purpose of communication for each relevant public. Researches are conducted through survey or interviews with so-called focus group about certain subject. Studies of media contents (clipping), or so-called "desktop research" are also useful. They are actually internal research of existing data (like statistical indicators, complaints studies, etc.). So-called secondary researches of external statistics

[1]Polemic public

are also useful, where the existing researches are used, but they are analyzed in a secondary way considering current problem.

2. PURPOSE AND SELECTION OF MODELS, CHANNELS AND TECHNIQUES OF PR COMMUNICATION

The role of modern public relations is not only to inform any more, or to create positive publicity, now PR practice is based on scientific research and two-way communication that ensures feedback about effects of our communication. Contrary to two-way asymmetrical model whose goal is to persuade, two-way symmetrical model of PR tries to gain mutual understanding. Understanding is achieved through direct negotiations with relevant target public. Apart from choosing a model and defining the purpose of PR communication for particular target public group, strategic planning also implies choosing communication channels and the most appropriate techniques that will be used. Messages have to, above all, attract attention and be understandable to particular target public they are intended for. Specifically, we want our target message to be noticed and remembered and to cause reaction in accordance with viewpoint that we are sending. The most common basic techniques are: PR writing, making printed media material (press release), organizing press conferences and preparing speeches for public appearance. Choosing the technique depends also on the medium.

2.1. BASIC PR TECHNIQUES CONSIDERING THE MEDIUM

The most important channel of communication are media. Messages for media have to contain so-called news values, i.e. have to contain new things that journalists, editors consider valuable for publishing. The most common form is press release. Printed material for journalists has to be informative and edited in a strict way, even though this kind of relation with the media enables free publicity. Using press release organization wants to present positive picture (image) about itself, its work and programme to the public, but apart from informing the media about something new, it is also used in situations when institutions have to react to negative information that are going around in public in order to refute them.

Press conferences are also used very often to present news. Contrary to press releases, conferences are organized in order to ensure better media coverage. The reason for organizing so-called classic press conference is an important event or announcement that is usually presented by leadership itself. Experts can also be present to give additional explanations to journalists' questions. Anniversaries, awards, good business results are the most common cause for

organizing so-called press party, more relaxed form of press conference that includes party for the participants. Press conference is combined with banquet or reception, while for routine mediation of professional information press briefing is used. They are used mostly by organizations that journalists show great interest for. At such brief press conferences short, professional information concerning current problems are presented, as well as so-called background information.

Written material for the radio is, first of all, meant to be spoken, therefore they have shorter form, but the advantage of the radio is that the information sent as press release can immediately be passed on. Besides informative broadcasts, numerous current topics from education area are suitable for radio interpretation through various genres like interview, comments or debates with several expert collocutors, or through surveys that show the opinion of general population about certain hot subject or problem.

Speaker's preparation for public appearance is extremely important because insecurity in the voice (e.g. because of stage fright) can create the impression of unconvincingness with the listener. Therefore voice control, rhythm of speech, special emphasis on certain expressions, as well as skilfully inserted joke or anecdote can contribute to successful public appearance, i.e. presentation of the topic that speaker represents. Speaker has to be familiar with broader strategy of PR, i.e. with the image of the institution we are trying to achieve in public, as well as with special PR programmes that are in progress. Messages have to reflect certain consistency, in other words they have to be in accordance with the mission and goals of the institution it represents. Besides preparing the speech in accordance with the rules of classic rhetoric, speaker's preparation for interpretation is also very important. Therefore PR consultants prepare strategies for two-way communication in advance, or in other words they are trying to predict questions, develop viewpoints and make a simulation of how will the statements work in the media.

2.2. TECHNIQUES CONSIDERING BROADER INTEGRAL FUNCTION

Today theory and practice talk about *Integrated Marketing Communication* (IMC) that represents strategic integration of multiple communications with target market. According to Meler, IMC developed as a result of marketing understandings that certain promotional or communication activities should not be used independently, but integral (integrated) approach is necessary in order to achieve synergic communication effects. Marketing communication mix consists of five main forms of communication: advertising, public relations and publicity, sales improvement, personal sales and direct marketing (Meler 2005,

261). Basic difference between advertising and publicity[2] is that the latter is free while advertisements are paid promotion. According to Meler, publicity also has significant advantages in relation to advertising. In fact, since it is usually created by journalists or "third parties" it is more convincing and acceptable for consumer because it represents trustworthy information separated from advertising messages – which creates the impression of objectivity with public, even though it actually functions in indirect way, actually it mostly represents the same thing as institutional advertising, only in concealed way. Publicity messages always contain news and can be broadcasted more quickly than advertising messages, but they are mostly one-time (Meler 2005, 293).

As the effects of mass advertising weaken, marketing experts turn more and more to public relations whose costs are more effective, and to new media and technology. Marketing of immediate reaction (direct response) is used more and more, starting from creating users databases, using new technological possibilities for the development of long-term relations with them, as well as for 'transformation' of satisfied users of services into future advocates of the company or institution. For example, besides classic public relations, Ministry of Science, Education and Sports issues press releases on its web pages. In order for their users to be informed about changes of content on a regular basis, database with e-mail addresses of interested users was created and they are promptly informed about new contents in the public releases section. E-mail with the notice also contains the link, which is an advantage, because the text can be opened with only one click. According to the number of clicks it is possible to 'measure' how much attention did the certain topic drew.

3. METHODS OF PR IMPLEMENTATION CONSIDERING THE DURATION

Creating events is one of the most important instruments of marketing public relations. Companies, institutions or non-profit organizations plan the so-called events, unique happenings, which will most certainly draw media attention. In situations when there is no extraordinary news, companies can use positive publicity caused by the 'event' in order to gain sympathy from target public or to inform about their activities, products and services.

Creating events is an extremely important ability in encouraging for raising necessary funds for non-profit organizations that have developed broad repertoire of special events like auctions, charity dinners, book sales, fairs (Kotler, 2001, 676).

[2] Old name for marketing public relations was publicity, and it role was to ensure editorial space – as opposed to paid space – in the press and broadcasting media in order to promote products, places and people

Contrary to the event which is one-time happening, campaigns consist of more various events that take place in certain time intervals and are gradually intensified. Specifically, in leading communication campaign the point of culmination, or central event, and the campaign ending are set in advance. Contrary to creating events, whose role is to publicly express viewpoints, communication campaigns try to ensure positive response or support to the organization in particular moment.[3]

Programmes are continued communication process that exists as long as the need for informing exists. Since this is more extensive communication with public, PR department is the one that organizes and leads communication programme, and final goal of communication with target public is achieving mutual understanding and support to the organization. Programmes can include various techniques and

channels.

RELATIONS WITH RELEVANT PUBLIC

1. RELATIONS WITH GOVERNMENT AND INTERNATINAL INSTITUTIONS

For gradual realization of changes in educational system, apart from material and personnel conditions, it is necessary to achieve harmony of social, professional and political circles. Ministry's task is to prepare documents' proposals that are created by competent experts, scientists and practitians. All documents, before entering due process of law, must pass public discussion.[4] Documents' proposals are also published on web pages, therefore all interested citizens have a chance to get an insight into them and can through standard mail or electronic mail express their opinion or give good suggestions. Final versions of the documents are then presented to the Government of the Republic of Croatia, or to legislative body. Proposed documents are also discussed about in Parliament, which can accept proposed documents or return them back to be "finalized".

Public relations in the segment of political public are based on lobbying whose goal is to ensure support in passing the law and communicating about effects of passed measures. Considering that the most important agreements with international institutions are negotiated and signed on highest levels, reputation and credibility of the institutions that take commitments are extremely

[3] Educational campaign *"Ususret državnoj maturi" starts. Available on: http://public.mzos.hr/Default.aspx?art=8643 Accessed: (8-9-2008)*

[4] *Nacrt nacionalnog okvirnog kurikuluma za predškolski odgoj i opće obvezno obrazovanje u osnovnoj i srednjoj školi stavljen na javnu raspravu. Available on: http://public.mzos.hr/Default.aspx?art=8792&sec=1941Pristup: (2-12-2008)*

important. Therefore, apart from lobbying, one of the PR tasks is developing and maintaining so-called "positive climate" that enables mutually successful long-term cooperation. For example: In cooperation with institutions of higher education and scientific institutes, Ministry of Science, Education and Sports organizes workshops about Seventh Framework Programme on Research and Development two to three times a month. This is so-called FP7 program that refers to the period between 2007 and 2013, and for which €50.5 billion were provided by the European Commission. Within the framework of the previous FP6 program, Croatia signed 100 contracts based on which about €10 million were provided. For the purpose of promotion, in cooperation with European Commission, info days are organized four to five times a year (Primorac;2007, 109).

2. RELATIONS WITH FINANCIAL INSTITUTIONS

Relations with financial public are oriented towards existing and potential investors, general financial public (banks, analysts, banking advisers, fund and investment companies' managers), business partners (e.g. Croatian Chamber of Economy, Croatian Chamber of Trades and Crafts) and specialized financial media. Particularity of these relations is that financial institutions are legally bound to have financial reports, and mediation of inappropriate information is a criminal offence. Considering that financial public is extremely active, i.e. it seeks and interprets information by itself, PR task is mainly to build the reputation and strengthen cooperation.

Scientific and technological policy of the Republic of Croatia 2006 – 2010 got support from the World Bank to the amount of €31 million, where Government of the Republic of Croatia ensures additional €5.7 million. For projects carried out by BICRO[5] €14 million was provided from the loan by the World Bank. In cooperation with BICRO Ministry applied for IPA funds of pre-accession assistance of the European Union: for project of development of University Campus Borongaj and for the project Fund for Investing in Science and Innovations that is oriented towards improving capacities of scientific organizations. In 2006 Unity through Knowledge Fund was established whose goal is to enable the return of Croatian scientists from abroad. For the project that is supposed to last till 2009 €3.96 million was provided from the World Bank. In cooperation with Fund for Development and Employment of the Republic of Croatia the project of development of professional studies is smaller urban areas was started, for which 60 million kuna was provided in the period between 2006 and 2009 (Primorac;2007, 60, 69-70).

[5] These projects are: RAZUM – new product / service development, TEHCRO – technological infrastructure, VENCRO – establishing the fund of high-risk capital, IRCRO – academic community and economy cooperation, KONCRO -

3. RELATIONS WITH MEDIA

It is characteristic for media that they are at the same time target public and central channel for distribution of PR messages and information with which we wish to reach general public. As active or manifest public, media carefully monitor what is happening in the education area, where they have an important role and impact on shaping the public opinion. To be fair, media do not have the power to impose viewpoints, but they have the possibility to "impose" topics around which public debates will develop. Journalists and editors are so-called gate keepers who decide whether certain information will be allowed in the media or not. Public relations department always try to show events in positive light, while journalists are oriented towards criticism and search for conflicts. Because of that media can easily cross from so-called manifest public to polemic public.

On the other side, there is certain interdependence between PR and media. PR's goal is to, through media, launch information intended for wide public, present programs and projects and achieve in creating positive publicity. Media, however, use press conferences, announcements, PR reports as official source of information chosen for announcement or "starting point" for certain topic research.

4. RELATIONS WITH LOCAL COMMUNITIES

Relations with local communities are primarily oriented towards relations with representatives of local communities who make decisions, detect problems, notice trends, but also towards private and public companies that are the holders of economic development. For example in Istria, that is prominent tourist region, pupils' interest for catering education programs is very low. Businessmen are trying to solve that problem by giving stimulating scholarships for jobs in short supply, by ensuring permanent job after finishing school and by promoting catering profession. (Strugar;2002, 15-16, 59)
Through development plan for educational system 2005 – 2010 project of school development was started. For that purpose one billion kuna will be provided. By introducing HNOS (Croatian National Education Standard) partnership between schools and local communities is encouraged, not only in the area of material and technological working conditions, but also in teaching and research projects. In 2006. project Development of professional studies was started, based on the needs of small urban areas in order to stimulate employment and development of those areas.

5. RELATIONS WITH INTERNAL PUBLIC

One of the most important goals of educational changes is improvement of working conditions, as well as the standard of employees. According to available information, 5 259 new openings occurred in science and educational system between 2004 and 2007. As an instrument of encouraging excellence, Education and Teacher Training Agency promoted 878 teachers into mentors and 480 expert assistants into advisers by the end of 2006. As a result, their incomes rose by 7 or 12%. Employees also got state-aided housing loans, where user pays 1.67% of interest, and Ministry 3.23% (Primorac;2007, 35, 37).

According to Law of the Student Union and other student organizations, in all institutions of higher education student attorney is introduced. His role is to counsel students, and to receive and solve complaints, which contributes to ensuring quality in institutions of higher education. Student Union, apart from choosing student ombudsman from among students, can participate in preparation of bills for improvement of educational process or student standard through its representative. Students are actively involved in Ministry's projects and participate in the work of many expert bodies, e.g. in the work of National Working Group for Monitoring the Bologna Process. They are also organized into numerous clubs or interest associations that are, if they have high quality programs, financed mostly by the Ministry.

One of the goals is standardization of Croatian educational system with European. Within that, better mobility of lecturers and students is being developed in the framework of higher education, whether our students continue their studies abroad, or foreign students come to Croatia. Information about international education and scientific cooperation, as well as information about scholarships offered by numerous international organizations, foundations and institutions of higher education are published on Ministry's web pages.

CONCLUSION

The role of public relations department is to inform, sensitize citizens and create positive social climate for accepting new programs and projects in general public. If needed, events and campaigns are used, while for years-long projects long-term programs are planned. Even though ideal model of public relations is Two-way symmetrical model based on two-way communication and scientific research and on direct negotiations with relevant target public, Asymmetrical model is used more often. It would be advisable to integrate PR strategy into marketing communication that would even through advertising campaign popularize the society of knowledge. I would complete the existing campaign "Ususret državnoj maturi" with an advertising campaign, that would with its style and design be adapted to pupils.

Action called Indeks was the top subject of all media debates in September. Spectacular action where 95 people from Faculty of Economics and Business and from Law School suspected of bribery, bribe-taking or mediation in bribery were arrested shocked the public. Media gave great attention to that since about twenty professors were taken to further investigation. Even though more than five months have passed from the action that was supposed to expose corruption, only two students were processed. Therefore the public is wondering whether the spectacular action was necessary only to show to Europe that we have political will to settle with corruption. Media did not respect code of ethics, and besides professors' reputation that were not found guilty, the reputation of faculties was also damaged. However, PR department did not make any move in order to reduce negative publicity, as well as faculties' leaderships, surprised with delicate investigation and unpleasant media intensification of the scandal. No one is guilty until proven guilty – this is the basic postulate that media did not respect here which resulted in negative effects and scandal, instead of contributing to better quality of educational system.

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THE ROLE OF UNIVERSITIES IN PROMOTING LIFELONG LEARNING: EUROPEAN EXPERIENCE AND CROATIAN PERSPECTIVE

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Abstract

The lifelong learning has a crucial importance since a dynamic economic and social development in contemporary highly globalized world is based upon highly educated and trained entrepreneurs, managers and professionals. This is recognized in the Lisbon strategy (2000), the EU's overarching program focusing on growth and jobs. It has underlined that knowledge, and the innovation are the EU's most valuable assets, particularly as global competition becomes more intense in all sectors. The purpose of this paper is to contribute to the discussion on lifelong learning activities and policies in EU and its implications on Croatia as an EU candidate country.

JEL classification: I20

Keywords: lifelong learning, universities, lifelong learning policy, EU, Croatia

1. Introduction

The Lisbon meeting in March 2000 earmarked the turning point in the EU development policy. The EU adopted the so-called Lisbon Strategy, which set a new strategic goal for the EU in next ten years: to become the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion. Among many ways determined to become the knowledge-based economy, promoting the lifelong learning has become of extreme importance since the changes in economy and society call for people with better education, higher qualification and continuously up-dated competences in order for respond to challenges brought by increased globalization and competition world-wide. In that context, it has been recognized that education must ceased to be viewed as an event, but rather as a process that takes place throughout the people's lives. Thus, the concept of lifelong learning has become not only a fashionable term, but a necessity and development of the lifelong learning capacities a priority of all EU member states. The purpose of this paper is to contribute to the theoretical and practical discussion about lifelong learning, which is not only one way of education and training but has to become a guiding principle in 'supplying' and

acquiring knowledge. Considering that Croatia is an EU candidate country, the EU policy and measures have great implications on promoting and developing system of lifelong learning in Croatia.

2. Lifelong Learning: definition and context

Lifelong learning as an concept is not new since the idea and discussion of learning through life can be found in historical texts such as for example in Plato's Republic or later in Yeaxlee's book published in 1929 called ***Lifelong Education (Smith, 2001)***. The popular notion 'lifelong learning', as we use it today, was coined in 1970s by the European Council.

Lifelong learning (hereinafter: LLL) is often identified as the synonym to lifelong education. Still, there is a difference. The lifelong learning is defined as the activity of learning throughout life with the goal to improve knowledge, skills and competences within personal, civil, social and business perspective. On other hand, lifelong education is defined as a set of organizational, administrative, methodological and procedural measures which accept the importance of promoting lifelong learning (Knapper and Cropley, 2000: 9). Thus, the LLL implies the acquisition and modernization of all types of competences, qualifications, interests, knowledge, from the preschool period to the period after retirement. In another words, it considers promotion of knowledge and ability development which will enable citizens to adjust to the "knowledge society" and actively participate in all spheres of social and economic life, impacting in that way the own future. There are three types of LLL –(i) formal - organized around determined curriculum (e.g. courses at the University); (ii) non-formal – advancement of skills necessary for a job) and (iii) informal – based upon conversation and exchange of knowledge within family, friends, etc.[1]

Reviewing literature reveals that there are numerous pressures why lifelong learning should be adopted as an (educational) goal. For example, Avelini-Holjevac (2002: 216) recognizes that the globalization of knowledge is a big advantage, chance and positive challenge of general globalization trend which should be 'incorporated' in national policy agenda; Bahtijarević-Šiber (1999: 719) states that the modern business requires new competences that were not important in the traditional way of doing business; Barković (1999: 30) states that the use of computer is a necessary competence for information gathering necessary for everyday work. Thus, the goal of LLL is threefold[2]: (1) to

[1] For more detailed explanation see OECD: Higher Education and Adult Learning – Recognition of Non-Formal and Informal Learning – Home, available at http://www.oecd.org/document/25/0,3343,en_2649_39263238_37136921_1_1_1_37455,00.html (Accessed 4th March 2009)

[2] A Critcal Importance of Lifelong Learning, B-Hert Position paper, no.4 – policy statement, Februray 2001

produce more highly skilled workforce that is able to respond to challenges of continuously changing business environment (e.g. emergence of new occupations and careers, economic restructuring and organizational reforms on micro and macro level, etc., new competences as the response to increased use of technology, etc.); (2) to ensure creation of more inclusive society (e.g. stronger democracy through transparency and knowledge available by digitalization of activities of government, e.g. e-government) and (3) to contribute to the more personally rewarding life (e.g. better employability due to modernization of competences, etc.). In a nutshell, LLL is essential for surviving on the market (as an individual or organization) and doing profitable business in highly globalized world (economic goal), but also it is necessary for democratic engagement, social inclusiveness and personal fulfillment.

3. Lifelong Learning Policy in EU

The EU has recognized that education and training are essential to the development and success of today's knowledge society and economy. The EU education and training policy has been given added impetus since the adoption of the Lisbon Strategy in 2000, the EU's overarching program focusing on growth and jobs. It underlines that knowledge, and the innovation are the EU's most valuable assets, particularly as global competition becomes more intense in all sectors. The importance and necessity of lifelong learning in the EU was emphasized in a Memorandum of Lifelong Learning issued by the Commission of the European Communities in 2000, in which it was clearly stated that employability and active citizenship should be accomplished by the implementation of the LLL policy. Based upon the Memorandum, the Commission Communication in 2001 ***Making a European area of Lifelong Learning a reality*** revised the definition of lifelong learning to emphasize the importance of its four broad objectives of active citizenship, personal fulfillment, social inclusion, and employability, and to encompass the full range of formal, non-formal and informal learning activity. The main issues and areas of work identified in this Communication included following: (i) valuing learning: valuing formal diplomas and certificates and non-formal and informal learning in all sectors; (ii) investing time and money in learning: increased investment and targeted funding are called for, along with mechanisms for increasing private investment; (iii) encouraging and supporting learning at the work place, including in SMEs; (iv) guidance and counseling: ensure that everyone can easily access good quality information and advice about learning opportunities throughout Europe and throughout their lives; (v) work should focus on providing opportunities to acquire and/or update basic skills, including the new basic skills, such as IT skills, foreign languages, technological culture, entrepreneurship and social skills.

In 2002, the EU Council passed the Resolution on Lifelong Learning and since early 2004 the Council and the Commission adopt, yearly, joint interim reports on progress towards the Lisbon goals for education and training. The Commission proposal in July 2004 focused on establishing an integrated action program in the field of lifelong learning (2007-2013) which was adopted by the Parliament in October 2006. The new program replaced the existing four sectoral programs: Comenius - school education; Erasmus – higher education; Leonardo da Vinci - vocational training; and Grundtvig - adult education which expired at the end of 2006.[3] The budget earmarked for this new integrated program is 6.97 billion EUR for the seven year period. The strategy of the LLL has been incorporated as an important part of the Bologna process. i.e. the EU policy on higher education. This process is particularly interesting since it has been turned from the voluntary action to collective obligation with concrete future educational goals of educational systems across the EU member states. Uniting all phases of education, the LLL is finally being places in the center of European educational policies (Ziljak, 2005: 74).

The Commission adopted, in December 2005, a proposal for a Recommendation on key competences in lifelong learning. The eight key competences have been recognized: communication in the mother tongue; communication in the foreign languages; mathematical competence and basic competences in science and technology; digital competence; learning to learn; interpersonal, intercultural and social competences and civic competence; entrepreneurship; and cultural expression. The aim of defining these competences at EU level is to provide a reference tool for policymakers, education providers, employers and learners on the way towards active citizenship, social cohesion and employability. The Parliament adopted the recommendation in September 2006. Also, in September 2006, the Commission adopted a proposal for a Recommendation on European Qualifications Framework for lifelong learning with an aim to facilitate the transfer and recognition of qualifications held by workers, as well as to function as a 'translation device' to make relationships between education and training qualifications of different national systems clearer. It is expected to make European general and adult education, vocational education and training systems more transparent and accessible.

Based upon EU statistics on Education and Training (EUROSTAT, 2009), there are currently 102915000 persons participating in some kind of lifelong learning activities. The majority of persons, i.e. 61% are involved in informal education such as computer-based learning, self-studying, studying in libraries or learning centers followed by 30.7% in non-formal education or job-related non-formal education and only 8.3% in formal education. In 2006, the Commission issued a

[3] Detailed descriptions of these four sectoral programmes are available from European Commission on Education and Training, http://ec.europa.eu/education/lifelong-learning-programme/doc78_en.htm (13th March 2009)

report on Progress towards the Lisbon objectives in education and training in which performance and progress of education and training systems in the EU was examined. Some of the key findings of this report are following: participation of adults in lifelong learning is heading toward the European benchmark for 2010, but breaks in data series in several countries overstate the progress made; many inequalities in access to lifelong learning still remain; adults with a high educational attainment level are more than six times as likely to participate in lifelong learning than low skilled; in non-formal education it is even ten times more; older age groups participate much less than the younger ones; participation of adults in LLL has a regional dimension whereby some regions are falling behind even tough in their country the overall levels of participation are high. Reaching the Lisbon benchmarks in the field of education would imply that in 2010 four (4) million more adults would participate in lifelong learning. This means that the LLL policies should be revisited and shifts their focus to encompass and motivate low educated people, older age groups as well as to make LLL activities more regionally balances. Business community should also increase their role in promoting LLL by developing capacity as well as to motivate employees to continue with learning activities in order to achieve competitive advantage both individuals and firms as whole.

4. Croatia and Lifelong Learning

The importance of knowledge and education has been recognized in Croatia as an important driver of growth and development, particularly in the context of increasing global competition and aspiration of Croatia to become a fully-fledged member of the EU. This is clearly stated by the Government in the Strategic framework for development 2006-2013. Particular emphasis in this document is given on the LLL - the 'old' efforts to maintain employment and to ensure permanent security of job should be replaced by the 'new' efforts to ensure permanent employability, which in turns requires participation in education and training activities through work life. According to the official statistic data, only 2.3% of labor active population in Croatia have been participating in some form of education and training, which is quite low compared to EU average of 10,8%.[4] There are several reasons for such an adverse statistics: majority of people who obtained the highest degree of formal education at universities or polytechnics do not continue with education and training; even tough Croatian firms/organizations have improved their education and training practices during the last five years, these activities are still not perceived as strategically relevant (see for example study by Položki-Vokić and Grizelj, 2007); there is a lack of people's self-confidence and in

[4] Source of dana: Strategic framework for Development 2006-2013, Government of the Republic of Croatia.

many cases (continues) education and training in older age is perceived as a 'shame'.

Even tough the statistics is adverse and portray that Croatian workers are not life-long learners, there is a room for optimism in the future. Namely, the Croatia has been seriously building the LLL system. It started with formulating the Strategy for Adult Education in 2004 and the Action Plan for Implementation of the Strategy for Adult Education.[5] Croatia has also passed the Law on Adult Education (The Official Gazette, NN 17/07) by which the Croatian Parliament sent a valuable message that the education in older age represents both necessity and value. The Agency for Adult Education, as a public institution, was established by the Decree of the Government of the Republic of Croatia (Official Gazette 59/06) in May 2006. Its task is inter alia to develop programs which will enable unemployed and other socially excluded groups to gain qualifications and find jobs. Furthermore, there is also the Adult Education Council as an expert advisory body of the Government of the Republic of Croatia. It is in charge of monitoring the state of adult education and proposing measures for its development, proposing and providing opinions on legislative and implementing regulations and proposing financing mechanisms for state-funded adult education programs. In addition, introduction of the obligatory secondary schooling in Croatia since 2007 will also significantly contribute to an increase and qualified workforce in firms and other organizations. The number of institutions which have a permission to conduct the adult education programs increased from 345 to 447 in 2007.

5. The role of universities: concluding remarks

Universities are among a spectrum of institutions that have an important role in promoting LLL. European Universities' Association (EUA) drafted a European Universities' Charter on Lifelong Learning in 2008 in order to assist universities across Europe in developing their specific role as LLL institutions. In this charter governments are also called to commit in ensuring proper levels of funding for LLL activities. According to the Charter, universities should commit to following[6]: (1) embedding concepts of widening access and lifelong learning in their institutional strategies: lifelong learning should be an integral

[5] The Strategy for Adult Education and Action Plan for Implementation of the Strategy for Adult Education, Government of the Republic of Croatia, 2004 are published at the official web site of the Ministry of Science, Education and Sports http://www.mzos.hr/default.asp?gl=200407270000003&jezik=1&sid=. (Accessed 12th March 2009)

[6] For more detailed explanation on these committments refer to the full text of the Charter available at http://www.eua.be/fileadmin/user_upload/files/Publications/European_Universities__Charter_on_Lifelong_learning.pdf (Accessed 15th March 2009)

part of the mission and strategy of any university; (2) providing education and learning to a diversified student population: university education should be provided to broad spectrum of students including post-secondary students, adult learners, professionals who want to up-grade their skills, senior citizens who want to pursue culture interests and all others who want to obtain higher education or additional qualifications and competences; (3) adapting study programs to ensure that they are designed to widen participation and attract returning adult learners: universities should ensure flexible and transparent learning paths for all learners to access and succeed in higher education in all its different forms; (4) providing appropriate guidance and counseling services: all type of counseling – from academic and professional guidance to psychological counseling – should be available for potential students, of all ages and of difference social and cultural backgrounds; (5) recognizing prior learning: it is essential to develop systems to assess and recognize all forms of prior learning particularly in the context of lifelong learning since in a global era knowledge is acquired in many different forms and places; (6) embracing lifelong learning in quality culture: important steps should be taken in developing internal quality culture, assuming prime responsibility for the quality of their provision, i.e. to adapt to an evolving framework for lifelong learning in order to ensure that an appropriate range of targeted learner support services are provided for increasing numbers of more diverse learners; (7) Strengthening the relationship between research, teaching and innovation in a perspective of lifelong learning: research and innovation missions of universities can be strengthened through lifelong learning strategies, and universities' specific contribution to lifelong learning should be underpinned by research since LLL can also be a source of new research methodologies and topics; (8) consolidating reforms to promote a flexible and creative learning environment for all students: universities should exploit the potential of on-going reform processes and their tools (e.g. ECTS, Diploma Supplement, European Standards and Guidelines for Quality Assurance, Qualifications Frameworks, etc) to enhance the development of a creative lifelong learning environment that is open to amore diverse population of learners, and thus respond to societal needs for the modernization of higher education; (9) Developing partnerships at local, regional, national and international level to provide attractive and relevant programs: establishing a network of partnerships - with a range of other educational institutions, employers, employees' organizations (trade unions) as well as with other stakeholders - is essential if provision is to be responsive, flexible and innovative; (10) Acting as role models of lifelong learning institutions: universities should act as role models in society by offering lifelong learning opportunities for their own employees - whether academic, administrative or technical and auxiliary staff.

There are currently 7 public universities in Croatia, 12 public and 1 private polytechnic and 21 schools of professional higher education (of which 4 are

public and 17 private). The most important development in the last two years is the adoption of a policy of polycentric development of higher education, especially the development of professional studies in smaller urban areas. The aim is to increase the availability of higher education that is adapted to regional needs and particularities and to increase the number of persons with higher education in the general population since the current 7% of people with higher education degree[7] is not sustainable in the context of building the knowledge-based economy in Croatia. Thus, the university infrastructure is available and well-developed in Croatia and participation in the Bologna process is making it harmonized with European universities. The Charter of EUA provides guidelines for Croatian universities to assume more active role in enabling and promoting LLL. The recognition of LLL as an important part of the economic and social future of the country as well as the commitment of Croatia to align its educational system and goals to the EU is visible through examples of goof practice in Croatia related to LLL. For example, University in Rijeka has established the Center for Lifelong Education; Faculty of Law in Split has an agreement signed with the city of Novalja to educate and train the members of city administration on legal issues and legal language; Polytechnic school Lavoslav Ružička in Vukovar organizes CISCO academy for network technology as well as it has the Microsoft Academy. It is evident that creating opportunities for LLL requires interplay of many institutions and partners in the public and private sector and civil society. The challenges that Croatia faces to increase the capacity and culture of LLL are numerous, but so are the rewards for individuals, economy and society as a whole.

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[7] A number is slightly higher when considering active labor force (from 25 to 64 years old) where they account for 15.9%)

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NETZPLANTECHNIK (NPT) ALS WICHTIGES INSTRUMENT DES PROJEKTMANAGEMENTS GRUNDLAGEN

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Abstract

A challenging branch of mathematics called Graph Theory was the inspiration for developing two important procedures which are quite illustrative, and whose principles are relatively easy to understand and learn. This has certainly contributed to the importance that these procedures have gained in practice. These are the network planning technique for planning and monitoring of projects, and the decision tree procedure which is used to illustrate decision making problems

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Schon seit Jahren spielt das **Projektmanagement**, d.h. die Planung, Steuerung und Überwachung von Projekten in Unternehmen und Verwaltung eine wichtige Rolle. „In den letzten Jahren hat das Projektmanagement eine zunehmende Bedeutung erlangt“ (*Schwarze, J*., 2006, S. 5). Zur Bewältigung von Projekten sind neben den projektbezogenen Fachkenntnissen auch solide Kenntnisse der Grundsätze, Methoden und Techniken des Projektmanagements nötig; dabei stellt die **NPT** ein wichtiges Werkzeug dar.

In der Praxis spielen graphentheoretische Verfahren eine besondere Rolle bei:
- der anschaulichen grafischen Darstellung von Abläufen und Strukturen;
- der Berechnung von optimalen (längsten, kürzesten, kostenminimalen oder gewinnmaximalen) Wegen;
- der Berechnung maximaler Flüsse in Netzwerken.

Oft ist schon die Darstellung eines Sachverhaltes in Form eines Graphen von großem Nutzen, der allein dadurch entsteht, dass es für die Aufstellung des Graphen erforderlich ist, das Problem bis in die Details zu durchdringen.

1. Grundlagen der Netzplantechnik

Die **Netzplantechnik (NPT)** stellt Methoden zur **Planung und Überwachung** von **Projekten** bereit. Die NPT hat mehrere voneinander unabhängige Wurzeln. 1957 wurde in USA bei *Dupont de Nemours* in Zusammenarbeit mit *Ramington*

Rand die **„Critical Path Method“ (CPM)** entwickelt. Beim Bau der Polarisrakete wurde 1958 das Planungssystem **„Program Evaluation and Review Technique“ (PERT)** geschaffen. Gleichzeitig wurde von einer französischen Beratungsfirma, die zu einer internationalen Gruppe von Beratungsfirmen namens *METRA* gehört, die **Metra-Potential-Methode (MPM)** als Terminplanungsmethode für den Reaktorbau entwickelt. All diese Methoden haben ein **grafisches Modell** des zeitlichen Ablaufs eines Projektes, das **Netzplan** genannt wird, zur Grundlage. CPM, PERT, MPM und ihre zahlreichen Varianten und Weiterentwicklungen werden unter dem Begriff **Netzplantechnik** (auch Netzwerktechnik oder Netzwerkanalyse genannt) zusammengefasst. Unter **NPT** versteht man alle Verfahren zur:

- Beschreibung,
- Planung,
- Steuerung,
- Überwachung

von Projektabläufen auf der Grundlage von **Netzplan-Modellen**. Diese Definition entspricht DIN 69 900 (DIN 69900, Netzplantechnik, Deutscher Normenausschuss, Frankfurt 1983). Soweit die hier benötigten Begriffe vereinheitlicht sind, werden sie der genannten Norm bzw. den Empfehlungen der *Deutschen Gesellschaft für Operations Research* entnommen. Die Durchführung von Projekten benötigt **Zeit**, verursacht **Kosten** und erfordert den Einsatz gewisser Hilfsmittel **(Einsatzmittel)**, worunter die sog. „Einsatzfaktoren“, also Betriebsmittel (Maschinen etc.), Arbeitskräfte und Werkstoffe, verstanden werden. Entsprechend werden in der **NPT** Methoden zur:

- Zeitplanung (Terminplanung),
- Kostenplanung,
- Kapazitätsplanung,
- Finanzplanung

bereitgestellt. **Kernstück der NPT ist die Zeitplanung.** Auf den Ergebnissen der Zeitplanung bauen die weiteren Anwendungen auf. Als **Beispiele** für die Anwendung der NPT seien genannt:

Aufbau einer Fabrik, Durchführung von Wartungsarbeiten, Entwicklung eines Waffensystems und Bau eines Atomkraftwerkes waren die ersten Anwendungen. In der Zwischenzeit wird die NPT in vielen Bereichen der Wirtschaft eingesetzt (siehe *Homburg, C.*, 2000, S. 475 ff.; *Schwarze, J.*, 2006, S. 13 ff.; *Domschke, W., Drexl, A., 2007,* S. 112 ff.*; Corsten, H. u.a., 2008,* S. 120 ff.; *Litke, H.-D.,* 2007, S. 18 ff.). Bei diesen Beispielen handelt es sich um

Projekte. Der Begriff „**Projekt“** steht im Gegensatz zu sich dauernd wiederholenden Vorgängen. Er beinhaltet, dass eine Leistung einmalig in ganz bestimmter Art und Weise durchgeführt wird.
Da sich solche Projekte gewöhnlich nicht identisch wiederholen bzw. solche Projekte überhaupt noch nicht abgewickelt wurden, kann sich der Planer nicht allein auf seine Erfahrungen mit ähnlichen Projekten stützen. Er benötigt ein Hilfsmittel wie die **NPT**, diese wird in Zusammenhang mit dem Projektmanagement gesehen. „Netzplantechnik ist *ein* Hilfsmittel des Projektmanagements, aber nicht das Einzige“ (*Schwarze, J*., 2006, S. 31).

Welche **Voraussetzungen** hat ein Projekt zu erfüllen, damit es mit NPT geplant und seine Abwicklung gesteuert und überwacht werden kann?
Es geht um die Erreichung bestimmter **vorgegebener Ziele**. Dabei muss es sich um ein **abgeschlossenes Projekt** handeln, bei dem Anfangs- und Endpunkte definierbar sind.

Das Projekt muss **in einzelne Vorgänge** (Aufgaben, Tätigkeiten, Aktivitäten, „Jobs“) **aufgegliedert** werden können. Alle Vorgänge, die zur Erreichung der Ziele erledigt sein müssen, bilden das Projekt.

Diese Aufgaben (Vorgänge) unterliegen hinsichtlich ihrer Durchführung **Reihenfolgebedingungen**, die auf die **Projektlogik** zurückzuführen sind. Ein Vorgang kann z.B. erst nach Abschluss von anderen Vorgängen begonnen werden. Diese Vorgänge **beanspruchen Zeit, Einsatzmittel und verursachen damit Kosten.**

Es muss sichergestellt werden können, dass die plangerechte Durchführung des Projektes **kontrolliert** werden kann, d.h. zu jedem Zeitpunkt der Projektrealisierung muss es möglich sein, **Soll-Ist-Vergleiche** durchzuführen, um ggf. **Anpassungsmaßnahmen** ergreifen zu können (Steuerungsmöglichkeit).

Ein großer **Vorteil der NPT** besteht darin, dass durch die **grafische Darstellung** ein Projekt **transparent** gemacht wird. Insbesondere können die **gegenseitigen Abhängigkeiten der Vorgänge** klar aufgezeigt werden.

Ein weiterer Vorteil der NPT ist, dass sie ohne aufwändige zusätzliche Vorarbeiten durchgeführt werden kann. Darüber hinaus kann sie sich der Unterstützung durch Computer bedienen (Netzplanprogramme wie z.B. TIME LINE mit CPM, PERT oder Microsoft Project - „MS Project“ - bzw. Algorithmen der Graphentheorie, wie z.B. in LINGO – „LINGO verbindet eine grafische Entwicklungsumgebung und eine komplette Modellierungssprache mit einem leistungsstarken linearen, ganzzahligen, quadratischen und

nichtlinearen Gleichungslöser.“ (www.additive-net.de; vgl. auch Lutz, M., 1998, S. 15 und S. 213).
Nach einer von verschiedenen Autoren vorgeschlagenen Gliederung zerfällt die NPT in die **Stufen**:

Strukturanalyse - Strukturplanung,
Zeitanalyse - Zeitplanung,
Kostenanalyse - Kostenplanung,
Kapazitätsanalyse - Kapazitätsplanung.

Die Stufen können jedoch nicht losgelöst voneinander und auch nicht für ein Projekt allein betrachtet werden. Vielmehr unterliegen die Ergebnisse jeder Planungsstufe starken Einflüssen aus anderen Stufen bzw. aus den Planungen für andere Projekte. Damit sind die eigentlichen **Probleme der NPT** angesprochen. Wenn nach einem ersten Planungsschritt (Strukturplanung, Ablaufplanung) mit einer gewissenhaften Erfassung und grafischen Darstellung des Ablaufs an die Zeitplanung als dem zweiten Schritt gegangen wird, so erscheint dies vom Standpunkt des Praktikers insofern als eine reichlich theoretische Angelegenheit, als die vorgenommenen Zeitplanungen unter einer Reihe von Abstraktionen erfolgen. Bei der Zeitplanung sind nicht nur die Struktur und die Zeit, sondern auch die Kosten und die Kapazitäten zu ermitteln und zu berücksichtigen. Die Projektplanung kann folglich erst als abgeschlossen gelten, wenn in allen Stufen des behandelten Projektes und unter Berücksichtigung der außerdem im Betrieb noch abzuwickelnden Projekte eine durchführbare Lösung gefunden ist, die darüber hinaus noch den betrieblichen Zielen möglichst nahe kommt.

2 Strukturplanung

Die Planung der **Ablaufstruktur** eines **Projektes** setzt detaillierte Informationen über die Struktur des Projektes voraus.

2.1 Strukturanalyse

Der **erste Schritt der Strukturanalyse** besteht darin, dass **sämtliche Vorgänge** des Projektes **ermittelt werden**, d.h. das Gesamtprojekt wird in die erforderlichen Arbeitsgänge zerlegt. **Vorgänge** sind alle Aktivitäten, die **Zeit beanspruchen**, also auch Lieferzeiten, technisch bedingte Wartezeiten - z.B. Abbindedauer von Beton -, Liegezeiten etc. Sämtliche Vorgänge des Projektes werden in einer Liste **(Vorgangsliste)** zusammengestellt.
Es erhebt sich hier die Frage, wie detailliert, d.h. wie fein soll das Projekt im Netzplan dargestellt werden? Die Grundsatzentscheidung ist, was als Vorgang angesehen werden soll, d.h. vor allem wie „groß“ die Vorgänge sein sollen. Der

Begriff des Vorganges ist sehr weit gefasst. So kann z.B. das Anbringen des Innenputzes in einem Gebäude als **einen** Vorgang definiert werden. Es ist aber auch möglich, diese Arbeiten aufzuteilen und beispielsweise das Verputzen jeder Zimmerdecke, jeder Zimmerwand, das Einputzen der Fenster etc. jeweils als einen Vorgang aufzufassen. Die Frage, wie **fein** die Analyse und Planung der Ablaufstruktur eines Projektes vorgenommen werden soll, kann nicht allgemein beantwortet werden. Die Gliederung eines Projektes in **Vorgänge** wird so fein vorgenommen, dass eine hinreichende Abgrenzung jedes Vorgangs gegenüber den anderen Vorgängen möglich ist und Informationen über Abhängigkeiten der Vorgänge nicht verloren gehen. Der Grad der Zerlegung des Projektes bzw. des Netzplans **(Detaillierungsgrad)** hängt in erster Linie vom Umfang der Informationen ab, die der Netzplan liefern soll. Je nach Verwendungszweck - z.B. Information für die Geschäftsleitung oder für den Bauleiter - wird man häufig für **dasselbe Projekt verschiedene Netzpläne unterschiedlichen Detaillierungsgrades** erstellen. Bei größeren Projekten - insbesondere, wenn sie sich über einen längeren Zeitraum erstrecken - ist es oft zweckmäßig, das Projekt zunächst nur sehr grob zu analysieren und einen **Übersichtsnetzplan** (Grob- oder Rahmenplan) anzufertigen. Die Vorgänge dieses Übersichtsplanes umfassen jeweils mehrere Aktivitäten („Sammelvorgänge"), die dann zerlegt werden können. Jede Detaillierung (Verfeinerung) eines Netzplanes stellt eine Untergliederung in „kleinere" Vorgänge dar. Umgekehrt können Vorgänge eines **Detailnetzplanes** durch Zusammenfassung **verdichtet** werden.

Sind alle Vorgänge des Projektes zusammengestellt, werden im **zweiten Schritt der Strukturanalyse** die logisch bzw. technologisch und wirtschaftlich bedingten **Abhängigkeiten zwischen den Vorgängen ermittelt.** Hierbei geht es vor allem um die **Reihenfolge** der Vorgänge. Dabei sind für jeden Vorgang folgende Fragen zu beantworten:

Welche Vorgänge gehen dem in Frage stehenden Vorgang **unmittelbar voraus**; welche Vorgänge müssen beendet sein, damit der betreffende Vorgang beginnen kann? Das Ergebnis sind die **„Vorgänger"** des betrachteten Vorgangs. Z.B. müssen die Fundamente ausgeschachtet sein, bevor sie betoniert werden können - „Ausschachten der Fundamente" ist „Vorgänger" für „Betonieren der Fundamente".

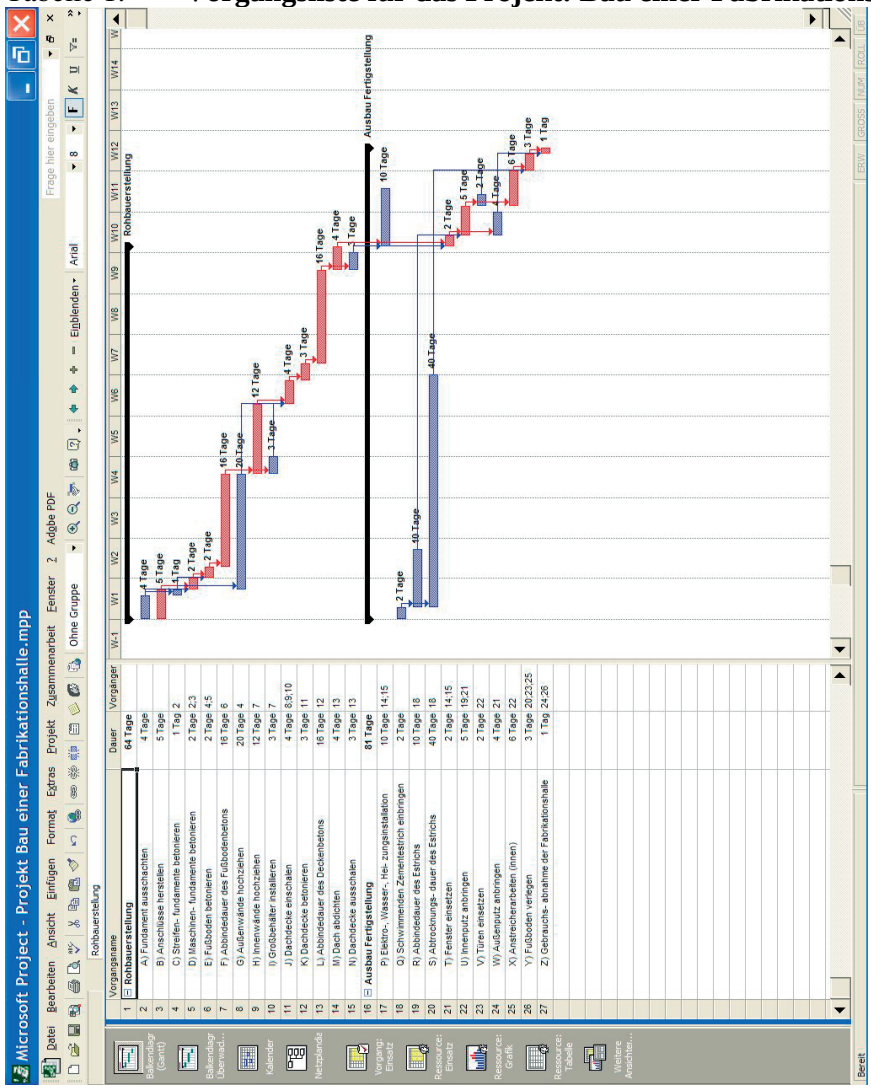
Welche Vorgänge **schließen sich unmittelbar** an den betrachteten Vorgang **an**? Das Ergebnis sind die **„Nachfolger"** des betreffenden Vorgangs. Für die Strukturplanung ist es ausreichend, wenn man entweder die „**Vorgänger" oder die „Nachfolger"** für jeden Vorgang bestimmt.
Welche Vorgänge können **parallel ausgeführt** werden?

Bei der Strukturanalyse eines Projektes zeigt sich, dass ein großer Teil der **Abhängigkeiten nicht eindeutig** festliegt. Die Reihenfolge von Vorgängen kann also vertauscht werden. Vielfach können Vorgänge sowohl nacheinander als auch parallel durchgeführt werden. Hier sind dann oft Fragen der Zweckmäßigkeit (z.B. Kapazitätsüberlegungen) ausschlaggebend. Bei der Projektplanung muss man sich jedoch für Abhängigkeit eindeutig entscheiden. Sind andere Abhängigkeiten möglich, so kann man diese protokollieren, um darauf bei einer eventuell erforderlichen Planrevision zurückgreifen zu können.
In der **Vorgangsliste** können neben den Vorgängen (Aufgaben) des Projektes und den ermittelten Abhängigkeiten weitere wichtige Informationen zusammengestellt werden, wie z.B. die für die Ausführung verantwortlichen Stellen, Zeitbedarf, Kosten und differenzierter Kapazitätsbedarf der Vorgänge.
Die Vorgangslisten werden häufig in Projektsteuerungssoftware implementiert. In Tabelle 1 ist für ein **Projektbeispiel** „Bau einer Fabrikationshalle“ - das im Folgenden zur Veranschaulichung ständig herangezogen werden soll – die Vorgangsliste in die Software „MS Project“ eingegeben worden. Die Liste umfasst zunächst nur den Namen, die Dauer und den Vorgänger eines jeden Vorganges. MS Project ergänzt die Vorgangsliste bereits durch eine Balkengraphik (Gantt-Diagramm). Auch wenn diese Art der Projekt-Darstellung sehr anschaulich ist, so eignet sie sich nur für kleinere Projekte oder zur Darstellung von Zusammenhängen zwischen größeren Teilprojekten. Bei einer komplexen Anzahl von Vorgängen und Vorgangsbeziehungen lässt sich ein Projekt mit Hilfe von Gantt-Diagrammen nicht mehr effizient planen.
Zu jedem Vorgang ist ein Buchstabe angegeben, der später als Abkürzung für den jeweiligen Vorgang benutzt werden soll. Ein Projekt lässt sich leicht in **Teilprojekte** zerlegen, um die Übersichtlichkeit nicht zu stören. Im Beispiel bietet sich folgende Teilung an:

- Teilprojekt I: Rohbauerstellung,
- Teilprojekt II: Ausbau und Fertigstellung.

Im Gegensatz zu diesem Projektbeispiel muss nicht immer der genaue Projektablauf im Planungsstadium bekannt sein. Bei so genannten **stochastischen Strukturen** ist der Projektablauf ungewiss, weil nicht von vornherein sicher ist, welche erfassten denkmöglichen Vorgänge tatsächlich realisiert werden. Das ergibt sich erst bei Realisierung des Projekts und ist abhängig von den vorher gewonnenen Ergebnissen (z.B. Forschungs- und Entwicklungsprojekte). Einzelne Vorgänge des Projekts werden dann nur mit einer gewissen Wahrscheinlichkeit realisiert, und es ist mit verschiedenen „Projektausgängen“ zu rechnen. Zur Behandlung der stochastischen Projektstrukturen wurde ein Zweig der NPT entwickelt, nämlich so genannte **Entscheidungsnetzpläne** (vgl. *Schwarze, J.*, 2006, S. 167 ff.; *Corsten, H. u.a.,* 2008, S. 226 ff.).

Tabelle 1: **Vorgangsliste für das Projekt: Bau einer Fabrikationshalle**



2.2 Darstellung der Ablaufstruktur

2.2.1 Formen der Netzplandarstellung

Die **Darstellungsform der NPT** ist der „endliche **gerichtete Graph“**. Jedes Netz besteht aus einer Reihe von Knoten, die untereinander durch Pfeile („gerichtete Kanten“) verbunden sind. Je nachdem, ob bei der grafischen Darstellung die Vorgänge durch die Pfeile oder durch die Knoten des Netzes darstellt werden, wird unterschieden in:

(1) kanten- oder pfeilorientierte und
(2) knotenorientierte Netzwerke:
(1a) Liegt das Schwergewicht der Projektplanung auf der Betrachtung der **Vorgänge**, dann handelt es sich um ein **Vorgangspfeilnetz**, wenn die Vorgänge durch die **Pfeile** dargestellt werden. Vorgangspfeilnetze werden bei **CPM** verwendet.

(2a) Liegt das Schwergewicht der Projektplanung auf der Betrachtung der **Ereignisse**, dann handelt es sich um ein **Ereignisknotennetz**, wenn die Ereignisse durch die **Knoten** dargestellt werden. Ereignisknotennetze werden bei **PERT** verwendet.

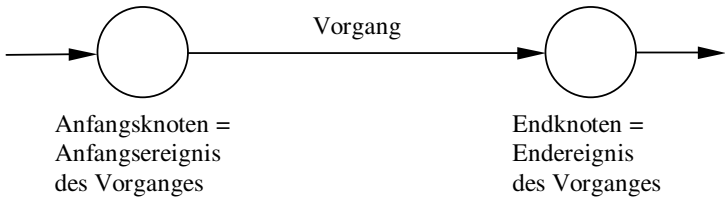
(2b) Liegt das Schwergewicht der Projektplanung auf der Betrachtung der Vorgänge, dann handelt es sich um ein **Vorgangsknotennetz**, wenn die Vorgänge durch die **Knoten** dargestellt werden. Vorgangsknotennetze werden bei **MPM** verwendet.

In der praktischen Anwendung der Netzplantechnik waren die Vorgangspfeilnetze nach CPM zunächst weit verbreitet. Mit Aufkommen von Netzplansoftware sind zunehmend Vorgangsknotennetze zur Anwendung gekommen (*Schwarze, J*., 2006, S. 34).

2.2.2 Critical Path Method - CPM

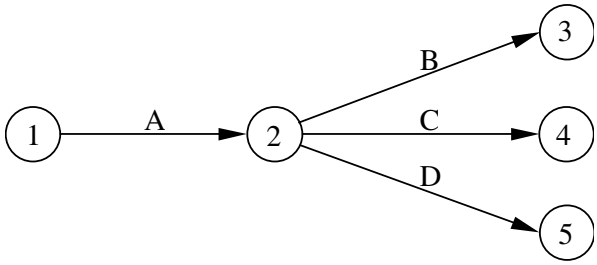
Die **„Methode des kritischen Weges“ (CPM)** arbeitet mit **Vorgangspfeilnetzen**. Die Abhängigkeiten zwischen den Vorgängen werden bei CPM durch Pfeile dargestellt, indem man die Knoten zweier unmittelbar aufeinander folgender Vorgänge durch Pfeile verbindet. Hierbei kommt der Länge und Form der Pfeile keine Bedeutung zu.

Abbildung 1: **Anordnungsbeziehung**



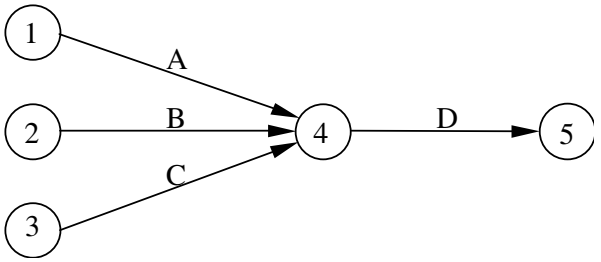
Zu jedem Vorgang gehören ein **Anfangsereignis** und ein **Endereignis**. Die Ereignisse heißen auch **Zeitpunkte**. Z.B. sind der Beginn und das Ende des ersten oder n-ten Vorgangs Ereignisse. Besonders zu erwähnen sind das **Startereignis** (Beginn der Projektdurchführung - Beginn des ersten Vorgangs) und das **Zielereignis** (Fertigstellung des Projektes). Ereignisse, denen bei der Projektrealisierung eine besondere Bedeutung beigemessen wird, heißen **Meilensteine** (z.B. Rohbaufertigstellung). Meilensteine werden in der Praxis besonders gekennzeichnet. Die Anordnungsbeziehungen in diesem System setzen voraus, dass jeder dargestellte Vorgang oder „Teil"-Vorgang abgeschlossen sein muss, ehe nachfolgende Vorgänge beginnen können. Es besteht eine **„Ende-Anfang-Beziehung"** zweier aufeinander folgender Vorgänge. Jeder Knoten stellt - abgesehen von Start- und Zielereignis - zugleich Anfangs- und Endereignis für verschiedene Vorgänge dar. Anfang und Ende eines jeden Vorgangs werden durch je einen Knoten bezeichnet und eindeutig nummeriert. Dabei können die Knoten des Netzplanes mehrwertig sein, d.h. Ereignisse können mehrwertig sein:

Abbildung 2: **Anordnungsbeziehung**



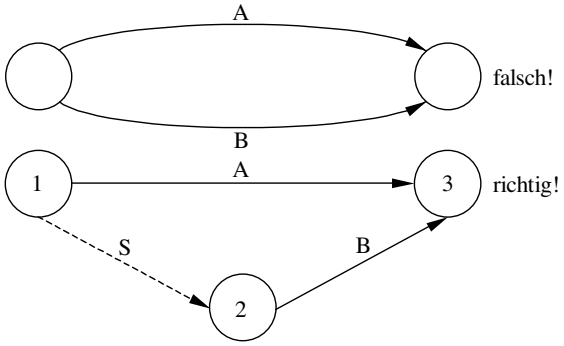
Haben mehrere Vorgänge B, C, D einen gemeinsamen Vorgänger A (A hat dann B, C, D als Nachfolger), so ist Knoten 2 Endereignis von A und zugleich Anfangsereignis von B, C, D (also **aller** unmittelbar nachfolgenden Vorgänge). Auch der umgekehrte Fall ist denkbar:

Abbildung **3**: **Anordnungsbeziehung**



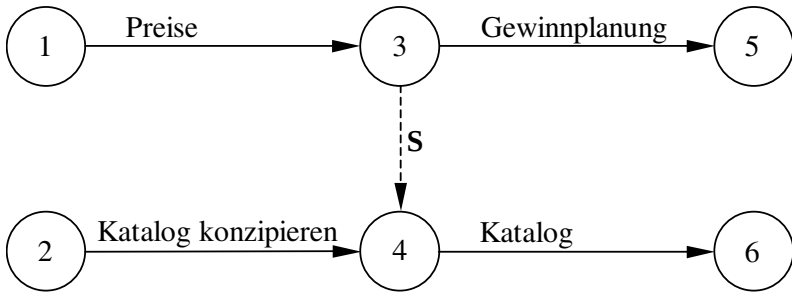
Hier ist das Anfangsereignis von D (Knoten 4) das gemeinsame Endereignis von A, B, C. Solche mehrwertigen Ereignisse werden auch **Sammelereignisse** (Knoten 2 in
Abbildung **2**2 und Knoten 4 in
Abbildung 3) genannt.
Zwei Ereignisse (Knoten) dürfen nur durch **einen** Pfeil miteinander verbunden werden. Das bedeutet zunächst, dass es nicht möglich ist, parallel verlaufende Vorgänge im Netzplan darzustellen. Durch die Einführung von **Scheinvorgängen** lässt sich dieses Problem jedoch leicht lösen. Haben zwei Vorgänge A und B gemeinsame Anfangs- und Endereignisse (d.h. können sie gleichzeitig beginnen und enden), so ist ein **Scheinvorgang S** erforderlich:

Abbildung 4: **Anordnungsbeziehung mit Scheinvorgang**



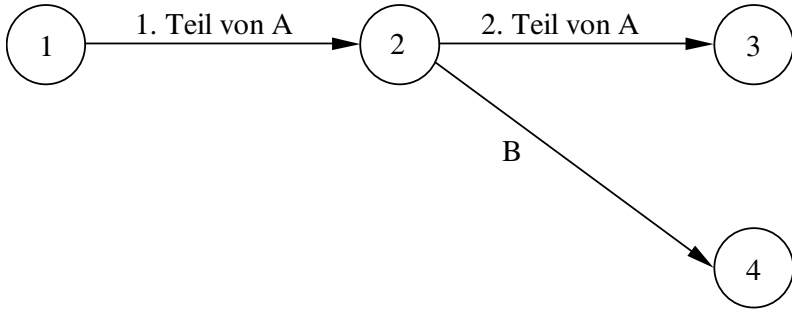
Hängen zwei oder mehrere Vorgänge mit verschiedenen Anfangs- und Endereignissen zusammen (z.B. muss ein „Katalog konzipiert“ werden und müssen die „Preise für die anzuliefernden Waren festgelegt“ sein, bevor der Vorgang „Katalog drucken“ beginnen kann), so ist ebenfalls ein Scheinvorgang S erforderlich.

Abbildung 5: **Anordnungsbeziehung mit Scheinvorgang**

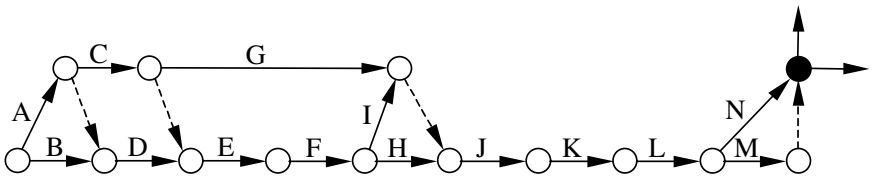


Ein **Scheinvorgang** ist ein fiktiver Vorgang **ohne Zeitbedarf**; er wird durch einen **gestrichelten Pfeil** dargestellt. Kann ein Vorgang B schon beginnen, bevor der vorhergehende Vorgang A ganz beendet ist **(überlappte Vorgänge)**, so ist der letztere zu unterteilen:

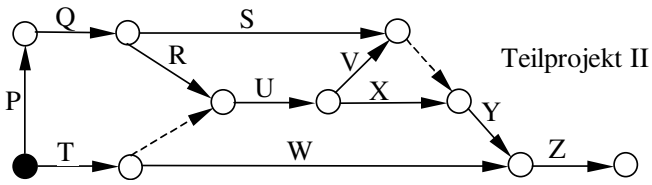
Abbildung 6: **Anordnungsbeziehung mit Überlappung**



Für das Projektbeispiel (Tabelle 1) ergibt sich folgender **Strukturplan** (das „Anschlussereignis“ - Übergang von Teilprojekt I zu Teilprojekt II - ist besonders gekennzeichnet; vgl. Abbildung 7):



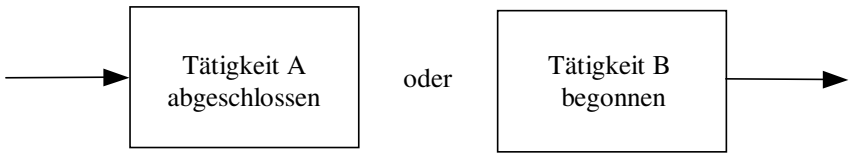
Teilprojekt I



Teilprojekt II

2.2.3 Program Evaluation and Review Technique - PERT

Ebenso wie bei CPM stellen in einem Netzplan nach **PERT** die Pfeile Vorgänge und die Knoten Ereignisse dar. Im Gegensatz zu CPM liegt bei PERT das Schwergewicht auf den **Ereignissen**, weil bei PERT Wahrscheinlichkeiten für das Auftreten von Ereignissen angegeben werden. Die Anordnungsbeziehungen des PERT-Planes entsprechen den Anordnungsbeziehungen in einem CPM-Plan. Sie werden lediglich im Sinne der **Ereignisorientierung** ausgedrückt (Ereignisknotennetz). Es gibt zwei prinzipielle Arten, wie Ereignisse in einem PERT-Plan beschrieben werden können:



Ereignisknotennetzen kommt in erster Linie für Übersichtsnetzpläne Bedeutung zu. In der Praxis werden nicht selten sowohl Vorgänge (Pfeile) als auch Ereignisse (Knoten) im Netzplan dargestellt (gemischt-orientierte Netzpläne). CPM und PERT gestatten die Berechnung solcher gemischtorientierten Netzpläne ohne besondere Schwierigkeiten.

2.2.4 Vorgangsknotennetzpläne

Beim **Vorgangsknotennetzplan** werden die Vorgänge durch rechteckige Knoten dargestellt. Vorgangsknotennetzpläne gehen davon aus, dass eine Reihe von Vorgängen bereits beginnen kann, bevor ihre Vorgänger beendet sind; es genügt ein bestimmter Fertigstellungsgrad der Vorgänger. Bei Vorgangsknotennetzplänen geben die Pfeile lediglich die Abhängigkeitsbeziehungen der Vorgänge (Reihenfolgebedingungen) an.

2.2.5 Gegenüberstellung der Netzplantypen

Die Vorgangsknotennetze haben gegenüber den Vorgangspfeilnetzen Vorzüge:

- Bei einem Vorgangsknotennetz können in einem Knoten **alle wichtigen Informationen, die den Vorgang betreffen, aufgenommen werden**, z.B. Beschreibung des Vorgangs, Vorgangsnummer, Dauer des Vorgangs, frühester und spätester Anfang bzw. Ende des Vorgangs, Pufferzeiten des Vorgangs, kostenrechnerische und kapazitätsbezogene Angaben. Diese Angaben lassen sich in einem Vorgangsknotennetz noch unterbringen, ohne dass der Netzplan unübersichtlich wird. In einem Vorgangspfeilnetz ist dies kaum realisierbar.
- Abgesehen von „Start“ und „Ende“ kommt das Vorgangsknotennetz vollkommen ohne Scheinvorgänge aus, während Vorgangspfeilnetze aus Gründen der Projektlogik **Scheinvorgänge benötigen**. Dieser Umstand kann bei umfangreichen Projekten mit komplexen Ablaufstrukturen die Übersichtlichkeit des Vorgangspfeilnetzplans beeinträchtigen.
- Die gängige Netzplansoftware arbeitet mit Vorgangsknotennetzplänen.
- **Änderungen im Netzplan** lassen sich in einem Vorgangsknotennetz einfach und schnell durchführen. Sind z.B. in einem bereits gezeichneten Netzplan Fehler aufgetaucht oder haben sich nachträglich andere Reihenfolgebeziehungen herausgestellt, so ist es in einem Vorgangsknotennetz ohne weiteres möglich, durch Wegnahme bzw. Hinzufügen von Pfeilen den Netzplan zu ändern.
- Vorgangsknotennetze lassen sich **einfacher und schneller zeichnen** als Vorgangspfeilnetze.

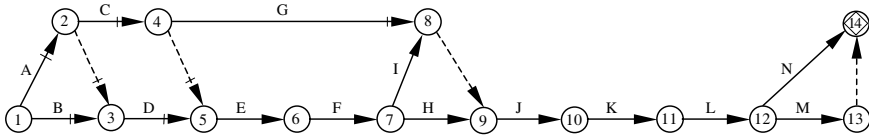
2.3 Nummerierung der Knoten

Die **Knoten** bzw. Ereignisse sind in den CPM-Netzplänen (mit natürlichen) Zahlen zu **nummerieren**. Bei der Nummerierung darf keine Zahl doppelt vorkommen. Die **lückenlos aufsteigende (systematische) Knotennummerierung** soll kurz vorgeführt werden.

Das **Anfangsereignis** jedes Vorgangs erhält eine **niedrigere** Zahl zugeordnet als das Endereignis des Vorgangs. Bezeichnet man - wie allgemein üblich - die Nummer des Anfangsereignisses eines Vorgangs mit i und die Nummer des Endereignisses mit j, so gilt $i < j$. Mit der Zahl „1“ beginnend, werden genau so viel **fortlaufende** natürliche Zahlen (lückenlos) als Knotennummern vergeben,

wie der Netzplan Knoten hat. Ein Verfahren, bei dem die lückenlos aufsteigende Nummerierung im Netzplan vorgenommen wird, soll anhand des Beispiels (Teilprojekt I) erörtert werden (vgl. **Error! Reference source not found.**8):

Abbildung 8: **Lückenlos aufsteigende Nummerierung der Ereignisse von Teilprojekt I**



Das Startereignis erhält Nummer „1“. „Entfernt“ man nun durch Durchstreichen alle Vorgänge, die vom Startereignis ausgehen, dann bleibt ein „Restnetzplan“ übrig. Der „Restnetzplan“, den man durch Streichen von A und B erhält, hat nun wieder ein „Startereignis“. Dieses neue „Startereignis“ erhält die nächstfolgende Knotennummer, also „2“. Jetzt werden alle Vorgänge, die von Knoten 2 ausgehen, gestrichen (C und Scheinvorgang). Es ergeben sich für den neuen „Restnetzplan“ zwei Ereignisse, von denen nur Vorgänge abgehen (**Abbildung** 8). Die beiden nächstfolgenden Nummern „3“ und „4“ können beliebig für diese beiden neuen „Startereignisse“ gewählt werden. Als Nächstes wären wieder die von Ereignis 3 und 4 ausgehenden Vorgänge zu streichen und das neue „Startereignis“ des neuen „Restnetzplanes“ zu bestimmen (im Beispiel Ereignis 5) usw. bis das Zielereignis erreicht ist.
Durch die Nummerierung der Knoten des Netzplans ist es möglich, jeden Vorgang durch das geordnete Zahlenpaar „i, j“ (Nummer des Anfangs- und Endereignisses des Vorgangs) zu kennzeichnen. Vorgang „(i, j)“ ist also der Vorgang, der in „i“ beginnt und in „j“ endet.

3 Zeitplanung

Bei der **Zeit- oder Terminplanung** eines Projektes geht es vor allem um die Beantwortung folgender Fragen:

- In welcher Zeit ist das Projekt realisierbar - **minimale Projektdauer** - oder: kann für die Fertigstellung des Projektes ein vorgegebener Termin eingehalten werden?
- Im Netzplan existieren Vorgänge bzw. Wege, die parallel, also gleichzeitig, durchgeführt werden können. Diese parallelen Vorgänge bzw. Wege müssen nun aber nicht die gleiche Ausführungsdauer haben. Dann hängt aber auch die minimale Projektdauer nicht von allen Vorgängen bzw. Wegen ab. Die zweite Frage lautet: Von welchen Vorgängen hängt die **minimale** Projektdauer ab, und

zu welchen Zeitpunkten müssen diese bei der errechneten oder vorgegebenen Projektdauer beginnen? Dies ist zugleich die Frage nach dem **kritischen Weg durch einen Netzplan**. Hiervon leitet sich auch die Bezeichnung „CPM“ ab. Der kritische Weg durch einen Netzplan ist diejenige Folge von Vorgängen, die die **minimale** Projektdauer bestimmt **(kritische Vorgänge)**. Nicht immer gibt es nur **einen** kritischen Weg in einem Netzplan.

■ Alle Vorgänge im Netzplan, die nicht auf einem kritischen Weg liegen, sind in ihrer Durchführung nicht streng termingebunden. Sie können zeitlich verschoben oder ihre Ausführungsdauer ausgedehnt werden, ohne dass dadurch die errechnete oder vorgegebene minimale Projektdauer tangiert wird. Die dritte Frage lautet: Welche Vorgänge sind nicht streng termingebunden **(nichtkritische Vorgänge)**, sondern können zeitlich verschoben oder ausgedehnt werden und um wie viel? Die ist die Frage nach den **Pufferzeiten**.

Für die Beantwortung dieser und weiterer Fragen ist es notwendig, zunächst die für die einzelnen Vorgänge erforderlichen Ausführungszeiten zu ermitteln. Der eigentlichen Zeitplanung muss also eine **Zeitanalyse** vorausgehen.

3.1 Zeitanalyse

Die **Ermittlung bzw. Schätzung der Vorgangsdauern** ist schwierig. Für jeden Vorgang wird eine Dauer bestimmt, die gemessen, geschätzt oder auf Grund vorhandener Erfahrungen als realistisch vorgegeben wird.

Bei der Ermittlung der Vorgangsdauern sollte auf das Wissen und die Erfahrungen der mit der Projektdurchführung betrauten Mitarbeiter zurückgegriffen werden. Dabei ist aber insofern Vorsicht geboten, als von dieser Seite her oft zu großzügige Schätzungen erfolgen. Die Betroffenen wollen sich auf diese Weise eine **„Zeitreserve“** verschaffen.

Die Vorgangsdauer ist oft von Qualität und Umfang der eingesetzten Kapazitäten (Arbeitskräfte, Betriebsmittel) abhängig. Deshalb erfolgt z.B. vielfach die Schätzung des Zeitbedarfs, den **eine** Person (oder Maschine etc.) für die Ausführung des Vorgangs benötigen würde. Das Ergebnis sind dann beispielsweise „Mann-Stunden“, „Maschinen-Stunden“.

Die Ermittlung von Vorgangszeiten durch Mitarbeiter führt zu subjektiven Einflüssen auf die Ergebnisse. Das **Unsicherheitsproblem** wird bei vielen Verfahren der NPT nicht berücksichtigt; gearbeitet dann mit **einem Zeitwert** für jeden Vorgang **(Einzeitenschätzung**). CPM und MPM sowie die darauf basierenden Verfahren verwenden Einzeitenschätzungen.

Bei PERT wird berücksichtigt, dass die Ausführungsdauer eines Vorgangs (i, j) nicht eindeutig ist, sondern dass dafür eine **Wahrscheinlichkeitsverteilung** existiert. Zur Ermittlung der Wahrscheinlichkeitsverteilung bedient man sich bei PERT des **Drei-Werte-Verfahrens** (*Hillier, F.S., Lieberman, G.J., 2002*, S. 486 ff.):

■ Die **wahrscheinlichste Vorgangsdauer** - ND(i,j) - ist die Zeit, die unter normalen Bedingungen für die Ausführung eines Vorgangs benötigt wird (häufigster Wert der Verteilung bei Wiederholungen).
■ Die **pessimistische Vorgangsdauer** - PD(i,j) - ist die Zeit, die unter schlechtesten Bedingungen benötigt wird (1 % Eintrittswahrscheinlichkeit).
■ **Die optimistische Vorgangsdauer** - OD(i,j) - ist die kürzestmögliche Ausführungszeit (ebenfalls 1 % Eintrittswahrscheinlichkeit).
Aus den drei Zeitschätzwerten errechnet man nach einer aus der Betaverteilung abgeleiteten Formel für jeden Vorgang (i,j) die erwartete Zeitdauer - ED(i,j) - und aus den Differenzen zwischen PD (i,j) und OD (i,j) Varianzen - VAR D(i,j) - der erwarteten Vorgangszeiten:
Ausführungsdauer eines Vorgangs (i,j) (Erwartungswert bzw. gewogenes arithmetisches Mittel):

$$\text{ED(i,j)} = \frac{OD(i,j)+4ND(i,j)+PD(i,j)}{6}$$

Varianz der Wahrscheinlichkeitsverteilung der Ausführungsdauer eines Vorgangs (i,j) (Streuungsmaß):

$$\text{VAR D(i,j)} = \left(\frac{PD(i,j)-OD(i,j)}{6}\right)^2$$

Die Beziehungen zwischen ED(i,j) bzw. VAR D(i,j) und OD(i,j), ND(i,j), PD(i,j) ergeben sich aus den Eigenschaften der unterstellten Betaverteilung; diese Verteilung ist in der Literatur als die am besten geeignete für die Wahrscheinlichkeitsverteilung der Vorgangsdauern ausgewählt worden. Dabei muss festgestellt werden, dass bisher weder ein empirischer Nachweis dieser Verteilungsfunktion gelungen ist, noch eine theoretische Ableitung hierfür erfolgte. Daher wurde versucht, durch möglichst genaue Beschreibung der besonderen Eigenschaften der Vorgangsdauerverteilung eine adäquate bekannte Funktion zu finden. Zum einen ist jede Vorgangsdauer zunächst dadurch beschrieben, dass sie keine negativen Werte annehmen kann und mithin die Verteilungsfunktion nur für ein abgeschlossenes, nichtnegatives Intervall erklärt sein darf. Zum anderen wird unterstellt, dass Vorgangsdauern nur um einen Wert - ND(i,j) - streuen, die Wahrscheinlichkeitsverteilung also eingipflig ist. Drittens ist für die Zeit (als einem stetigen Merkmal) von einer stetigen Verteilung auszugehen.

Schließlich lassen sich - bei Unterstellung einer Normalverteilung für die Termine der Ereignisse - Wahrscheinlichkeiten für das Einhalten vorgegebener Termine berechnen (vgl. *Litke, H.-D.*, 2007, S. 154 ff.; *Runzheimer, B.*, 1999, S. 197 ff.; *Schwarze, J.*, 2006, S. 186 ff.; *Corsten, H., Corsten, H., Gössinger, R.*, 2008, S. 226 ff.).

Die **Mehrzeitenschätzung** erfordert naturgemäß einen größeren Aufwand als die Einzeitenschätzung. Diese Schätzwerte des **Drei-Werte-Verfahrens**

schalten selbstverständlich das Unsicherheitsproblem nicht aus, durch die Mehrzeitenschätzung wird es aber sehr wohl offen gelegt.

3.2 Zeitplanung mit CPM

Sind die für die Zeitplanung erforderlichen Daten verfügbar, kann die Zeitberechnung beginnen.

3.2.1 Ermittlung des kritischen Weges

Die **minimale Projektdauer** wird durch den **zeitlich gesehen längsten Weg durch den Netzplan (kritischer Weg)** bestimmt. Zur Bestimmung des kritischen Weges wurde ein zweckmäßiges Verfahren entwickelt, bei dem für jeden **Vorgang** (i,j) sein **frühestmöglicher Anfang** FA (i,j) sowie sein **spätestzulässiger Anfang** SA (i,j), sein **spätestzulässiges Ende** SE (i,j) und sein **frühestmögliches Ende** FE (i,j) berechnet werden. Zugleich ergibt sich für **jedes Ereignis** (j) der **frühestmögliche Zeitpunkt seines Eintretens** (kurz: frühester Ereignis-Zeitpunkt) FZ(j) und der **spätestzulässige Zeitpunkt seines Eintretens** (kurz: spätester Ereignis-Zeitpunkt) SZ(j).
Wird die **Dauer eines Vorgangs** (i,j) mit D(i,j) bezeichnet, so lassen sich FA(i,j) bzw. FZ(j) und damit die minimale Projektdauer formal nach der folgenden Rekursionsbeziehung - die sich auch unter Anwendung der dynamischen Planungsrechnung herleiten lässt (vgl. *Lutz, M.,* 1998, S. 213 ff.) - errechnen **(Vorwärtsrechnung):**

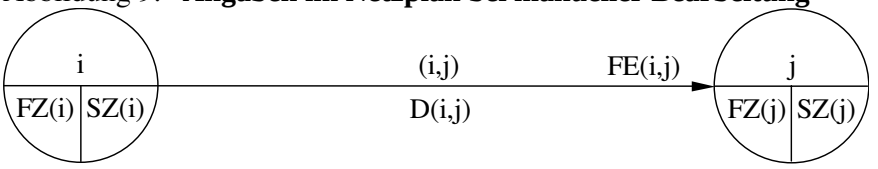
$FZ(1) = 0$

$FZ(j) = \max_{i} [FZ(i) + D(i,j)] \quad i \in \{\text{Vorgänger (j)}\}; j \in \{\text{Nachfolger (i)}\}$

Als Projektbeginn FZ(1) wird üblicherweise der Zeitpunkt 0 vorgegeben. Man kann aber auch jeden beliebigen anderen Wert wählen. Bei **lückenlos aufsteigender Nummerierung der Ereignisse** erfolgt die Bestimmung des **frühestmöglichen Ereignis-Zeitpunktes** FZ(j) wie folgt:
Man bestimmt alle Vorgänge (i,j), die in Ereignis (j) einmünden.
Für jeden einmündenden Vorgang wird das frühestmögliche Ende FE(i,j) berechnet: FE(i,j) = FA(i,j) + D(i,j). Der frühestmögliche Anfang des Vorgangs (i,j) stimmt mit dem frühestmöglichen Ereignis-Zeitpunkt des Ereignisses (i) - des Anfangsereignisses - überein: FA(i,j) = FZ(i). Mithin gilt auch: FE(i,j) = FZ(i) + D(i,j). Um die Berechnungen im Netzplan übersichtlich zu halten, können die FE(i,j) an den Pfeilspitzen im Netzplan vermerkt werden (vgl.

Abbildung 109).
Von den unter (2) bestimmten FE(i,j) aller einmündenden Vorgänge ist der größte Wert der gesuchte früheste Ereignis-Zeitpunkt FZ(j) für das Ereignis (j).

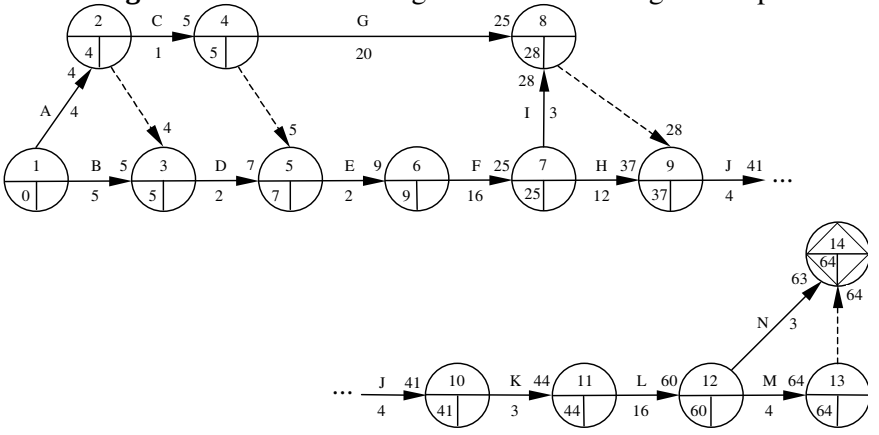
Das ergibt sich daraus, dass ein Ereignis erst eintritt, wenn **alle** einmündenden Vorgänge abgeschlossen sind.
Der früheste Ereignis-Zeitpunkt für das Zielereignis FZ(n) entspricht für den gegebenen Netzplan der **minimalen Projektdauer**. Solange Netzpläne manuell bearbeitet werden, erfolgen die Berechnungen am Netz. Deshalb werden an jedem Pfeil die entsprechenden Vorgangsdauern D(i,j) und in jedem Knoten die Ereigniszeitpunkte vermerkt. Dazu werden die Knoten entsprechend unterteilt:
Abbildung 9: **Angaben im Netzplan bei manueller Bearbeitung**



Für das Teilprojekt I des Projektbeispiels (vgl. **Abbildung** 8 und

1) ergeben sich durch **Vorwärtsrechnung** folgende Zeitwerte (vgl. Abbildung 10):

Abbildung 10: Bestimmung der frühesten Ereignis-Zeitpunkte



Mit der unter den gegebenen Voraussetzungen errechneten **minimalen Projektdauer** FZ(14) von 64 Arbeitstagen für das Teilprojekt I

(Rohbauerstellung) liegt eine erste wichtige Information für die Zeitplanung vor. Ist die „**erwünschte" Projektdauer** kürzer als die **errechnete**, sind Anpassungen erforderlich. Im umgekehrten Fall kann eventuell durch Verlängerung dieses Projektes die Beseitigung einer Engpasssituation bei anderen Vorhaben erreicht werden. Bestehen keine zeitlichen Vorgaben, so wird in der Regel das Projekt in der kürzestmöglichen Zeit zu realisieren sein. Das bedeutet, dass der spätestzulässige Zeitpunkt des Zielereignisses SZ(n) mit dem frühestmöglichen Zeitpunkt des Zielereignisses FZ(n) gleichgesetzt wird - **FZ(n) = SZ(n)** -.

Anschließend sind für alle übrigen Ereignisse (i) innerhalb des Netzplanes die spätestzulässigen Ereignis-Zeitpunkte SZ(i) zu bestimmen. Diese Berechnung entspricht derjenigen bei der Ermittlung der frühestmöglichen Ereigniszeitpunkte mit dem Unterschied, dass nunmehr vom Zielereignis ausgehend die Berechnungen rückwärts im Netzplan erfolgen **(Rückwärtsrechnung)**.

Ein beliebiges Ereignis tritt nur dann so spät wie möglich ein, wenn sämtliche ihm im Netzplan unmittelbar und mittelbar vorangehenden Vorgänge noch zum spätestzulässigen Zeitpunkt realisiert werden. Formal ergeben sich die wiederum rekursiven Beziehungen:

$SZ(n) = FZ(n)$

$SZ(i) = \min_{j} [SZ(j) - D(i,j)]$ $\quad i \in \{\text{Vorgänger (j)}\}; j \in \{\text{Nachfolger (i)}\}$

Sind die Ereignisse lückenlos aufsteigend nummeriert und ist der spätestzulässige Zeitpunkt für das Eintreten des Zielereignisses vorgegeben, so erfolgt die Bestimmung des **spätestzulässigen Ereignis-Zeitpunktes** SZ(i) wie folgt:

Es werden alle Vorgänge (i,j) bestimmt, die von dem Ereignis (i) abgehen.

Für jeden abgehenden Vorgang wird der spätestzulässige Anfang SA(i,j) berechnet:

$SA(i,j) = SE(i,j) - D(i,j)$

Das spätestzulässige Ende des Vorgangs (i,j) stimmt mit dem spätestzulässigen Zeitpunkt für das Endereignis dieses Vorgangs SZ(j) überein:

$SE(i,j) = SZ(j)$

Mithin gilt auch:

$SA(i,j) = SZ(j) - D(i,j)$

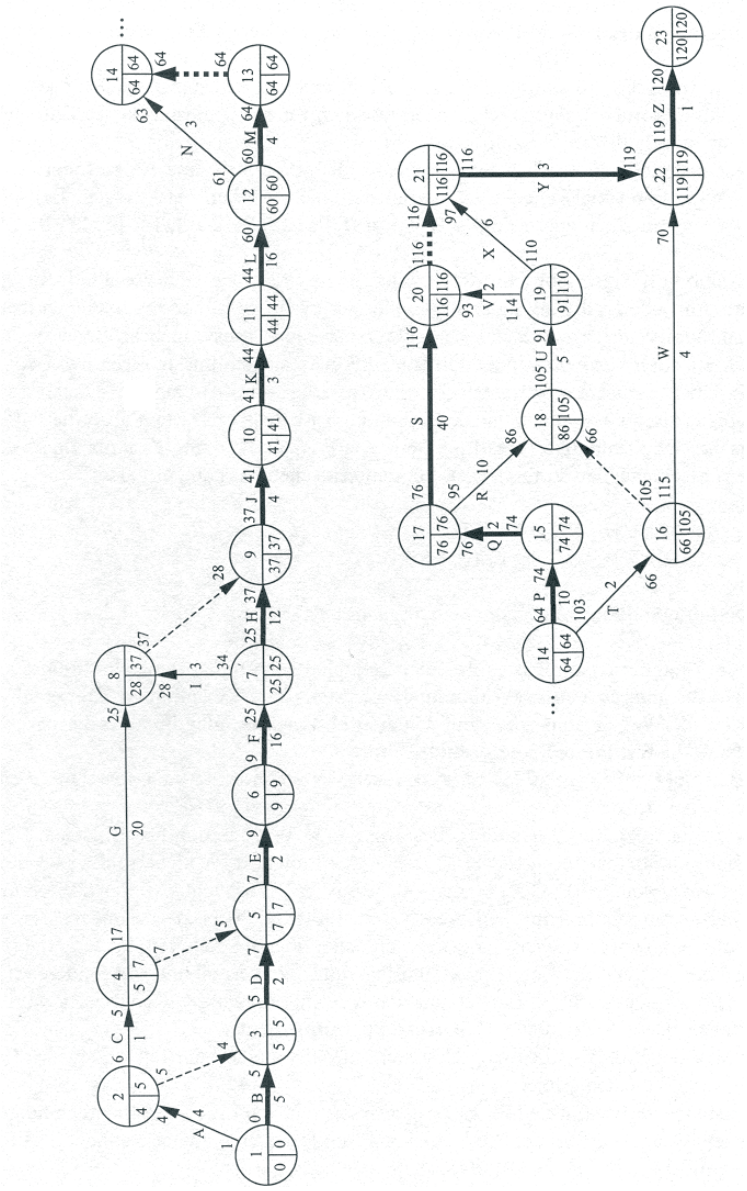
Um die Berechnungen im Netzplan übersichtlich zu halten, können die SA(i,j) an den Pfeilschäften im Netzplan vermerkt werden (vgl. Abbildung 11).

Von den unter (2) bestimmten Werten SA(i,j) aller abgehenden Vorgänge ist der kleinste der gesuchte spätestzulässige Ereignis-Zeitpunkt SZ(i) für das Ereignis (i). Das ergibt sich daraus, dass ein Vorgang erst dann beginnen kann, wenn sein Anfangsereignis eingetreten ist.

Auch hier lässt sich der Algorithmus anpassen: Man wählt in Schritt (1) als nächstes das zu bearbeitende Ereignis i aus, für das die spätesten Zeitpunkte

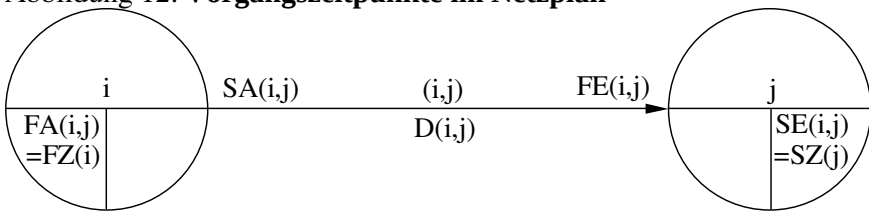
aller Nachfolgereignisse SZ(j) bereits bestimmt wurden (*Schwarze, J.*, 2006, S. 181). Für das Projekt (vgl. 1 und Abbildung 7) ergeben sich folgende Ereigniszeitpunkte gemäß Abbildung 111:

Abbildung 11: **Bestimmung der Ereigniszeitpunkte für das Projektbeispiel**



Die Berechnung der spätestzulässigen Ereigniszeitpunkte beginnt mit dem Zielereignis und richtet sich in der Reihenfolge nach abnehmenden Ereignisnummern. Es ist zu beachten, dass mit der Ermittlung der Ereigniszeitpunkte im Netzplan gleichzeitig auch die für die Vorgänge zu bestimmenden Zeitpunkte berechnet wurden.
Vergleicht man die frühestmöglichen und die spätestzulässigen Ereigniszeitpunkte, so stellt man fest, dass außer für das Start- und Zielereignis auch noch für weitere Ereignisse hier Übereinstimmung besteht. Diese **Ereignisse** müssen also zu **genau festgelegten Zeitpunkten eintreten (kritische Ereignisse).** Sie sind „kritisch" in dem Sinne, dass jede Überschreitung des errechneten Zeitpunktes zu einer Verlängerung der minimalen Projektdauer führt. Bei einigen anderen Ereignissen (in realistischen Projekten sind es die meisten) stimmen FZ(j) und SZ(j) nicht überein, d.h. die Eintrittszeitpunkte sind hier verschieden. Der **Zeitpunkt** für das **Eintreten** dieser **Ereignisse** ist dann **nicht genau festgelegt**. Er kann mit FZ(j) oder mit SZ(j) übereinstimmen oder irgendwo dazwischen liegen. Die **Differenz** zwischen spätestzulässigem und frühestmöglichem Zeitpunkt für den Eintritt eines Ereignisses gibt den **zeitlichen Spielraum** an, in dem dieses Ereignis eintreten muss, wenn die geplante minimale Projektdauer eingehalten werden soll. Diese Differenz wird **gesamte Pufferzeit eines Ereignisses** GPE(j) genannt:
$GPE(j) = SZ(j) - FZ(j) \qquad j = 1, 2, ..., n$
Je geringer diese Differenz ist, umso mehr Bedeutung kommt dem entsprechenden Ereignis im Rahmen der **Projektüberwachung** zu. Bei kritischen Ereignissen ist der gesamte Ereignispuffer GPE(j) = 0. Im Beispiel von Abbildung 111 wurde das Zielereignis dadurch kritisch gemacht, dass der Zeitpunkt für das frühestmögliche Eintreten mit dem für das spätestzulässige Eintreten gleichgesetzt wurde - FZ(n) = SZ(n) -.
Nach diesem üblichen Vorgehen muss daher in dem Netzplan eine **Folge** (oder auch mehrere Folgen) von **kritischen Ereignissen** entstehen. In dem verwendeten Beispiel gehören 17 Ereignisse zu dieser Folge: 1, 3, 5, 6, 7, 9, 10, 11, 12, 13, 14, 15, 17, 20, 21, 22, 23.
Da CPM eine vorgangsorientierte Methode ist, interessiert man sich vor allem für die **Vorgänge**. Für jeden Vorgang möchte man wissen, wann er frühestens beginnen bzw. enden kann und wann er spätestens beginnen bzw. enden muss. Insbesondere werden auch die **kritischen Vorgänge** innerhalb eines **Projektes** bestimmt. Notwendige Bedingung für einen kritischen Vorgang ist, dass sowohl sein Anfangs- als auch sein Endereignis kritisch sind. Hinreichende Bedingung ist jedoch erst, wenn auch die Differenz zwischen den Zeitpunkten des Eintretens von End- und Anfangsereignis gleich der Dauer des entsprechenden Vorgangs ist. Für den kritischen Vorgang gilt also:
$FZ(j) - FZ(i) = D(i,j)$
$FZ(j) = SZ(j); \quad FZ(i) = SZ(i)$

Diese Definition gilt auch für die Scheinvorgänge. Wie für die Ereignisse, so muss es in jedem Netzplan auch mindestens eine **Folge** von **kritischen Vorgängen** geben. Diese Folge wird **kritischer Weg** genannt. Sie stellt den **zeitlich längsten** Weg im Netz dar und bestimmt damit die **minimale Projektdauer**. In dem Beispiel (Abbildung 111) ist der kritische Weg durch die stark ausgezogene Pfeile hervorgehoben.
Da der kritische Weg die Projektdauer bestimmt, muss dem kritischen Weg bei der Projektrealisierung besondere Bedeutung zukommen. Den kritischen Vorgängen ist daher auch im Rahmen der **Kapazitätsplanung** besondere Aufmerksamkeit zu schenken. Das Problem der **Zeit-Kostenplanung** deutet sich hier an. Eine Beschleunigung der Projektrealisierung lässt sich im Allgemeinen nur mit erhöhten („Beschleunigungs-“) Kosten der kritischen Wege erreichen. Berechnet man die Ereigniszeitpunkte im Netzplan und trägt die Zwischenrechnungen in der angegebenen Form an der Pfeilspitze bzw. am Pfeilschaft eines jeden Vorgangs ein, so können die **Vorgangszeitpunkte** wie folgt aus dem Netzplan abgelesen werden:
Abbildung 12: **Vorgangszeitpunkte im Netzplan**



Es bestehen folgende Beziehungen:
- FA(i,j) = FZ(i) i ε {Vorgänger (j)}; j ε {Nachfolger(i)}
- FE(i,j) = FZ(i) + D(i,j)
- SA(i,j) = SZ(j) − D(i,j)
- SE(i,j) = SZ(j)

Gesonderte Berechnungen entfallen damit. Die Differenz zwischen spätestzulässigem Ende SE(i,j) und dem frühestmöglichen Anfang eines Vorgangs FA(i,j) ist die Zeit, die für die Durchführung eines Vorgangs (i,j) maximal zur Verfügung steht:
MZ(i,j) = SE(i,j) − FA(i,j) = SZ(j) − FZ(i)
Für kritische Vorgänge ist MZ(i,j) = D(i,j), d.h. die **maximal verfügbare Ausführungszeit** entspricht der Vorgangsdauer (gemäß Vorgangsliste). Die Kenntnis von MZ(i,j) kann von Bedeutung sein, wenn man aus irgendwelchen Gründen die Ausführungsdauer eines Vorgangs ausdehnen will. Soll die minimale Projektdauer eingehalten werden, dann kann die Ausführungsdauer maximal bis MZ(i,j) ausgedehnt werden.

3.2.2 Ermittlung und Interpretation der Pufferzeiten

Bei **den nichtkritischen Vorgängen** steht ein **zeitlicher Spielraum** zur Verfügung, um den die Vorgänge hinsichtlich Anfang und Ende verschoben werden können oder um den ihre Ausführungsdauer ausgedehnt werden kann, ohne dass die minimale Projektdauer tangiert wird. Diesen zeitlichen Spielraum nennt man **Puffer** bzw. **Pufferzeit** oder auch **Schlupf**. Ein Vorgang besitzt immer dann einen Puffer, wenn MZ(i,j) > D(i,j).
In der NPT werden im Wesentlichen vier verschiedene Arten von Puffer unterschieden *(Schwarze, J.,* 2006, S. 213ff.):

(1) Gesamte Pufferzeit eines Vorgangs GP(i,j)

GP(i,j) = MZ(i,j) – D(i,j) i ε {Vorgänger (j)}; j ε {Nachfolger(i)}
= SE(i,j) – FE(i,j)
= SZ(j) – FE(i,j)
= SA(i,j) – FA(i,j)
= SZ(j) – D(i,j) – FZ(i)

Diese Größe gibt die Zeitspanne an, die für die Verschiebung oder Ausdehnung des Vorgangs maximal verfügbar ist. Rein rechnerisch besitzt jeder nichtkritische Vorgang einen gesamten Puffer. Liegen mehrere nichtkritische Vorgänge hintereinander, dann sind die „gesamten Pufferzeiten" der auf diesem nichtkritischen Teilweg liegenden Vorgänge **nicht** mehr **unabhängig voneinander**. Eine Folge von Vorgängen wird dann **Teilweg** genannt, wenn mit Ausnahme des zugehörigen Anfangs- und Endereignisses in jedem seiner übrigen Ereignisse nur jeweils ein Vorgang beginnt bzw. endet. Der gesamte Puffer kann auf diesem nichtkritischen Teilweg **nur einmal** in Anspruch genommen werden. Er ist gewissermaßen der Puffer des jeweiligen nichtkritischen Teilweges. Wird bei einem Vorgang die gesamte Pufferzeit verbraucht, dann entsteht dadurch ein neuer kritischer Weg. Man betrachtet daher die gesamte Pufferzeit besser als einem Teilweg zugehörig, anstatt sie einzelnen Vorgängen zuzuordnen.

(2) Freie Pufferzeit eines Vorgangs FP(i,j)

FP(i,j) = FZ(j) – FE(i,j) (i = 1, 2, ..., n – 1; j = 2, 3, ..., n)
= FZ(j) – D(i,j) – FZ(i)
= GP(i,j) – GPE(j)

Eine freie Pufferzeit eines Vorgangs kann nur auftreten, wenn in das Endereignis des Vorgangs noch andere Vorgänge einmünden und FZ(j) nicht durch den betrachteten Vorgang bestimmt wird. Betrachtet man nur die in ein gemeinsames Endereignis einmündenden Teilwege, so bedeuten unterschiedliche gesamte Pufferzeiten auf den Teilwegen, dass für die Realisierung der Vorgänge auf einem Teilweg mit größerer gesamter Pufferzeit mehr Zeit zur Verfügung steht als auf einem Teilweg mit geringerer gesamter Pufferzeit. Wird diese **mehr** verfügbare Zeit beansprucht, so beeinträchtigt das nicht das Eintreffen des Endereignisses dieses Teilweges zum frühestmöglichen

Zeitpunkt und auch nicht die gesamte Pufferzeit der anderen Teilwege. Das besagt, dass der zeitliche Ablauf aller nachfolgenden Vorgänge in keiner Weise beeinflusst wird, wenn die freie Pufferzeit durch Ausdehnung der Vorgangsdauer oder durch Verzögerung der Ausführung verbraucht wird. Darin liegt die Bedeutung des **freien Puffers**. Er kann in Anspruch genommen werden, ohne dass dadurch die FA(i,j) der nachfolgenden Vorgänge verschoben werden, und damit die Flexibilität in der Zeitplanung des restlichen Projektes tangiert wird. Obwohl auch die freie Pufferzeit sämtlichen Vorgängen des entsprechenden Teilweges zur Verfügung steht, teilt die Berechnung sie nur einzelnen Vorgängen zu, und zwar nur dem letzten Vorgang des Teilweges.

(3) Unabhängige Pufferzeit eines Vorgangs UP(i,j)

Es liegt nahe, auch eine Pufferzeit für einen Vorgang zu definieren, die unabhängig davon ist, zu welchem Zeitpunkt die Vorgänger dieses Vorgangs begonnen werden. Die unabhängige Pufferzeit tritt immer dann auf, wenn die Differenz zwischen frühestmöglichem Eintreten des Endereignisses FZ(j) und spätestzulässigem Eintreten des Anfangsereignisses SZ(i) größer als die Dauer des Vorgangs D(i,j) ist.

$$UP(i,j) = \max \begin{cases} 0 \\ FZ(j) - SZ(i) - D(i,j) \end{cases} \quad i \in \{\text{Vorgänger (j)}\};\ j \in \{\text{Nachfolger(i)}\}$$

Die Bestimmungsgleichung für UP(i,j) bedeutet, dass UP(i,j) = 0 ist, falls FZ(j) − SZ(i) − D(i,j) ≤ 0; sonst ist UP(i,j) = FZ(j) − SZ(i) − D(i,j).

Die Differenz FZ(j) − SZ(i) − D(i,j) kann also durchaus negativ sein, nur existiert dann keine unabhängige Pufferzeit (UP(i,j) = 0). Die **unabhängige Pufferzeit** ist die Zeitdauer, um den ein Vorgang auch dann noch ausgedehnt oder verschoben werden kann, wenn alle Vorgängerereignisse von j zum spätestzulässigen Zeitpunkt und alle Nachfolgerereignisse von i frühestmöglich stattfinden. Durch seine Inanspruchnahme bleibt der übrige Zeitplan unberührt. Aus den gegebenen Definitionen der Vorgangspufferzeiten lässt sich folgende Relation ableiten: GP(i,j) ≥ FP(i,j) ≥ UP(i,j).

(4) Bedingte Pufferzeit eines Vorgangs BP(i,j)

Um diese Zeitspanne kann ein Vorgang ausgedehnt oder verschoben werden zu Lasten der nachfolgenden nichtkritischen Vorgänge:

$$BP(i,j) = SZ(j) - FZ(j) = GPE(j) \quad i \in \{\text{Vorgänger (j)}\};\ j \in \{\text{Nachfolger(i)}\}$$

Die Summe aus freier und bedingter Pufferzeit eines Vorgangs entspricht seiner gesamten Pufferzeit:

$$GP(i,j) = FP(i,j) + BP(i,j)$$

Die Berechnung der Pufferzeiten kann in einer Tabelle (vgl. Tabelle 2 und Abbildung 11) erfolgen. In eine solche Tabelle trägt man alle bereits bekannten Zeitangaben ein, also Vorgangsdauer und Ereigniszeitpunkte - Spalten (1), (2), (3), (4) und (7) -. Die Ausführungsdauern der Vorgänge werden der Zeitanalyse, die Ereigniszeitpunkte dem Netzplan (vgl. Abbildung 111) entnommen.

Abschließend sei noch darauf hingewiesen, dass die häufig vertretene Ansicht, die NPT minimiere die Projektdauer, nicht zutreffend ist. Die Zeitplanung baut nämlich auf einer festen Projektstruktur auf. Für genau diese feste Projektstruktur wird ein detaillierter Zeitplan erarbeitet. Das schließt aber nicht aus, dass es andere Ablaufstrukturen desselben Projektes gibt, die zu einer kürzeren Projektdauer führen können. Um die absolut kleinste Projektdauer zu finden, müsste man alle denkbaren Projektabläufe untersuchen. Mit der NPT kann man also immer nur eine **minimale Projektdauer für eine „gegebene" Projektstruktur** ermitteln.

Tabelle **2**: **Ergebnis der manuellen Zeitplanung des Projektbeispiels**

Vorgang Kurzbezeichnung (*)	(i,j)	D(i,j) (1) (*)	SZ(i) (2) (*)	FZ(j) (3) (*)	FA(i,j) = FZ(i) (4) (*)	SA(i,j) (5) = (7) - (1)	FE(i,j) (6) = (4) + (1)	SE(i,j) = SZ(j) (7) (*)	GP(i,j) (8) = (7) - (6)	FP(i,j) (9) = (3) - (6)	UP(i,j) (10) = (3) - (2) - (1)	BP(i,j) (11) = (7) - (3)	MZ(i,j) (12) = (7) - (4)
A	(1,2)	4	0	4	0	1	4	5	1	0	0	1	5
B	(1,3)	5	0	5	0	0	5	5	kritisch	0	0	0	5
C	(2,4)	1	5	5	4	6	5	7	2	0	0	2	3
D	(3,5)	2	5	7	5	5	7	7	kritisch	0	0	0	2
E	(5,6)	2	7	9	7	7	9	9	kritisch	0	0	0	2
F	(6,7)	16	9	25	9	9	25	25	kritisch	0	0	0	16
G	(4,8)	20	7	28	5	17	25	37	12	3	1	9	32
H	(7,9)	12	25	37	25	25	37	37	kritisch	0	0	0	12
I	(7,8)	3	25	28	25	34	28	37	9	0	0	9	12
J	(9,10)	4	37	41	37	37	41	41	kritisch	0	0	0	4
K	(10,11)	3	41	44	41	41	44	44	kritisch	0	0	0	3
L	(11,12)	16	44	60	44	44	60	60	kritisch	0	0	0	16
M	(12,13)	4	60	64	60	60	64	64	kritisch	0	0	0	4
N	(12,14)	3	60	64	60	61	63	64	1	1	1	0	4
P	(14,15)	10	64	74	64	64	74	74	kritisch	0	0	0	10
Q	(15,17)	2	74	76	74	74	76	76	kritisch	0	0	0	2
R	(17,18)	10	76	86	76	95	86	105	19	0	0	19	29
S	(17,20)	40	76	116	76	76	116	116	kritisch	0	0	0	40
T	(14,16)	2	64	66	64	103	66	105	39	0	0	39	41
U	(18,19)	5	105	91	86	105	91	110	19	0	0	19	24
V	(19,29)	2	110	116	91	114	93	116	23	0	4	0	25
W	(16,22)	4	105	119	66	115	70	119	49	49	10	0	53
X	(19,21)	6	110	116	91	110	97	116	19	19	0	0	25
Y	(21,22)	3	116	119	116	116	119	119	kritisch	0	0	0	3
Z	(22,23)	1	119	120	119	119	120	120	kritisch	0	0	0	1

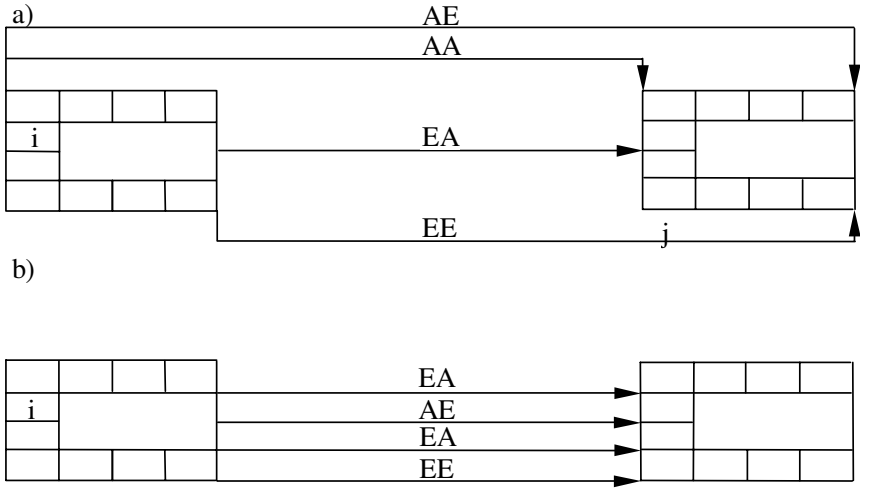
(*) Die Angaben dieser Spalten müssen vorab eingetragen werden

3.3 Zeitplanung mit Vorgangsknotennetzen

3.3.1 Grundlagen und Begriffsbestimmungen

Vorgangsknotennetze gestatten in ihrer allgemeinen Struktur die Darstellung verschiedener **Anordnungsbeziehungen** zwischen den Vorgängen. Abbildung 13 zeigt die vier zulässigen Arten von Anordnungsbeziehungen zwischen einem Vorgänger i und einem Nachfolger j:

Abbildung 13: **Zulässige Anordnungsbeziehungen bei einem Vorgangsknotennetz**



Die vier zulässigen Anordnungsbeziehungen können sein:

- Ende-Anfang-Beziehung (EA)
- Anfang-Ende-Beziehung (AE)
- Ende-Ende-Beziehung (EE)
- Anfang-Anfang-Beziehung (AA)

Alle vier dargestellten Beziehungen stellen **Mindestabstände** zwischen dem Vorgänger i und dem Nachfolger j dar. Bei der Darstellung in Abbildung 13a repräsentieren die linke Seite des Knotenrechtecks den Vorgangsanfang und die rechte Seite des Knotenrechtecks das Vorgangsende.

In Abbildung 14b wird die weniger anschauliche Darstellungsform der vier möglichen Anordnungsbeziehungen gezeigt, die auch in der Praxis anzutreffen ist. Die Art der Anordnungsbeziehungen wird hier durch die Buchstaben A und E an den Pfeilen symbolisiert.

a) Ende-Anfang-Beziehung

Die einfachste Beziehung zwischen Vorgängen ist die **„Ende-Anfang-Beziehung“ (EA)**. Ist i Vorgänger von j, so kann j erst beginnen, wenn i abgeschlossen ist. Diese Ende-Anfang-Beziehung wird (nach DIN 69900) „Normalfolge (NF)“ genannt. Diese Abhängigkeit gibt einmal die Reihenfolge der Vorgänge an, zum anderen beinhaltet sie eine Aussage hinsichtlich der

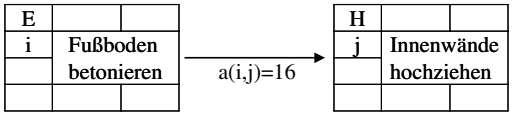
zeitlichen Reihenfolge. Die übliche Ende-Anfang-Beziehung drückt einen **zeitlichen Mindestabstand** zwischen dem Ende des Vorgängers i und dem Anfang des Nachfolgers j aus. Vorgang j kann zwar erst beginnen, wenn Vorgang i beendet ist, das Ende von i muss aber nicht mit dem Anfang von j zusammenfallen; j kann demnach auch später als das Ende von i beginnen. Diese Ende-Anfang-Beziehung mit zeitlichem Mindestabstand - kurz: MINEA - ist die häufigste Anordnungsbeziehung zwischen Vorgängen. Vorgangsknotennetze, die nur Abhängigkeiten in dieser Form berücksichtigen, heißen „einfache Vorgangsknotennetze".

In einem Vorgangsknotennetz ist es nun möglich, einen zwei Knoten verbindenden Pfeil, der die Abhängigkeit der den Knoten zugeordneten Vorgänge darstellt, mit dem **zeitlichen Mindestabstand** MINEA zu bewerten. Dieser Zeitabstand a(i,j) gibt an, wie viel Zeit bei einer Abhängigkeit der Form MINEA mindestens zwischen dem Ende des Vorgängers (Vorgang i) und dem Anfang des Nachfolgers (Vorgang j) liegen muss. Die zeitlichen Abstände a(i,j) zwischen den Vorgängen i und j werden allgemein **„Potenziale"** genannt.

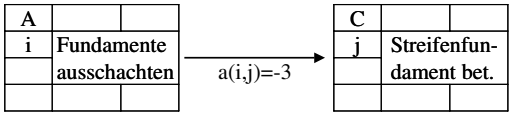
Soll z.B. in unserem Projektbeispiel (vgl.) auf den Vorgang „Fußboden betonieren" (i) der Vorgang „Innenwände hochziehen" (j) folgen, so kann die dazwischen notwendige „Abbindedauer des Fußbodenbetons" mit 16 Tagen Zeitbedarf durch a(i,j) = 16 berücksichtigt werden (Abbildung 14a):

Abbildung 14: **Zeitabstände bei einem Vorgangsknotennetz mit Ende-Anfang-Beziehung**

a) Positives Potenzial



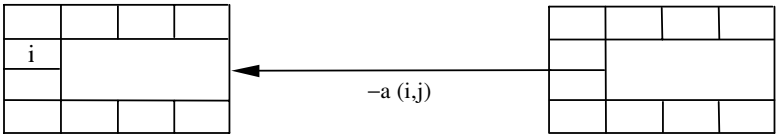
b) Negatives Potenzial



Bei einem Vorgangspfeilnetz (CPM) muss die „Abbindedauer des Fußbodenbetons" durch einen besonderen Vorgang (Pfeil F; vgl. Abbildung 11) berücksichtigt werden. In einer Reihe von Fällen kann es sinnvoll sein, auch mit einem negativen Zeitabstand im Vorgangsknotennetz zu arbeiten (a(i,j) < 0). Soll es z.B. in unserem Projektbeispiel (vgl.) möglich sein, dass mit dem Vorgang „Streifenfundamente betonieren" (j) bereits begonnen werden kann, bevor der Vorgang „Fundamente ausschachten" (i) vollständig beendet ist, so hängt der Nachfolger „Streifenfundamente betonieren" (j) zwar von dem Ende des Vorgänger „Fundamente ausschachten" (i) ab, der Beginn des Vorgangs j kann aber früher liegen. Kann mit Vorgang j beispielsweise schon drei Tage vor dem Ende des Vorgängers i begonnen werden, so kann dies durch den negativen Zeitabstand a(i,j) = −3 an dem entsprechenden Pfeil kenntlich

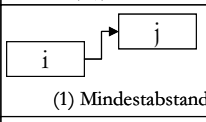
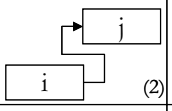
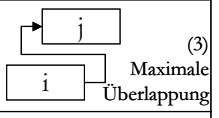
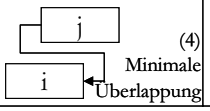
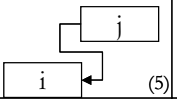
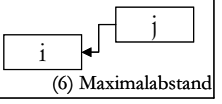
gemacht werden (vgl. Abbildung 14b). Während ein positives Potenzial einen zeitlichen Mindestabstand (MINEA: minimale Wartezeit zwischen dem Ende des Vorgängers i und dem Anfang des Nachfolgers j) bedeutet, gibt ein negatives Potenzial die **maximale Überlappungszeit** der beiden aufeinander folgenden Vorgänge an. Die maximale Überlappungszeit ist die Zeit, in der die beiden betreffenden Vorgänge längstens (zeitlich) parallel laufen dürfen. Ist an einem Pfeil kein Zeitabstand angegeben, so bedeutet dies formal a(i,j) = 0. Besteht die Bedingung, dass bei zwei aufeinander folgenden Vorgängen zwischen dem Ende des Vorgängers i und dem Anfang des Nachfolgers j nur ein maximaler Zeitabstand liegen darf, so besagt dies, dass der Nachfolger j spätestens a(i,j) Zeiteinheiten nach dem Ende von Vorgang i beginnen muss. Dieser **zeitliche Maximalabstand** wird durch MAXEA symbolisiert und wie folgt im Netzplan durch einen **Pfeil in entgegengesetzter Richtung mit einem negativen Potenzial** dargestellt (Abbildung 15):

Abbildung 15: **Darstellung eines maximalen Zeitabstandes zwischen aufeinander folgenden Vorgängen**



In unserem Projektbeispiel müsste beispielsweise zwischen den Vorgängen „Beton für Fußboden anfahren“ (i) und „Verteilen und Glätten des Fußbodenbetons“ (j) ein MAXEA vorgegeben werden. Würde der vorgegebene maximale Zeitabstand zwischen dem Ende des Vorgängers i und dem Anfang des Nachfolgers j überschritten, so würde der Beton schon so weit abgehärtet sein, dass man ihn nicht mehr genügend gut verteilen und glätten könnte.

Abbildung 16: **Bedeutung von Potenzialen bei MINEA bzw. MAXEA**

Ende-Anfang	a(i,j) > 0	a(i,j) = 0	a(i,j) < 0
Mindestabstand MINEA			
Maximalabstand MAXEA			

(1) Frühestens kann j beginnen, a(i,j) Zeiteinheiten nach dem Ende von i
(2) Frühestens kann j beginnen, 0 Zeiteinheiten vor dem Ende von i

(3) Frühestens kann j beginnen, a(i,j) Zeiteinheiten vor dem Ende von i
(4) j muss spätestens a(i,j) Zeiteinheiten vor Beendigung von i beginnen
(5) j muss spätestens mit Beendigung von i beginnen
(6) j muss spätestens a(i,j) Zeiteinheiten nach Beendigung von i beginnen

---

Ein maximaler zeitlicher Abstand MAXEA zwischen dem Ende des Vorgangs i und dem Anfang von Vorgang j mit dem Potenzial a(i,j) bedeutet, dass der früheste Anfang von Vorgang j (FA(j)) maximal a(i,j) Zeiteinheiten nach dem frühesten Ende des Vorgangs i (FE(i)) liegen darf:

$FA(j) \leq FE(i) + a(i,j)$ oder (umgeformt) $FE(i) \geq FA(j) - a(i,j)$

Diese Bedingung entspricht also dem Minimalabstand zwischen dem Anfang von Vorgang j und dem Ende von Vorgang i mit dem zeitlichen Abstand −a(i,j). Diese Darstellungsart zeigt, dass die Maximalbedingung in eine Minimalbedingung überführt werden kann. Dadurch brauchen bei der Durchführung der Zeitplanung nur Minimalbedingungen berücksichtigt werden.

b) Anfang-Ende-Beziehung

Die „**Anfang-Ende-Beziehung**“ **(AE)** wird (nach DIN 69900) „Sprungfolge (SF)“ genannt. MINAE bzw. MAXAE gibt den zeitlichen Mindest- bzw. Höchstabstand an, der zwischen dem Anfang des Vorgängers i und dem Ende des Nachfolgers j liegt. Diese Abhängigkeit kommt selten vor, so dass Netzpläne auf der Basis der Anfang-Ende-Beziehung nicht üblich sind.

c) Ende-Ende-Beziehung

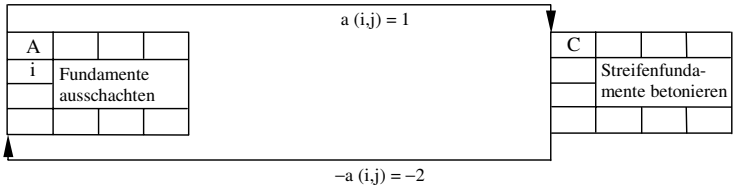
Die „**Ende-Ende-Beziehung**“ **(EE)** beinhaltet, dass ein unmittelbar nachfolgender Vorgang j erst beendet werden kann, wenn der vorausgehende Vorgang i abgeschlossen ist. Diese Beziehung wird (nach DIN 69900) „Endfolge (EF)“ genannt. Die Zeitabstände werden analog mit MINEE bzw. MAXEE symbolisiert. Die Potenziale a(i,j) können positiv, Null oder negativ sein.

d) Anfang-Anfang-Beziehung

Eine letzte Beziehung zwischen Vorgängen ist die **„Anfang-Anfang-Beziehung“ (AA)**. Diese Beziehung wird (nach DIN 69900) „Anfangsfolge (AF)“ genannt. Die **Metra-Potenzial-Methode** (**MPM**) arbeitet mit dieser Anfang-Anfang-Beziehung. MINAA bedeutet, dass Vorgang j **frühestens** eine bestimmte Zeit a(i,j) nach dem Anfang des Vorgangs i beginnen kann. MAXAA gibt an, um wie viel Zeiteinheiten a(i,j) ein Vorgang j **spätestens** nach dem Anfang des vorangehenden Vorgangs i beginnen muss. Dabei können die Zeitabstände (die Potenziale) größer oder gleich Null sein.

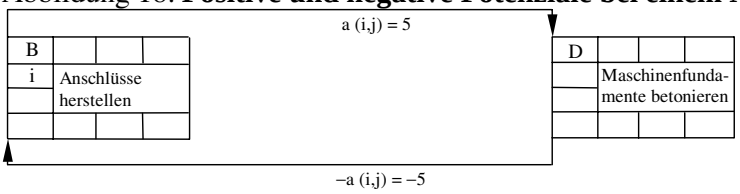
Kann im obigen Projektbeispiel () mit dem Vorgang j „Streifenfundamente betonieren“ schon ein Tag nach dem Anfang des vorangehenden Vorgangs i „Fundamente ausschachten“ begonnen werden, so kann MINAA im Netzplan wie folgt dargestellt werden (a(i,j) = 1):

Abbildung 17: **Positive/negative Potenziale zwischen Vorgängen bei MPM-Netzplänen**



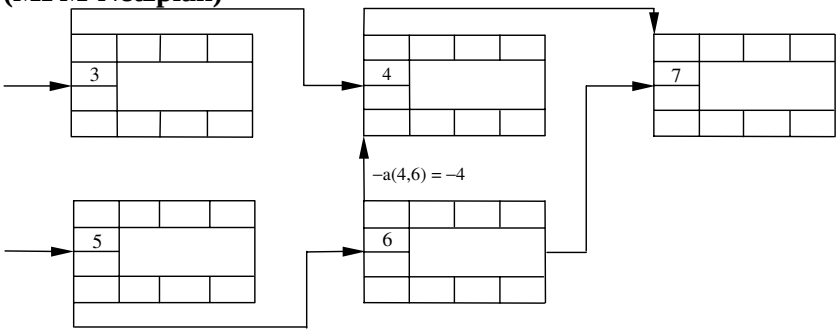
Soll sichergestellt werden, dass die ausgeschachteten Fundamente unverzüglich ausbetoniert werden, um zu verhindern, dass sie eventuell teilweise wieder zerstört werden (z.B. durch Witterungseinflüsse), so müsste ein maximaler Zeitabstand MAXAA zwischen dem Anfang des Vorgangs i „Fundamente ausschachten“ und dem Anfang des Vorgangs j „Streifenfundamente betonieren“ festgelegt werden. In **Error! Reference source not found.** ist MAXAA mit −a(i,j) = −2 an **dem Pfeil in entgegengesetzter Richtung** dargestellt, d.h. der Vorgang j muss spätestens zwei Tage nach dem Anfang des Vorgängers i beginnen. Ein spezieller Fall wird beschrieben, wenn das positive Potenzial a(i,j) und das negative Potenzial −a(i,j) an einem Pfeil in entgegengesetzter Richtung absolut den gleichen Wert annehmen:

Abbildung 18: **Positive und negative Potenziale bei einem MPM-Netzplan**



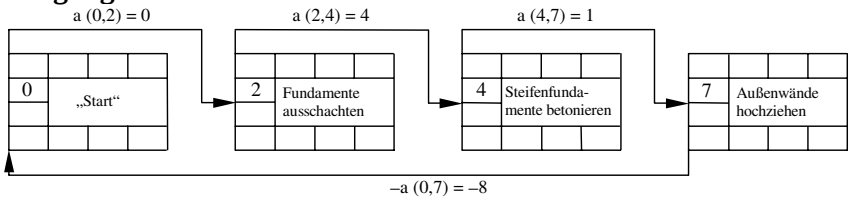
Dies bedeutet, dass mit dem Vorgang j unmittelbar im Anschluss an das Ende des Vorgangs i (Dauer: D(i)=5) begonnen werden muss. Der Pfeil mit positivem Potenzial allein kann diesen Sachverhalt nicht richtig wiedergeben, da er lediglich den zeitlichen Minimal-Abstand MINAA markiert. Abgesehen von dem Tatbestand, dass sich dieser Sachverhalt stets für die **kritischen Vorgänge** im Netzplan ergibt, wird diese Darstellungsform immer dann nötig sein, wenn technische oder organisatorische Umstände eine derart enge Verknüpfung von Vorgängen bedingen. Da es bei dieser zeitlichen Bedingung durchaus nicht notwendig ist, dass der Vorgang j unmittelbar Nachfolger des Vorgangs i ist, lässt sich diese Bedingung auch für andere Sachverhalte verwenden, wie beispielsweise die zeitliche Abstimmung parallel verlaufender, sich aber später vereinigender Abläufe:

Abbildung 19: **Zeitliche Abstimmung parallel verlaufender Vorgänge (MPM-Netzplan)**



In dem vorstehenden Netzplanausschnitt (Abbildung 19) stellt das negative Potenzial −a(4,6) = −4 an dem Pfeil zwischen den Vorgängen i = 4 und j = 6 sicher, dass der Vorgang 6 spätestens 4 Zeiteinheiten nach dem Anfang des Vorgangs 4 begonnen werden muss. Schließlich kann bei einem Vorgangsknotennetz nach MPM eine Beziehung zwischen dem spätestzulässigen Anfang eines Vorgangs j und dem „Projektstart“ hergestellt werden:

Abbildung 20: **Berechnung eines spätestzulässigen Anfangs eines beliebigen Vorgangs**



Eine solche Beziehung ist sinnvoll, wenn z.B. in unserem Projektbeispiel ein bestimmter Bautenstand vor dem Einsetzen des Winters (Frost) erreicht werden soll. So gibt das negative Potenzial −a(0,7) = −8 an dem Pfeil in entgegengesetzter Richtung an, dass der Vorgang „Außenwände hochziehen“ (j = 7) spätestens 8 Tage nach dem Projektstart (i = 0) begonnen werden muss.
Bei Berücksichtigung einer solchen zeitlichen Nebenbedingung fällt auf, dass Zyklen in den Netzplan eingeführt werden. Dabei handelt es sich jedoch nicht um einen Widerspruch zu der allgemeinen Forderung der NPT, dass ein Netzplan zyklen- und schleifenfrei sein muss. Diese Forderung bezieht sich nämlich ausschließlich auf die **Strukturplanung**. Die Einführung derartiger zeitlicher Nebenbedingungen ist grundsätzlich zulässig; allerdings gilt dies nur insoweit, als die zeitlichen Nebenbedingungen, die zu Zyklen geführt haben, mit den übrigen Bedingungen verträglich sind. Dies ist also jeweils zu

überprüfen. Die Verträglichkeit eines solchen Zyklus ist gegeben, wenn die Summe aller Potenziale an den Pfeilen (im Zyklus), einen nichtpositiven Wert ergibt:

$\sum_{i,j} a(i,j) \leq 0$ (für alle (i,j), die die Pfeile im Zyklus kennzeichnen)

In **Error! Reference source not found.** ist die Verträglichkeit gegeben, da

$$\sum_{i,j} a(i,j) = a(0,2) + a(2,4) + a(4,7) - a(0,7) \leq 0$$

$$= 0 + 4 + 1 - 8 = -3$$

Wäre die Verträglichkeit nicht gegeben, so wäre der entsprechende Projektausschnitt nicht realisierbar.

e) Kombination von Anordnungsbeziehungen

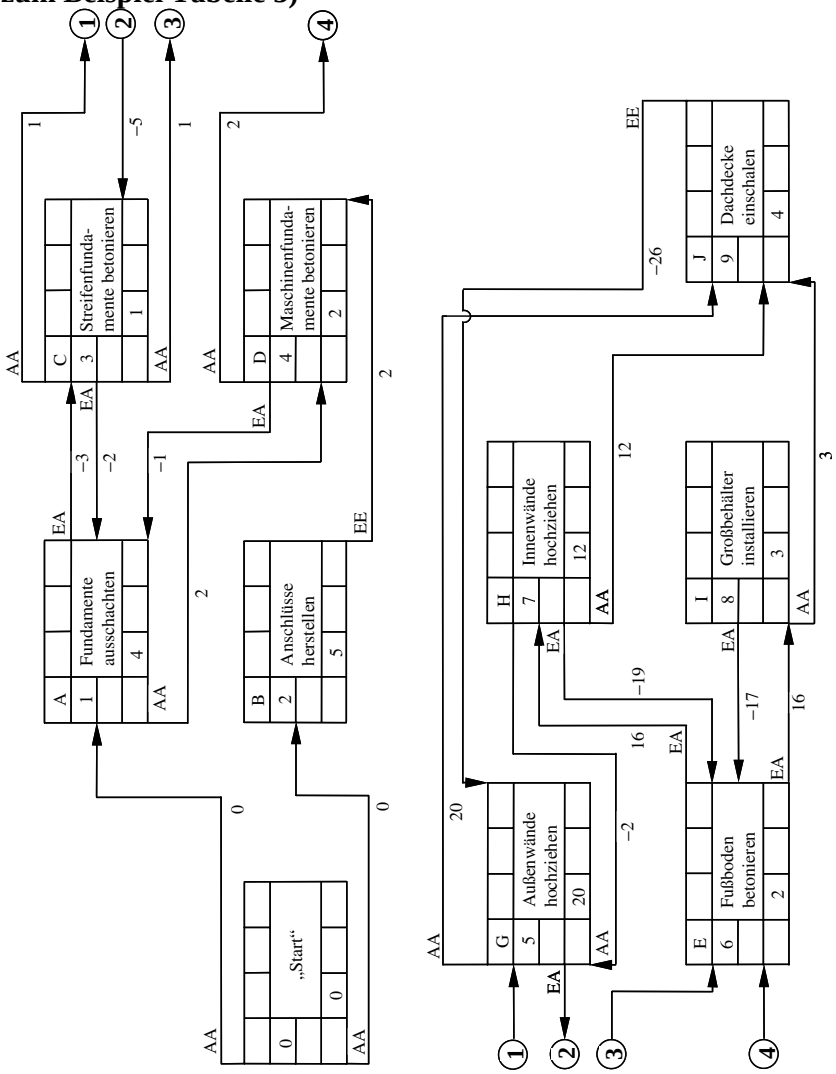
Begrifflich und graphisch ist es möglich, zwischen den Vorgängen mehrere Anordnungsbeziehungen mit minimalen und maximalen Zeitabständen und Pfeilen in beiden Richtungen zu verwenden. Voraussetzung ist jedoch, dass die Beziehungen untereinander und mit den vorgegebenen Vorgangsdauern nicht in Widerspruch geraten. Sollen verschiedene Anordnungsbeziehungen in einem Netzplan verwendet werden, so müsste die Vorgangsliste bei jedem Vorgang um die Angabe der Art der Abhängigkeit und die zugehörigen Zeitabstände ergänzt werden. Zur Demonstration soll unser Projektbeispiel (1) als Ergebnis der Strukturplanung im ersten Teil erweitert werden (Tabelle 3):

Tabelle 3: **Vorgangsliste mit Zeitabständen als Ergebnis der Strukturanalyse**

Vorgang	*Ausführ-ungsdauer in Tagen*	*Vor-gänger*	*Anordnungsbeziehung*	*Zeitabstand in Tagen*
A Fundamente ausschachten	4	–		
B Anschlüsse herstellen	5	–		
C Streifenfundamente betonieren	1	A A	MINEA MAXEA	– 3 + 2
D Maschinenfundamente betonieren	2	A A B	MINAA MAXEA MINEE	+ 2 + 1 + 2
E Fußboden betonieren	2	C D	MINAA MINAA	+ 1 + 2
F Abbindedauer des Fußbodenbetons	16	E		
G Außenwände hochziehen	20	C C	MINAA MAXEA	+ 1 + 5

H Innenwände hochziehen	12	E	MINEA	+	16
		E	MAXEA	+	19
		G	MAXAA	+ 2	
I Großbehälter installieren	3	E	MINEA	+	16
		E	MAXEA	+ 17	
J Dachdecke einschalen	4	G	MINAA	+	20
		G	MAXEE	+	26
		H	MINAA	+	12
		I	MINAA	+ 3	

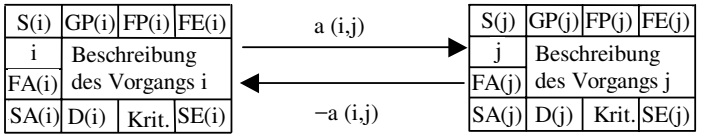
Abbildung 21: **Anordnungsbeziehungen im Vorgangsknotennetz (Netzplan zum Beispiel Tabelle 3)**



3.3.2 Ermittlung der Vorgangszeitpunkte in einem Vorgangsknotennetzplan mit EA-Beziehungen

In einem Vorgangsknotennetzplan können die Knoten die wichtigen Informationen aufnehmen, die den jeweiligen Vorgang betreffen. Die Pfeile hingegen werden nur mit den Potenzialen versehen (vgl. Abbildng 22):

Abbildung 22: **Knoten mit Ende-Anfang-Beziehung im Vorgangsknotennetzplan**



- S(i) bzw. S(j): Symbol für Kurzbezeichnung des Vorgangs i bzw. j (z.B. A, B, C, ...)

i: Nr. des vorangehenden Vorgangs

j: Nr. des folgenden Vorgangs (i < j)

- FA(i) bzw. FA(j): Frühestmöglicher Anfang des Vorgangs i bzw. j
- SA(i) bzw. SA(j): Spätestzulässiger Anfang des Vorgangs i bzw. j
- D(i) bzw. D(j): Ausführungsdauer des Vorgangs i bzw. j
- SE(i) bzw. SE(j): Spätestzulässiges Ende des Vorgangs i bzw. j
- FE(i) bzw. FE(j): Frühestmögliches Ende des Vorgangs i bzw. j
- a (i,j): Positives Potenzial (MINEA: minimaler zeitlicher Abstand zwischen Ende des Vorgangs i und Anfang des Vorgangs j)
- −a (i,j): Negatives Potenzial (MAXEA: maximaler zeitlicher Abstand zwischen Ende des Vorgangs i und Anfang des Vorgangs j); es befindet sich jeweils an einem Pfeil in entgegengesetzter Richtung
- GP(i) bzw. GP(j): Gesamte Pufferzeit des Vorgangs i bzw. j
- FP(i) bzw. FP(j): Freie Pufferzeit des Vorgangs i bzw. j
- Krit.: Krit.=ja: Es handelt sich um einen kritischen Vorgang; sonst nein.

Die Zeitplanung für ein Projekt erfolgt in mehreren Schritten:

Schritt 1:

Für jeden Vorgang j des Projektes wird der **frühestmögliche Anfang** (frühestmöglicher Beginnzeitpunkt) FA(j) ermittelt. Der letzte Vorgang j = n im Vorgangsknotennetzplan ist der Scheinvorgang „Ende“ des Projektes. FA(n) entspricht der **minimalen Projektdauer**, die wiederum durch den **zeitlich längsten Weg** durch den Netzplan bestimmt wird. Bleiben zunächst die Beziehungen mit negativen Potenzialen unberücksichtigt, so ergeben sich die frühestmöglichen Anfangszeitpunkte im Wege der **Vorwärtsrechnung** wie folgt:

FA(0) = 0

$FA(j) = \max_i [FE(i) + a(i,j)]$ i ε {Vorgänger (j)}; j ε {Nachfolger(i)}

Als Projektbeginn FA(0) wird üblicherweise der Zeitpunkt 0 vorgegeben (jeder beliebige andere Wert ist möglich). Um die Vergleichbarkeit mit den Ergebnissen der Zeitplanung nach CPM (vgl. Abbildung 11 und Tabelle 2) zu erreichen, wird die Vorgehensweise an dem obigen Projektbeispiel: „Bau einer Fabrikationshalle“ (vgl. Vorgangsliste in 1) demonstriert: In sind die FA(j) jeweils an den vorgesehenen Stellen in den Knoten angegeben. Der Scheinvorgang „Ende“ des Projektes wird frühestmöglich nach 120 Tagen - FA(22) = 120 - erreicht (minimale Projektdauer). **Der längste Weg durch des Projekt** wurde also mit der Dauer von 120 Tagen ermittelt. Das **frühestmögliche Ende** eines jeden Vorgangs i lässt sich leicht ermitteln:

$FE(i) = FA(i) + D(i) \quad i = 0, 1, ..., n - 1$

Die entsprechenden Werte sind ebenfalls an den vorgesehenen Stellen in den Knoten (Abbildung 23) eingetragen. Sind im Netzplan Pfeile mit entgegengesetzter Richtung und negativen Potenzialen vorhanden, so ist zu überprüfen, ob diese die errechneten FA(j) und damit möglicherweise auch die ermittelte minimale Projektdauer beeinflussen. Dabei kann sich ein negatives Potenzial nur auf den Vorgang, in den der Pfeil mit entgegengesetzter Richtung einmündet, sowie auf die Nachfolger dieses Vorgangs auswirken; dem Vorgang vorausgehende Vorgänge bleiben unberührt.

Schritt 2:

Durch **Rückwärtsrechnung** kann für jeden Vorgang das **spätestzulässige Ende** SE(i) ermittelt werden. Geht man wieder davon aus, dass die minimale Projektdauer nicht überschritten werden soll, dann entspricht das **frühestmögliche Ende** des Scheinvorgangs „Ende“ zugleich dem **spätestzulässigen Ende**:

$SE(n) = FE(n)$

Der **spätestzulässige Anfang** eines jeden Vorgangs i lässt sich wie folgt berechnen:

$SA(i) = SE(i) - D(i) \quad i = 0, 1, ..., n - 1$

Das **spätestzulässige Ende** eines Vorgangs i wird durch den **zeitlich längsten Weg** vom Zielvorgang n (hier: „Ende“ des Projektes) bis zu dem Vorgang i bestimmt. Bleiben zunächst wieder die Beziehungen mit entgegengesetzter Richtung und negativen Potenzialen unberücksichtigt, dann gilt:

$SE(i) = \min_j [SA(j) - a(i,j)]$ i ε {Vorgänger (j)}; j ε {Nachfolger(i)}

In sind die Werte für SA(i) sowie die für SE(i) jeweils an den vorgesehenen Stellen in den Knoten angegeben.

Abbildung 23: **Zeitplanung des Projektbeispiels im Vorgangsknotennetzplan**

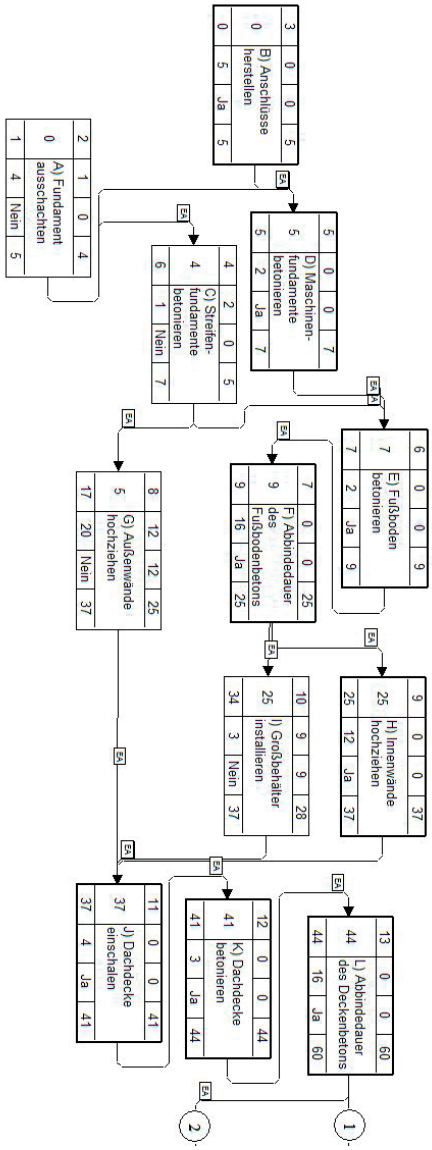
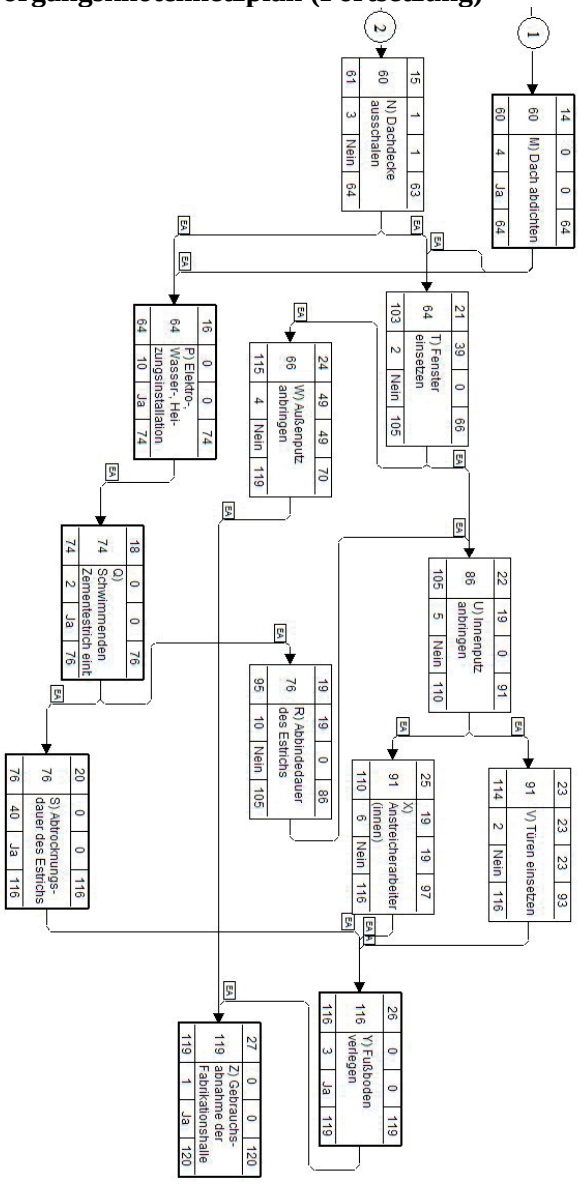


Abbildung 23: **Zeitplanung des Projektbeispiels im Vorgangsknotennetzplan (Fortsetzung)**



Sind im Netzplan Pfeile mit entgegengesetzter Richtung und negativen Potenzialen vorhanden, so ist ihr möglicher Einfluss zu berücksichtigen. In Umkehrung der Betrachtung bei der Ermittlung der FA(j) ist hier zu beachten, dass nur der spätestzulässige Anfang bzw. das spätestzulässige Ende eines Vorgangs beeinträchtigt werden kann, von dem der Pfeil in entgegengesetzter Richtung und mit negativem Potenzial ausgeht. Darüber hinaus kann ein

solcher Einfluss nur noch auf die Vorgänger dieses Vorgangs, nicht auf seine Nachfolger ausgehen.

3.3.3 Ermittlung und Interpretation der Pufferzeiten

Eine Erörterung der Pufferzeiten führt zu ähnlichen Betrachtungen wie sie schon im Zusammenhang mit der CPM-Zeitplanung angestellt wurden. Da für den Zielvorgang „Ende“ des Projektes die Gleichung FA(n) = SA(n) vorgegeben wurde, sind die **kritischen Vorgänge** im Netzplan wie folgt definiert:

$$FA(i) = SA(i) \text{ bzw. } FE(i) = SE(i) \qquad i = 1, 2, ..., n$$

Die kritischen Vorgänge sind in ihrer Ausführung streng an Termine gebunden; sie haben keine **Pufferzeiten**. Bei den **nichtkritischen Vorgängen** steht ein **zeitlicher Spielraum** (Puffer, Pufferzeit, Schlupf) zur Verfügung, d.h. bei diesen Vorgängen liegt der spätestzulässige Anfang später als der frühestmögliche. Welchen Umfang die Pufferzeit annimmt und welche Auswirkungen ihre Nutzung haben kann, wird wiederum an den Arten von Pufferzeiten im Vorgangsknotennetzplan gezeigt:

(1) Gesamte Pufferzeit eines Vorgangs GP(i)

$$GP(i) = SA(i) - FA(i) \quad i = 0, 1, ..., n$$

Die **gesamte Pufferzeit GP(i)** eines Vorgangs i gibt die Zeitspanne an, die für eine Verschiebung oder Ausdehnung des Vorgangs maximal zur Verfügung steht, ohne dass die zeitminimale Projektdauer beeinträchtigt wird.

(2) Freie Pufferzeit eines Vorgangs FP(i)

$$FP(i) = \left\{ \min_{j} \left[FA(j) - a(i,j) - FE(i) \right] \right\} ; \; i \in \{\text{Vorgänger (j)}\}; \; j \in \{\text{Nachfolger(i)}\}$$

Die **freie Pufferzeit** bedarf zu ihrer Bestimmung einer vergleichenden Rechnung unter Einbeziehung mehrerer Vorgänge und insbesondere unter Beachtung der Pfeile in entgegengesetzter Richtung mit den negativen Potenzialen (−a(l,i)). Soll also die freie Pufferzeit bestimmt werden, die zur Ausführung oder Verschiebung eines Vorgangs zur Verfügung steht und darf eine Nutzung dieser freien Pufferzeit den frühestmöglichen Anfang der Nachfolger dieses Vorgangs nicht beeinträchtigen, dann sind - wie bei CPM - Vergleiche mit dem frühestmöglichen Anfang aller Nachfolger sowie der Potenziale an ihren Verknüpfungen anzustellen. Freie Pufferzeiten können nur bei Vorgängen vorkommen, die vor der Vereinigung von Teilwegen und auf dem zeitlich kürzesten Weg durch den Netzplan liegen. Die freie Pufferzeit entspricht dem Unterschied der Gesamtpufferzeiten der zusammengeführten Wege.

(3) Unabhängiger Puffer UP(i)

$$UP(i) = \left\{ \min_{j} \left[FA(j) - a(i,j) \right] - \max_{h} \left[SE(h) + a(h,i) \right] - D(i) \right\} ;$$

$h \in \{\text{Vorgänger (i)}\}; \; j \in \{\text{Nachfolger(i)}\}$ für alle i

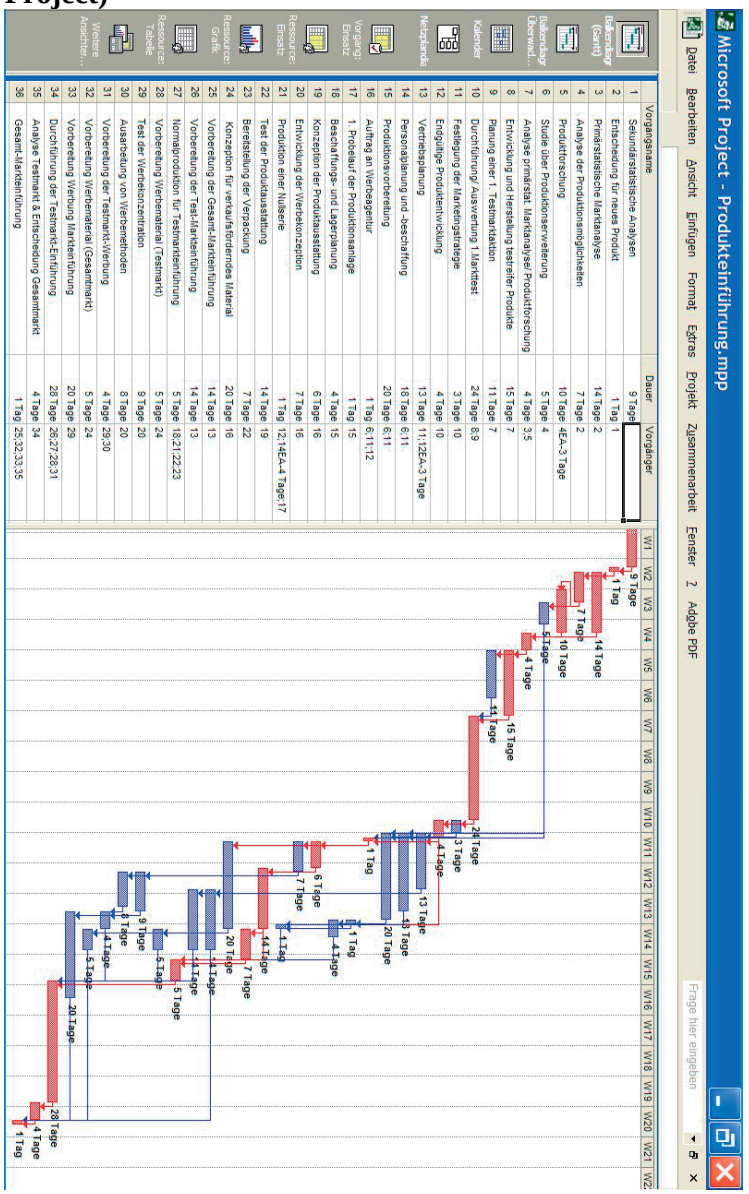
Die unabhängige Pufferzeit ist die Zeitdauer, um den ein Vorgang auch dann noch ausgedehnt oder verschoben werden kann, wenn alle Vorgänger eines Vorganges zum spätestzulässigen Zeitpunkt und alle Nachfolger des gleichen Vorganges frühestmöglich stattfinden. Durch seine Inanspruchnahme bleibt der übrige Zeitplan unberührt. Aus den gegebenen Definitionen der Vorgangspufferzeiten lässt sich folgende Relation ableiten: GP(i) ≥ FP(i) ≥ UP(i). In Abbildung 23 sind die „gesamte Pufferzeit“ und die „freie Pufferzeit“ eines jeden Vorgangs für das obige Projektbeispiel „Bau einer Fabrikationshalle“ (vgl. 1) an den vorgesehenen Stellen in den Knoten jeweils angegeben.

3.4 Beispiel: Produkteinführung mit Hilfe eines Netzplans

3.4.1 Aufgabenstellung

Eine Produkteinführung erfordert in der Regel eine Vielzahl miteinander verflochtener Aktivitäten (Vorgänge). Dabei können die Vorgänge teils nur nacheinander, teils aber auch parallel durchgeführt werden. Selbst routinierte Praktiker haben Schwierigkeiten, wenn sie für ein definiertes Projekt eine vollständige **Liste der Vorgänge** (einschließlich Verknüpfungen) aufstellen sollen. Für das Projekt der „Einführung eines neuen Produktes im Konsumgüterbereich“ sei die in aufgeführte **Vorgangsliste** aufgestellt und in *MS Project* implementiert worden. Neben den einzelnen Vorgängen sind dort die Vorgangsdauern, die EA-Vorgängerbeziehungen sowie die Potenziale der Vorgängerbeziehungen angegeben. Die Angabe „12EA-3 Tage“ bei Vorgang 13 bedeutet demnach, dass Vorgang 12 der Vorgänger von Vorgang 13 ist und dass die Vorgänge durch ein MINEA Potenzial von a(12,13)=(-3) verbunden sind. Es besteht also eine maximale Überlappung des Vorganges 12 durch den Vorgang 13 von 3 Tagen. Für das Projekt soll ein Vorgangsknotennetzplan (mit EA-Beziehungen), ein Struktur- und Zeitplan aufgestellt werden. Dabei sind die minimale Projektdauer, der frühestmögliche Anfang, das frühestmögliche Ende, der spätestzulässige Anfang, das spätestzulässige Ende eines jeden Vorgangs zu ermitteln; die Pufferzeiten - GP(i) und FP(i) - sind anzugeben und die kritischen Vorgänge zu kennzeichnen.

Abbildung 24: **Vorgangsliste Übungsbeispiel „Produkteinführung“ (in MS Project)**



Im vorliegenden Beispiel handelt es sich um eine Grobplanung mit Sammelvorgängen. Jeder Sammelvorgang beinhaltet dabei eine Reihe von Einzelvorgängen. So umfasst z.B. der Sammelvorgang Nr. 3: „Primärstatistische Marktanalyse“ beispielsweise folgende Einzelvorgänge: „Vorbereitung der Studie“, „Angebote von Marktforschungsinstituten

einholen“, „Angebote auswerten“, „Entscheidung über Durchführung der Analyse“, „Auftrag an Marktforschungsinstitut“, „Durchführung der Untersuchung im Feld“.

3.4.2 Lösungsvorschlag

In Abbildung 25 ist der Vorgangsknotennetzplan für das Projekt dargestellt:

Abbildung 25: **Vorgangsknotennetzplan für das Projekt: Produkteinführung**

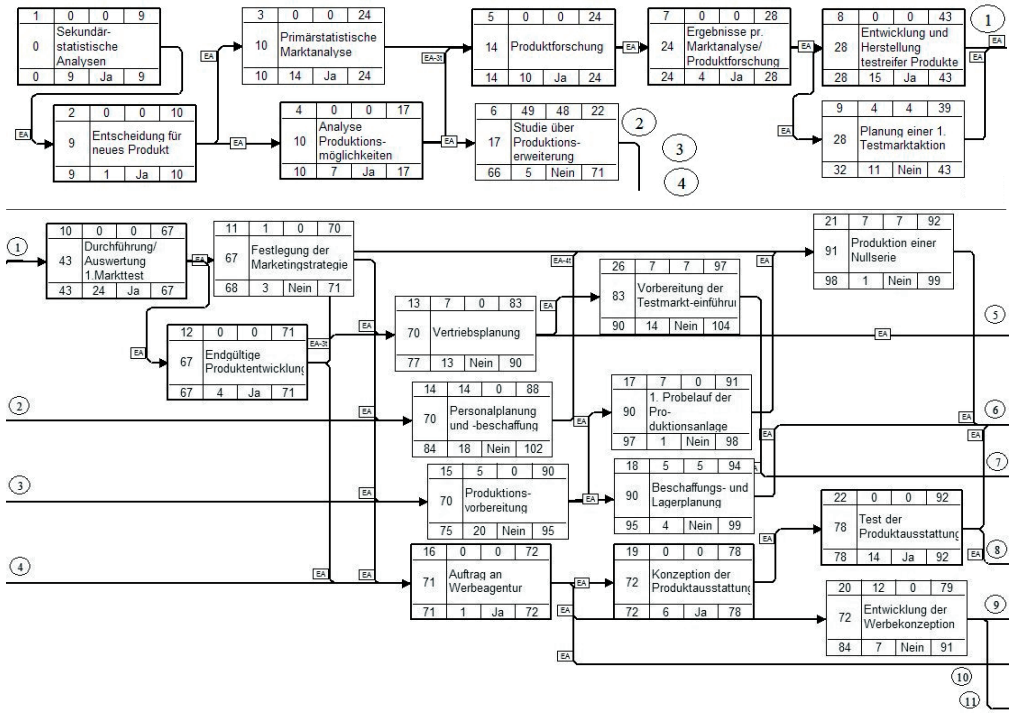
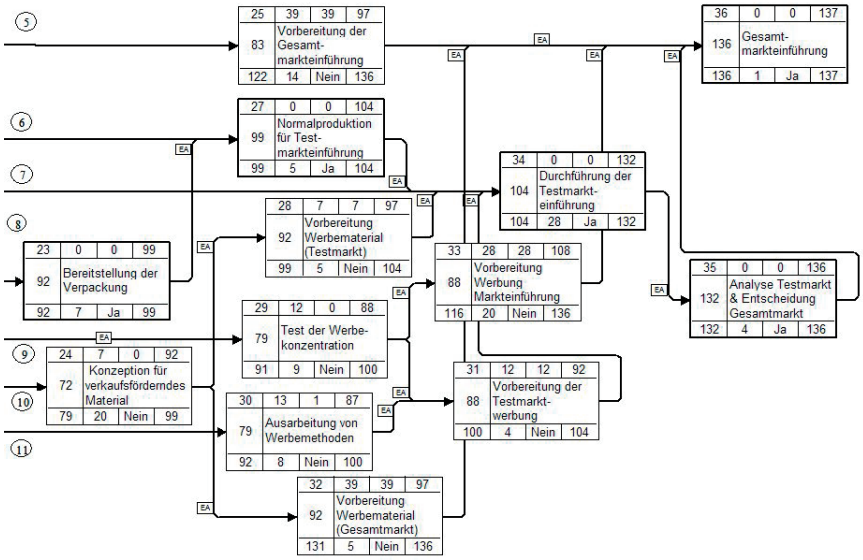


Abbildung 25: **Vorgangsknotennetzplan für das Projekt: Produkteinführung (Fortsetzung)**



4 Zeit-Kosten-Planung

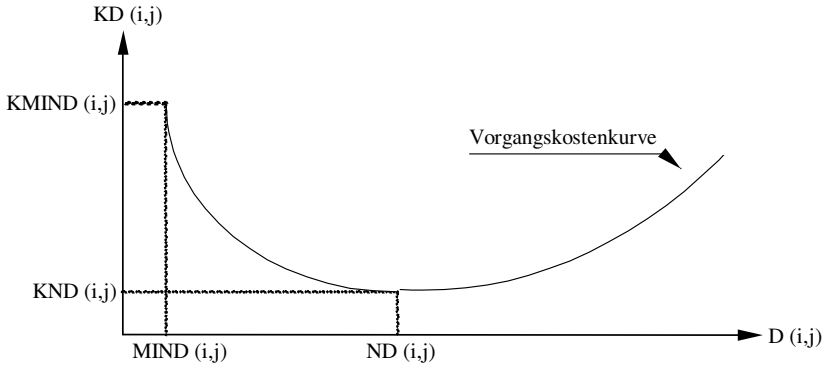
Für eine betriebswirtschaftlich aussagefähige Projektplanung wäre es notwendig, neben der Zeit auch die entstehenden Kosten und die verfügbaren Kapazitäten der einzusetzenden Produktionsmittel sowie die finanziellen Möglichkeiten und Auswirkungen in die Überlegungen einzubeziehen.
Darüber hinaus wäre das Zusammenspiel mehrerer Projekte zu berücksichtigen. Hier soll auf dieses Interdependenzproblem nicht im Einzelnen eingegangen werden. Zur Illustration dieser Problematik werden lediglich die **Abhängigkeiten von Zeit und Kosten** erörtert und im Übrigen wird auf die weiterführende Literatur verwiesen (vgl. z.B. *Corsten, H. u.a.,* 2008, S.186 ff.; *Litke, H.-D.,* 2007, S. 154 ff.; *Schwarze, J.*, 2006, S. 255 ff.; *Hillier, F. S., Lieberman, G. J.*, 2002, S. 502 ff.; *Zimmermann, W.*, 2002, S. 27 ff.).

4.1 Zeitabhängige Vorgangskosten

Da bei der Planung eines Projektes in aller Regel nicht von einer beliebigen, von der Länge des kritischen Weges abhängigen Projektdauer ausgegangen werden kann, sondern fest vorgegebene Termine einzuhalten sind, muss u.U. versucht werden, die „beanspruchte Vorgangsdauer“ einzelner Vorgänge zu reduzieren. Die **Kürzung der Vorgangsdauer** kann durch **zeitliche** (Überstunden, Zusatzschichten), **quantitative** (zusätzliche Arbeitskräfte, Betriebsmittel), **intensitätsmäßige** (Erhöhung der Prozessgeschwindigkeit) oder **qualitative** (andere Verfahren) **Anpassung** erfolgen. Diese Anpassung

wird **Einfluss** auf die **Höhe der Kosten** haben. Wie hängen die **Vorgangskosten** von der **Vorgangsdauer** ab?

Abbildung 26: **Vorgangskostenkurve**



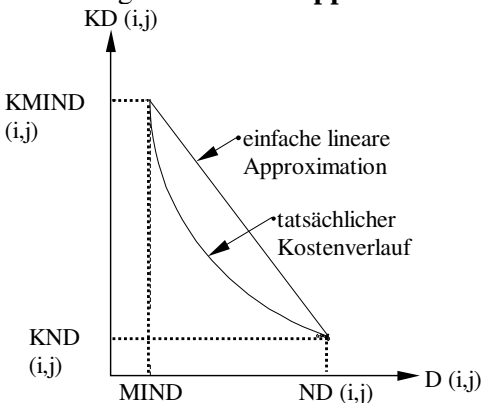
Die Symbole der Abbildung bedeuten:
D(i,j): Dauer des Vorgangs (i,j); KD(i,j): Kosten des Vorgangs (i,j) in Abhängigkeit von D(i,j); MIND(i,j): Minimaldauer des Vorgangs (i,j), für die sich auch die Bezeichnung „Zusammenbruchspunkt“ (crash-point) findet (*Schwarze, J.*, 2006, S. 267).
Die Minimaldauer kann auch bei noch so großem Faktoreinsatz nicht unterschritten werden; KMIND(i,j): Vorgangskosten bei MIND(i,j); ND(i,j): Normaldauer des Vorgangs (i,j); KND(i,j): Vorgangskosten bei ND(i,j) - sie sind minimal.

Normaldauer eines Vorgangs

Zentraler Orientierungspunkt für die Zeit-Kosten-Planung ist die sog. ND(i,j).
Sie umfasst die Zeit, bei der üblicherweise die Kosten des Vorgangs am geringsten sind. Abweichungen von der Normaldauer, wie sie bei Anpassungsmaßnahmen eintreten, führen zu einem Anwachsen der Vorgangskosten. Variiert die Vorgangsdauer nicht (auch nicht annähernd) stetig, so kann es nur einzelne Kostenpunkte für die Beziehung zwischen Vorgangsdauer und Vorgangskosten geben (z.B. Übergang vom Landweg zum Luftweg beim Transport). Tendenziell wird die Kurve der Vorgangskosten - bei wenigstens näherungsweise stetig variierender Vorgangsdauer – einen aus vorangehender Abbildung 26 ersichtlichen Verlauf haben.
Der rechts von ND(i,j) aufsteigende Ast der Vorgangskostenkurve ist ineffizient und bleibt außer Betracht. Eine exakte Beschreibung der Vorgangskostenkurve links von ND(i,j) wird in praktischen Problemen auf erhebliche Schwierigkeiten

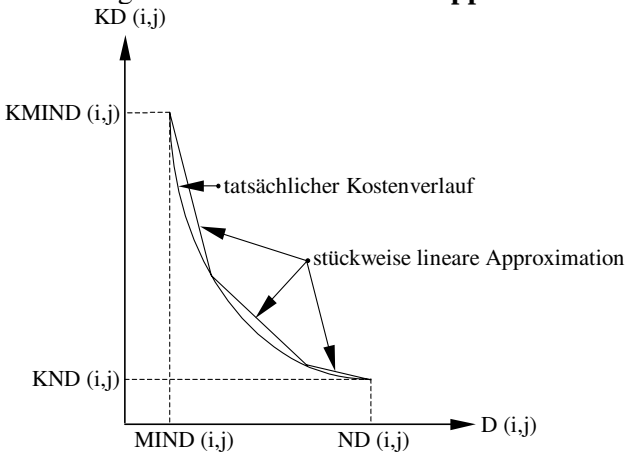
stoßen. Für KMIND(i,j) bzw. KND(i,j) sind oft nur Schätzwerte bekannt. Man hilft sich hier, indem man die Kostenkurve linear approximiert. Die Vorgangskosten bei Minimaldauer MIND(i,j) und bei Normaldauer ND(i,j) werden durch eine Gerade verbunden:

Abbildung 27: **Lineare Approximation der Vorgangskostenkurve**



Es ist auch eine stückweise lineare Approximation möglich:

Abbildung 28: **Stückweise lineare Approximation der Vorgangskostenkurve**



Die linearen Kostenfunktionen lauten (für ND(i,j) ≠ MIND(i,j)):

$$KD(i,j) = KND(i,j) + \frac{KMIND(i,j) - KND(i,j)}{ND(i,j) - MIND(i,j)} \cdot ND(i,j) \quad - \frac{KMIND(i,j) - KND(i,j)}{ND(i,j) - MIND(i,j)} \cdot D(i,j)$$

$$= a(i,j) - b(i,j) \cdot D(i,j)$$

$MIND(i,j) \leq D(i,j) \leq ND(i,j)$; $b(i,j) > 0$

Ist ND(i,j) = MIND(i,j), so ist KD(i,j) = KND(i,j). Besonders wichtig ist dabei die Steigungskonstante b(i,j). Sie gibt an, um wie viel sich die Kosten des

Vorgangs erhöhen, wenn man die Vorgangsdauer um eine Zeiteinheit verkürzt (**Beschleunigungskosten**).

Nach Ableitung der Vorgangskostenfunktion für einen einzelnen Vorgang können nun auch die gesamten **Vorgangskosten des Projektes** KG definiert werden. Sie ergeben sich durch Summation aller KD(i,j) über alle Vorgänge (i,j) des Netzplans. Die lineare Approximation hat den Vorteil, dass sich auf diese Weise die Kostenfunktion bei Berechnung von Optimalpunkten relativ leicht handhaben lässt.

Zur Demonstration greifen wir auf Teilprojekt I des Beispiels (vgl. und **Abbildung** 8) zurück. In der Tabelle 4 sind die normale und die minimale Dauer eines jeden Vorgangs und die dazugehörigen Kostenwerte angegeben. In der letzten Spalte ist die jeweilige Vorgangskostenfunktion eingetragen.

Tabelle 4: **Vorgangskosten und Vorgangskostenfunktion des Beispiels (Teilprojekt I)**

Vorgang	(i,j)	N D (i,j) (1)	MN D (i,j) (2)	KN D (i,j) (3)	KMIN D (i,j) (4)	Vorgangskostenfunktion KD(i,j) = a(i,j) − b(i,j) · D(i,j) $(5)=(3)+\frac{(4)-(3)}{(1)-(2)}\cdot(1)-\frac{(4)-(3)}{(1)-(2)}\cdot D(i,j)$
A	(1,2)	4	1	2	4	KD (1,2) = 4,67 − 0,67 D(1,2)
B	(1,3)	5	2	3	5	KD (1,3) = 6,33 − 0,67 D(1,3)
C	(2,4)	1	1	1	1	KD (2,4) = 1 − 0 D(2,4)
D	(3,5)	2	1	1	2	KD (3,5) = 3 − 1 D(3,5)
E	(5,6)	2	1	2	3	KD (5,6) = 4 − 1 D(5,6)
F	(6,7)	16	12	0	2	KD (6,7) = 8 − 0,5 D(6,7)
G	(4,8)	20	16	10	12	KD (4,8) = 20 − 0,5 D(4,8)
H	(7,9)	12	6	12	15	KD (7,9) = 18 − 0,5 D(7,9)
I	(7,8)	3	2	1	2	KD (7,8) = 4 − 1 D(7,8)
J	(9,10)	4	2	4	5	KD (9,10) = 6 − 0,5 D(9,10)
K	(10,11)	3	2	3	4	KD (10,11) = 6 − 1 D(10,11)
L	(11,12)	16	12	0	2	KD (11,12) = 8 − 0,5 D(11,12)
M	(12,13)	4	2	3	5	KD (12,13) = 7 − 1 D(12,13)
N	(12,14)	3	1	1	3	KD (12,14) = 4 − 1 D(12,14)
				∑ 43		

Auf die besonderen Schwierigkeiten bei der Ermittlung der Abhängigkeit der Vorgangskosten von der Vorgangsdauer, die sich daraus ergeben, dass man in

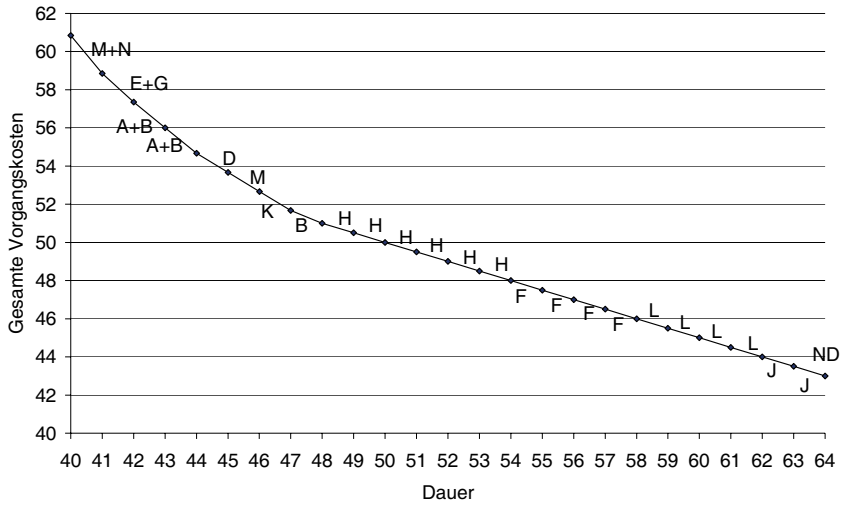
der Praxis die dazu notwendigen Informationen nicht immer beschaffen kann, sei hingewiesen. Es dürfte nur selten vorkommen, dass die Kostenrechnung der Betriebe so tief gegliedert ist wie der Projektablauf im Netzplan, so dass man sich bei der Zeit-Kosten-Ermittlung in der Mehrzahl der Fälle mit Schätzungen und Expertenbefragungen begnügen muss.

4.2 Bestimmung der vorgangskostenminimalen Projektrealisierung bei gegebener Projektdauer

In der Regel wird man anstreben, eine **feste vorgegebene Projektdauer** mit **minimalen Kosten** zu realisieren. Die Vorgangsdauern der einzelnen Vorgänge sind so einzurichten, dass die gesamten Vorgangskosten KG ein Minimum werden. Es müssen also die **Vorgangsdauern so verkürzt** werden, dass der dadurch hervorgerufene **Kostenanstieg am kleinsten** ist. Bei unserem Beispiel (Tabelle 4) ist der Kostenanstieg durch eine Verringerung der Vorgangsdauer z.B. bei Vorgang (6,7) geringer als bei Vorgang (5,6). Eine Verringerung der Projektdauer wird man also so vornehmen, dass man zunächst den **kritischen Vorgang** mit dem **kleinsten Kostenanstieg je Zeiteinheit** verkürzt.
Im Teilprojekt I des Beispiels erhält man eine Projektdauer T von 64 Tagen bei minimalen Kosten KG in Höhe von 43 GE (Geldeinheiten), wenn jeder Vorgang in der normalen Dauer ND(i,j) ausgeführt wird.
Soll die Projektdauer T verkürzt werden, so verringert man dazu zunächst die kritischen Vorgänge (6,7), (7,9), (9,10) oder (11,12). Diese kritischen Vorgänge haben die gleiche **Kostensteigerungskonstante** b(i,j) = 0,5; d.h. 0,5 GE/Tag. Da durch die Verkürzung der Vorgänge (9,10) und (11,12) kein anderer Vorgang kritisch werden kann (vgl. Netzplan Abbildung 11), ist es zweckmäßig, diese zunächst zu verkürzen: Vorgang (9,10) auf 2 Tage und Vorgang (11,12) auf 12 Tage. Die Kosten betragen dann 43 + 1 = 44 bzw. 44 + 2 = 46 GE. Als Nächstes sind die Vorgänge (6,7) oder (7,9) zu verkürzen. Beginnt man mit Vorgang (6,7), so ergibt sich aus dem Netzplan (Abbildung 11 in Verbindung mit Tabelle 4), dass eine Verkürzung um 4 Tage möglich ist. Die Projektdauer beträgt jetzt 54 Tage mit Kosten von 48 GE. Vorgang (7,9) kann um 6 Tage auf 6 Tage verkürzt werden, ohne dass ein anderer Vorgang kritisch wird. Die Kostensteigerung dieser Verkürzung beträgt 3 GE. Als Nächstes kann die Dauer des Vorgangs (1,3) um einen Tag (anstatt 3 Tage gem. Tabelle 4) mit einer Kostenzunahme von 0,67 GE verkürzt werden. Durch eine Reduzierung der Vorgangsdauer D (1,3) auf 4 Tage wird nämlich der bisher nichtkritische Vorgang (1,2) kritisch (vgl. Netzplan Abbildung 11). Um eine weitere Verkürzung der Dauer von Vorgang (1,3) zu erreichen, müsste die Dauer des Vorgangs (1,2) gleichzeitig mitgekürzt werden; die Beschleunigungskosten würden sich entsprechend addieren. Dann lassen sich die kritischen Vorgänge (3,5), (5,6), (10,11) bzw. (12,13) verkürzen, und zwar mit jeweils einer Kostensteigerung von einer GE/Tag. Während die Vorgangsdauer D (10,11)

ohne weiteres um einen Tag verkürzt werden kann, lässt sich D (12,13) nicht um 2, sondern nur um einen Tag verkürzen, da bereits bei D (12,13) = 3 der Vorgang (12,14) kritisch wird (vgl. Netzplan Abbildung 11). Ebenso kann nur D (3,5) **oder** D (5,6) um einen Tag verkürzt werden, da bei einer Verkürzung um einen Tag der Teilweg mit den Vorgängen (2,4), (4,8) und (8,9) kritisch wird. Wir wollen zunächst D (3,5) um einen Tag reduzieren. Weitere Verkürzungen sind nur noch möglich, indem **zwei** Vorgänge in ihren Ausführungszeiten zugleich gekürzt werden. Es sind diejenigen Vorgangspaare zunächst auszuwählen, die zusammen die kleinste Kostensteigerung je Tag verursachen. Im Beispiel sind dies die Vorgänge (1,2) **und** (1,3) mit einer Kostensteigerung von (0,67 GE + 0,67 GE)/Tag. Sie können um zwei Tage verkürzt werden, da Vorgang (1,3) bereits um 1 Tag verkürzt wurde. Dann kann D (5,6) zusammen mit D (4,8) um einen Tag reduziert werden. Als Letztes lassen sich noch die Vorgangsdauern D (12,13) und D(12,14) um einen Tag mit einer Kostenzunahme von (1 GE + 1 GE)/Tag verkürzen (vgl. Abbildung 29).
So wird **schrittweise** die **Projektdauer minimiert**. Im Beispiel lässt sich die Projektdauer für Teilprojekt I auf T = 40 Tage verkürzen mit Gesamtkosten KG = 60,9 GE.

Abbildung 29: **Abhängigkeit der Vorgangskosten von der Projektdauer (Teilprojekt I)**



In Abbildung 29 können die minimalen Vorgangskosten des Teilprojekts I für alternativ vorgegebene Projektdauern abgelesen werden.

4.3 Bestimmung der kostenminimalen Projektdauer

Bisher wurden die Vorgangskosten eines Projektes, d.h. die den Vorgängen zurechenbaren Kosten behandelt. Bezieht man die „übrigen" Projektkosten (Einzel- und Gemeinkosten des **gesamten** Projekts und nicht einzelner

Vorgänge) in die Überlegungen ein, so lässt sich eine **kostenminimale Projektdauer** bestimmen, wenn sich unter diesen „übrigen" Projektkosten **zeitproportionale Kosten** befinden. Voraussetzung ist natürlich, dass die notwendigen Informationen über diese Kosten vorliegen. Nehmen wir in unserem Beispiel für Teilprojekt I an, dass diese „übrigen" Kosten KP, die nur dem Projekt zurechenbar sind, folgender Funktion:

KP = 40 + 1,1 T (T = Projektzeit in Tagen)

folgen, so setzen sich die Gesamtkosten K des Projekts aus den gesamten Vorgangskosten KG und den „übrigen" Kosten des Projektes KP zusammen:

K = KG + KP

Für die einzelnen Projektdauern T lassen sich die Gesamtkosten K leicht errechnen:

Tabelle 5: **Gesamtkosten des Teilprojekts I in Abhängigkeit von der Projektdauer**

Projektdauer T [Tage]	KG [GE] vgl. Abbildung 29	KP = 40 + 1,1 · T	K (3) = (1) + (2)
40	60,9	84,0	144,9
41	58,9	85,1	144,0
42	57,4	86,2	143,6
43	56,0	87,3	143,3
44	54,7	88,4	143,1 = K_{min} !
45	53,7	89,5	143,2
46	52,7	90,6	143,3
47	51,7	91,7	143,4
48	51,0	92,8	143,8
.	.	.	.
54	48,0	99,4	147,4
.	.	.	.
58	46,0	103,8	149,8
.	.	.	.
62	44,0	108,2	152,2
.	.	.	.
64	43,0	110,4	153,4

Aus Tabelle 5 ergibt sich, dass - unter den genannten Annahmen - die kostenminimale Projektdauer des Teilprojekts I bei T = 44 Tagen mit K = 143,1 GE liegt. Die kostenminimale Projektdauer liegt also bei der Zeiteinheit, bei der die Beschleunigungskosten (marginale Kostenerhöhung durch Vorgangsverkürzung) der marginalen Kostensenkung der zeitproportionalen Einzel- und Gemeinkosten entspricht. Für die einzelnen Vorgänge ergeben sich

folgende Vorgangszeiten für die **gesamtkostenminimale Projektdauer** des Teilprojekts I (vgl. Tabelle 6):

Tabelle 6: **Vorgangszeiten bei kostenminimaler Projektdurchführung**

Vorgang	Gesamtkostenminimale Vorgangszeiten der Vorgänge (i,j)	
(1,2)	4 Tage	kritisch
(1,3)	4 Tage	kritisch
(2,4)	1 Tag	kritisch
(3,5)	1 Tag	kritisch
(5,6)	2 Tage	kritisch
(6,7)	12 Tage	kritisch
(4,8)	20 Tage	kritisch
(7,9)	6 Tage	kritisch
(7,8)	3 Tage	nicht kritisch
(9,10)	2 Tage	kritisch
(10,11)	2 Tage	kritisch
(11,12)	12 Tage	kritisch
(12,13)	3 Tage	kritisch
(12,14)	3 Tage	kritisch

Bei der Bestimmung der kostenminimalen Projektdurchführungsdauer nach der beschriebenen Methode ist der Netzplan ständig den neuen Gegebenheiten anzupassen (Iterationsverfahren). Wegen weiterer Optimierungsalgorithmen wird auf die weiterführende Literatur verwiesen (z.B. *Schwarze, J.*, 2006, S. 266 ff.).

5 Kapazitätsplanung

Die Kapazitätsplanung soll die Voraussetzungen für einen reibungslosen Projektablauf liefern. Das „ökonomische Prinzip“ verlangt dabei, dass die verfügbaren Ressourcen (Einsatzmittel) möglichst hoch und gleichmäßig ausgelastet werden, um Leerkosten zu vermeiden. Kapazitätsüberschreitungen sind jedoch nicht zulässig (Restriktionen). Sind bereits bei Projektplanung Kapazitätsüberschreitungen erkennbar, so muss durch entsprechende Maßnahmen auf einen Kapazitätsausgleich hingewirkt werden. Bei der Kapazitätsplanung geht man in zwei Schritten vor:
Der Kapazitätsbedarf wird für jeden Vorgang dargestellt und nachfolgend unter Berücksichtigung der Zeitplanung für die verschiedenen Projektstadien

berechnet. Dazu ist es notwendig, dass man für jeden Vorgang möglichst genau angeben kann, welche Ressourcen (qualitativ differenziert) benötigt werden und in welchen Mengen. Aus dem Zeitplan für das Projekt lässt sich dann in einfacher Weise ein Kapazitätsbedarfsplan (Einsatzplan für Arbeitskräfte, Betriebsmittel, Stoffe) ableiten. Dieser Kapazitätsbedarfsplan (Einsatzplan) gibt an, **welche Produktionsmittel zu welchen Zeitpunkten in welchen Mengen bereitgestellt werden müssen** (*Schwarze, J.*, 2006, S. 273 ff.; *Corsten, H., Corsten, H., Gössinger, R.,* 2008, S. 170 ff.; *Litke, H.-D.,* 2007, S. 160 ff.). Gegebenenfalls sind diese Angaben um die Bereitstellungsorte zu ergänzen. In verfahrensmäßiger Hinsicht bestehen kaum Probleme, da der Zeitplan bereits aufgestellt ist und dieser nur Erweiterungen erfährt, nämlich die zeitabhängige Angabe der einzusetzenden Produktionsmittel. Dabei ist in vielen Fällen noch eine (kapazitätsorientierte) **Zerlegung von Vorgängen** erforderlich, um den Bedarf an Ressourcen gleichmäßiger zu gestalten. So tritt der Bedarf an Arbeitskräften nicht immer zu Beginn eines Vorgangs auf; auch muss er nicht für die gesamte Ausführungsdauer eines Vorgangs gelten. Ein weiteres Problem in diesem Zusammenhang kann die Ermittlung der gegebenenfalls bereitzustellenden **Kapazitätsreserven** sein.

Soll-Ist-Vergleich von ermitteltem Kapazitätsbedarf und tatsächlich verfügbaren Ressourcen. Bei Abweichungen wird ein Kapazitätsausgleich angestrebt (Kapazitätsüberschreitung unterbinden und Beschäftigungsschwankungen durch Beschäftigungsplanung unter Berücksichtigung der Kapazitätsgrenzen vermeiden). Dazu stehen grundsätzlich folgende Möglichkeiten zur Verfügung (*Zimmermann, W.*, 2002, S. 31):

- einfache Verschiebung einzelner Vorgänge,
- Unterbrechung einzelner Vorgänge, soweit dies technologisch möglich ist,
- zeitliche Ausdehnung oder Komprimierung eines Vorgangs durch Änderung der Einsatzmenge oder der Qualität der Produktionsfaktoren, soweit dies technologisch möglich ist.
- Soweit solche kapazitätsbedingten Anpassungen nicht im Rahmen der ermittelten Pufferzeiten bleiben, können sie zu einer Verlängerung der Projektdauer führen. Von Vorteil ist jedoch, dass dies bereits im Planungsstadium erkannt wird.

Exakte Lösungsverfahren haben für die Praxis nur beschränkte Bedeutung, da der Aufwand bei umfangreichen Projekten zu groß wird (Ansätze der ganzzahligen Optimierung). In der Praxis erfolgt der Kapazitätsausgleich (Glättung des Kapazitätsbedarfs) mit Hilfe **heuristischer Verfahren** (Zuhilfenahme von systematischen Probiermethoden). Es wird schrittweise geprüft, ob durch zulässige Verschiebung/Unterbrechung/Ausdehnung oder Komprimierung von Vorgängen eine gleichmäßige Kapazitätsauslastung erreicht werden kann (vgl. *Schwarze, J.*, 2006, S. 273 ff.).

Multiprojektplanung
Die netzplantechnische Koordinierung mehrerer Projekte, die um vorgegebene Kapazitäten konkurrieren, nennt man **Multiprojektplanung**. Die Multiprojektplanung ist zwar theoretisch durchdacht und mathematisch analysiert worden, aber die praktische Anwendung ist bisher nur für wenige Fälle bekannt geworden (vgl. *Zimmermann, W*., 2002, S. 35 f.; *Litke, H.-D.,* 2007, S. 79 f.; *Corsten, H. u.a*., 2008, S. 64 ff. und S. 184 ff.).
Grundsätzlich ist es jedoch möglich, mehrere Projekte manuell gleichzeitig zu planen. Unter Berücksichtigung von Prioritätsregeln lassen sich die Netzpläne, die zunächst unabhängig voneinander aufgestellt werden, mit Hilfe heuristischer Methoden koordinieren.

6 Verarbeitung von Netzplänen mit dem Computer

Die EDV ist ein vorzügliches Hilfsmittel für eine schnelle Auswertung großer Datenmengen und für eine häufige Wiederholung gleicher Rechenoperationen. Aus diesem Grund bietet sie für ihren Einsatz in der NPT erhebliche Vorteile. Bei größeren Projekten kommt man nicht umhin, für die **Projektplanung, -steuerung und -überwachung** einen Computer einzusetzen. Auch bei kleineren Projekten wird Computerunterstützung erwünscht sein, wenn außer Struktur- und Zeitplanung noch andere Berechnungen - etwa Kosten- und Kapazitätsplanung - erforderlich sind. Zum Computereinsatz im Rahmen der NPT vgl.*Corsten, H., Corsten, H., Gössinger, R.,* 2008, S. 245 ff.; *Heinrich, G., Grass, J., 2006,* S. 361 ff.; *Lutz, M.,* 1998, S. 213; *Schwarze, J*., 2006, S. 319 ff.; *Litke, H.-D.,* 2007, S. 247 ff. und die dort aufgeführte Spezialliteratur.

Stehen zur Netzplanberechnung große Computer zur Verfügung, so kann auf Standardprogramme wie z.B. CIPREC (IBM), SINET (Siemens), PPS/GRANEDA (CDC), 2900 PERT (ICL) oder OPTIMA 1100 (Sperry Rand/Univac) zurückgegriffen werden. Aber auch für den **Personal Computer** (PC) stehen Projektmanagementprogramme (auch Projektsteuerungs- und -planungssysteme genannt) zur Verfügung. Zur Durchführung der Struktur-, Zeit-, Kosten- und Kapazitätsanalyse bzw. -planung enthalten die Projektmanagementprogramme gewöhnlich folgende Funktionen :

- Kalenderfunktion zur Definition von Feier- und Urlaubstagen, Anzahl der Arbeitsstunden pro Tag, Projektbeginn und -dauer;
- Editier- bzw. Pflegefunktion zur Strukturierung der Aktivitäten, Fixierung der Startzeitpunkte und Ausführungsdauer, zur Zuordnung von Kosten und Ressourcen auf Aktivitäten;
- Berichts- und Grafikfunktionen zur Beschreibung und Veranschaulichung der Strukturen, Abhängigkeiten und Ergebnisse;

■ Simulationsfunktion zur Berechnung von Ergebnissen als Folge der Editier- / Pflegefunktion spezifizierter Neueingaben bzw. Änderungen einschließlich eventueller Sensitivitätsanalysen.
■

In der Literatur werden beispielhaft folgende PC-Projektmanagementprogramme angeführt (vgl. z.B. *Lutz, M.*, 1998, S. 213; Litke, H.-D., 2007, S. 247 ff.; *Corsten, H. u.a.*, 2008, S. 249 ff.): Super Project Plus, TNETZ, Harvard Total Project Manager II, MS-Project von Microsoft, PERTMASTER, PMW (Project Manager Workbench), Quicknet, TIME LINE von Symantec. In der Spezialliteratur befinden sich **Kriterien für die Auswahl einer Netzplan-Software** (*Schwarze, J.*, 2006, S. 319 ff.). Auf jeden Fall ist es wichtig, bei der Netzplan-Software auf die Möglichkeiten der Projektsteuerung und -überwachung, d.h. auf die Möglichkeit der Berücksichtigung von Änderungen zu achten. Bei einer integrierten Netzplanung (Zeit-Kosten-Kapazitätsplanung) sind sehr viele Daten zu verarbeiten. Eine manuelle Berechnung (ohne Computer-Unterstützung) ist in solchen Fällen nur für relativ kleine Netzpläne wirtschaftlich durchführbar.

7 Beurteilung der Anwendungsmöglichkeiten der NPT als Instrument des Projektmanagements

Es bestehen kaum noch Zweifel an der hervorragenden Eignung der NPT zur Lösung von **Planungsproblemen bei Projekten**. Mit keiner anderen Methode ist es möglich, ein Projekt mit nahezu beliebigem Detaillierungsgrad grafisch darzustellen und seinen Ablauf zu planen und zu kontrollieren. Als **Vorteile der NPT** lassen sich herausstellen (vgl. auch *Zimmermann, W.*, 2002, S. 37 f.; *Schwarze, J.*, 2006, S. 133 ff.):

■ Die Aufstellung eines Netzplans erzwingt ein frühzeitiges detailliertes Vorausdenken des Ablaufs eines Projektes. Dies ist nicht zuletzt eine Hilfestellung für die notwendige **Koordination** des Zusammenspiels verschiedener Abteilungen bzw. Firmen bei der Projektdurchführung.
■ Die grafische Darstellung als Netz gibt allen Beteiligten eine gute Übersicht über den Projektablauf und die vielfältigen Abhängigkeiten der Vorgänge. Die **Transparenz** ist eine notwendige Voraussetzung für eine kritische Beurteilung und Diskussion der Zweckmäßigkeit eines Projektplans.
■ Die NPT liefert u.a. einen übersichtlichen und aussagefähigen **Terminplan** mit Angabe der frühestmöglichen und spätestzulässigen Zeitpunkte. Dies ist eine entscheidende Basis für die wirtschaftliche Steuerung des Projektablaufs und eine ausgewogene Kapazitätsauslastung.
■ Die Kenntnis des **kritischen Weges** lenkt die Aufmerksamkeit bei der Projektsteuerung und -kontrolle auf die Engpässe. Die Gewichtung der Vorgänge nach ihren Pufferzeiten ermöglicht eine gezielte Konzentration der

Steuerungsaktivitäten. Wird eine Verkürzung der Projektdauer verlangt, so zeigt der kritische Weg die Vorgänge, die durch den gezielten Einsatz zusätzlicher Mittel beschleunigt werden müssen.

- Maßnahmen zur Engpassbeseitigung bzw. zur Verkürzung der Projektdauer können bereits im Planungsstadium überlegt und untersucht werden. **Soll-Ist-Abweichungen**, also Abweichungen vom Netzplan (Störungen) und deren Auswirkungen werden bei der Projektüberwachung durch die NPT frühzeitig erkannt; je früher Soll-Ist-Abweichungen zur Kenntnis genommen werden, um so größer (und damit wirtschaftlicher) sind generell die Möglichkeiten der Anpassung.

- Die für nichtkritische Vorgänge ermittelten **Pufferzeiten** decken die Zeitreserven auf. Reserven sind die wesentlichen Elemente der Elastizität. Informationen über vorhandene Reserven erhöhen die Flexibilität der Planung und Steuerung.
- Die Möglichkeit der Einbeziehung von Kosten- und Kapazitätsgesichtspunkten macht die NPT zu einem umfassenden **Planungs-, Steuerungs- und Überwachungsinstrument** für Projekte.
- Die Grundlagen und Verfahren der Struktur- und Zeitplanungen mit Hilfe der NPT sind einfach.

Als **Nachteile oder Mängel der NPT** - die z.T. auch andere Planungstechniken aufweisen - sind zu nennen:

- Die Minimierung der Projektdauer sowie die Zeit-Kosten-Kapazitätsplanung beziehen sich auf einen gegebenen Netzplan. Der Projektablauf ist aber - wie oben erörtert - in vielen Fällen mehrdeutig.
- Die detaillierten, übersichtlichen und aussagefähigen Netzpläne können bei weniger Routinierten leicht zu dem Missverständnis führen, dass sie vergessen, dass die Planung immer die **Zukunft** zum Gegenstand hat und die Unsicherheit der Zukunft ein Wesensmerkmal der Planung ist. Soll-Ist-Abweichungen können auch mit NPT nicht ausgeschlossen werden.
- Der Planungsaufwand ist gegenüber den herkömmlichen Verfahren - z.B. mit Balkendiagrammen (GANTT-Diagrammen) - größer.

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A COMPLEXITY SCIENCE-BASED MANAGEMENT FRAMEWORK FOR VIRTUAL ORGANISATIONS

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Abstract

The virtual organisation challenges traditional management assumptions because a new means of coordinating globally dispersed employees is needed. To understand the collective activities of a workforce separated by space and time, this paper describes a complexity science-based management framework for virtual organisations. Specific focus is on a South African virtual organisation as a complex adaptive system. A single, embedded case study strategy was followed, and multiple data sources used to generate theory. In this paper, results are reported that clarify the management of an organisation where technology replaces conventional face-to-face contexts for socialisation and assimilation. The paper shows how managers create a virtual context for sharing meaning and interaction through synergy, empowerment, participation and an accountable, committed workforce.

JEL classification: D21, J24, J53

Keywords: virtual organisation, management, complexity science

1. INTRODUCTION

Technological breakthroughs in connectivity have extended the reach of organisations and individuals. This paper focuses on the virtual organisation, which exists as a network of dispersed individuals and organisations linked by technology to rapidly respond to turbulent environments and exploit market opportunities. The nature of the virtual organisation exacerbates the need for revised management practices, because managers must coordinate multiple transactions and tasks, and a geographic and temporally dispersed workforce connected by virtual networks. However, the outcomes of environmental influences, interactions within and between organisations, and constant technological innovation are unpredictable.

To make sense of unpredictability and instability, this study adopted complexity science as meta-theory to understand the virtual organisation, and management thereof, as a dynamic, non-linear, complex adaptive system. While the literature is clear on the implications and challenges for management, research on how these are addressed in practice is limited. Additionally, research focusing on the management of South African virtual organisations is absent.

This paper provides a conceptual, complexity science-based management framework for virtual organisations. Results describing the management of a South African virtual organisation, namely SchoolNet South Africa (SNSA), as a complex adaptive system are reported. A brief background to the study is provided, followed by a discussion of the research design, a summary of key results, and conclusions of the study.

2. COMPLEXITY SCIENCE AS META-THEORY

2.1 COMPLEXITY SCIENCE AND CONCEPTUALISATION

We followed a complexity science meta-theoretical framework. Complexity science "embodies a non-linear systems-oriented perspective that attempts to conceptualise and understand organisation systems at multiple levels in full recognition of the dynamic linkages and influences that operate within and between aspects of those systems levels through time and space" (Cooksey; 2001, 78).

The relevant aspect of complexity science for this study is the complex adaptive system. Viewing an organisation as a complex adaptive system has many implications. The non-linearity of interdependent components means that the organisation cannot be studied in terms of its constituent parts alone, or of what each unit does in isolation (Anderson; 1999, 217). Complex adaptive system behaviour is induced not by a single entity but rather by the simultaneous and parallel actions of agents by the system itself (Dooley; 2002, 220). Behaviour of the system is therefore emergent, where emergence refers to the arising of new, unexpected structures, patterns, properties, or processes in a self-organising system.

The principles of self-organisation generate a new approach to management because it emphasises adapting to rapid and constant change (Lichtenstein; 2000, 527). Key managerial issues therefore shift from maintaining control to supporting the emergence of new order. This is because in complex adaptive systems organising is a mutually interdependent process between agents (actors).

For this reason we incorporated the postmodern research approach, and structural and functional perspectives into the study. The postmodern process approach emphasises "intricate patternings of relationships" (Chia; 1995, 587), which are micro-organising processes, or micro-logics, that enact organisations. Furthermore, they are "discrete behavioural process events" that bring about self-organisation and manifest an emergent reality, which can culminate in adaptations to organisation structure, culture and strategy (McKelvey; 1999:7).

Based on the above, the first stage in conceptual development involved the identification of organisation concepts or dimensions. In the second stage, we "unbundled" these concepts into sub-concepts (indicators). The conceptual

framework comprised the dimensions of organisation design, namely technology, structure, culture and strategy, each of which is mutually dependent. These concepts are "sets of forces in dynamic equilibrium among themselves" (Introna; 2001:146), which determine the forming of structure (Afuah & Tucci; 2003, 66; Rybakov; 2001, 89) and provide options for strategic and organisation adaptation (Lewin et al.; 1999, 541). This framework guided the re-conceptualisation and empirical exploration of the virtual organisation as a complex adaptive system.

2.2 THE VIRTUAL ORGANISATION

Virtual organisations represent new organisation forms that facilitate technological demands (Black & Edwards; 2000, 567). The virtual organisation is an information-intensive organisation form (Child & McGrath; 2001, 1135) that centres round the knowledge of workers linked by technology across space and time. While a clear definition of the virtual organisation is forthcoming (Kasper-Fuehrer & Ashkanasy; 2003-4, 35), there is general consensus that it is not a hierarchical structure but rather a type of network organisation. As such, it facilitates open access to and exchange of information throughout the network and across organisation boundaries.

In virtual organisations, the collapse of space and time highlights the need for a management approach that enables flexibility, coordinated communication and adaptability to address emerging issues regarding a dispersed workforce. Therefore, virtual operations require organising efforts that move beyond efficiency and control to ones that emphasise the ability to identify or create opportunities and gather the needed players to exploit them. The virtual organisation is described as a complex adaptive system in section 4.1.

3. RESEARCH DESIGN AND METHODOLOGY

We followed an ideographic, exploratory and cross-sectional case study strategy to generate theory. We first derived *a priori* concepts from an extensive systematic review of the literature to formulate stringent selection criteria for the identification of the case for analysis. From this the virtual organisation was re-conceptualised (as a structure, a process and a complex adaptive system) to formulate working definitions for the study. We then classified types of virtual organisations on a traditional/real-virtual continuum to select a case as close as possible to the "ideal" virtual type, or online virtual organisation. Based on this, SchoolNet South Africa (SNSA) was selected as the case for analysis, positioned at the virtual end of the traditional/real-virtual continuum. We used multiple sources of qualitative data, namely documents, e-mail interviews, self-type paragraphs and the Delphi method.

4. KEY RESULTS AND DISCUSSION

Results were reported as a descriptive case study. Only those results relevant to managing the virtual organisation as a complex adaptive system are provided in this paper.

4.1 THE VIRTUAL ORGANISATION AS COMPLEX ADAPTIVE SYSTEM

Management implications are highlighted by first describing the virtual organisation as a complex adaptive system.
Empirical results of the study show that the virtual organisation is comprised of a large number of entities that display a high level of interactivity. It consists of a core organisation which coordinates and integrates core competencies and the resources of partners. Components of the system, namely the core and extended organisation (partners), comprise a **loosely coupled network** based on structural and cultural relationships. During configuration partners are identified and selected based on extant values and purposes that can be co-aligned. The selection process reduces the types of individuals (actors) or agents that can inhabit the system (the virtual organisation) to those that can co-exist or have synergy with the other types present (Allen; 2001, 13). Therefore, the co-alignment of goals and purposes is important.
Regular interaction and communication facilitate **co-existence** and **synergy**. All complex adaptive systems are composed of and maintained by a flow of energy/resources from the environment. Emergent structural configurations or patterns of relationships enable goal attainment, while simultaneously the achievement of goals reproduces the configuration. Therefore, a high level of **interactivity** is vital for coordination, which takes place in extensive communication networks. Through interaction **knowledge** is acquired, created or shared and information disseminated to ensure productivity and efficiency. Technology provides the context for interaction and relationship building, and amplifies interactions and influences across the traditional boundaries of time and space. The nature of interaction is **non-linear**, meaning that the virtual organisation cannot be reduced to its individual components.

This means that **environmental influences** impact the functioning of the virtual organisation. For example, an environmental event (such as the entry of a new competitor) can propel the organisation beyond the limits of its capacity. When limits are reached, tension and threshold threaten to throw the organisation out of equilibrium. A **beyond equilibrium** state arises when influences, either through threat or opportunity, force the organisation to adapt and re-align resources. The re-alignment of resources could mean re-configuration and re-integration because the organisation is able to exhibit dynamic behaviour in this state.

The **uncertainty** created by the non-linearity of interactions is **amplified** due to the technological nature of the system. Technology amplifies feedback events because it increases the range of influence by providing a context connecting every aspect of the virtual organisation. Therefore, the virtual organisation is constantly subject to **input** from the environment. To avoid being catapulted into a chaotic state the **culture** of the organisation (or dominant logic according to Lichtenstein, 2000), co-destiny, a common purpose, and shared commitment to common goals serve as the strange attractor around which the organisation revolves.
A dominant logic is reproduced (**organisation culture**) from the interactions of values, beliefs, structures and strategies, while at the same time that logic determines the configuration of values, structures and strategies. This dynamic process can be described in terms of organisational learning because the system self-generates meaning and knowledge to maintain itself and develop over time. This is influenced by **structure**, which determines the capacity for learning and accomplishing goals through the mobilisation of resources. When the level of resources needed to self-generate the organising configuration or dominant logic are exceeded, the system begins a process of transformation. **Transformation** occurs through synergy and organising processes to reduce equivocality (uncertainty) while the organisation attempts to find a better way to organise, either through strategic re-direction or purposive organisation building processes. This leads to the **emergence** of a new dynamic order underscored by information and communication.

However, evidence in this study indicated that a beyond equilibrium state is not a necessity for complex adaptive system behaviour. Rather, **adaptive capability** is increased by the non-enforcement of structures and hierarchies, free-flowing information, continuous communication, and the micro-logics of the organisation. Furthermore, the organisation can **purposefully respond** to environmental influences without the occurrence of major change. Here, flexible, permeable, dynamic "non-structures" are emphasised. This creates the conditions for **self-organisation** due to the freedom from constraints offered by decreased structural control, less reliance on traditional hierarchies (hierarchies exist in communication structures), empowerment, trust and an all-embracing cultural core that extends to all actors/agents.

Additionally, empirical evidence shows that **self-organisation** does not create structures in the traditional sense (vertical or horizontal). Rather, it leads to the **emergence of communication networks** that increase interactions and may or may not be hierarchical. Furthermore, the micro-logics of organising mean that the virtual organisation is in a constant state of flux, this evident in organisation behaviour. **Emergence** is evident in the structures that form as a result of partnerships during configuration and integration. However, these structures revolve around the microscopic behaviours of the organisation, therefore

emergence is evident in the patterns of relationships that are formed. This is due to the self-organisation of actors as they arrange themselves to best achieve organisational goals. **The virtual organisation therefore structures itself around the patterns of actor' relationships and not the other way round**. These patterns are not predictable, show coherence (lower-level components, namely the micro-logics of organising, are united on a higher-level in communication structures), and are dynamic.

Patterns of relationships form as a result of **synergy** created between components (actors/agents) of the system. Synergy improves the flow of **tacit** knowledge, which culminates in an outcome that is greater than the sum of its parts. Synergy therefore drives the virtual organisation through the creation of knowledge and the formulation of strategies based on the context for improvisation it provides. Therefore, strategy is formulated around culture, synergy, relationships and interactions.

In addition, the behaviour of complex adaptive systems is determined by the nature of interactions and not by what comprises components. Each element in a dynamic system is interdependent and depends on other elements for its identity and function (Lichtenstein; 2000). Mutual dependence implies that actions and structures are mutually constituting and arise simultaneously over time. During organising action, reaction and learning arise mutually to create a **collective** mind (community nature of virtual organisations). Knowledge flows are also mutually constituting and mutually dependent. Therefore, structures have limited influence on resultant behaviours.

Interactions are rich, dynamic and underscored by **feedback** (communication). This highlights the importance of **relationships** in virtual organisations. Relationships are fundamental to all agents in the complex adaptive system. In the virtual organisation these relationships are the cornerstone of culture and dependent on building and sustaining trust. **Trust** serves as the coordination mechanism in virtual organisations.

In summary, and of importance to managers, the structures of the virtual organisation are fluid and form around relationships which self-organise in the flexible technological context of the virtual organisation. This leads to the emergence of communication structures, rather than traditional hierarchical structures.

4.2 MANAGING THE VIRTUAL ORGANISATION

Results of the study indicate that managers in virtual organisations follow a servant-leadership approach. Servant leadership is based on the assumption that work exists for the development of the worker as much as the worker exists

to do the work (Daft & Marcic; 2004, 435). Virtual organisation managers strive to fulfil workers' goals and needs and realise the larger purpose or mission of the organisation. They are people- and results-oriented, focusing on people to achieve results.
Results further indicate that managers in virtual organisations share power, ideas and information, and acknowledge the achievements of others. They value people, encourage and create opportunities for participation, share power, create the context for synergy and improvisation, and build and sustain trust through regular communication. Organisation building and behavioural processes are emphasised. To summarise, managers in virtual organisations:

- **Empower** employees to make decisions by focusing on developing skills and abilities, and regular communication and feedback (bottom-up and top-down empowerment).
- **Delegate** to develop skills and focus on the "bigger picture" of virtual organisation through clearly articulated goals, participative decision-making and feedback.
- **Recruit wisely**: This often relies on intuition. The new recruit "fits" with the existent organisation culture and value system.
- **Communicate** for effective coordination, information sharing and knowledge sharing. The main purpose of communication is to reduce equivocality. Communication is transparent, and frequent and consistent for both task and relational purposes.
- **Build culture** by establishing trust, instilling organisation values, and by aligning personal goals with the organisation's mission. Culture building results in empowered employees. Managers must establish a culture of virtuality to build and sustain a strong, innovative organisation culture. This occurs in a context with very limited face-to-face interaction.
- **Focus on knowledge**, emphasising the sharing of tacit knowledge. Knowledge is created by providing the context for synergy and the sharing of tacit knowledge such as in brainstorming sessions or think tanks.
- **Establish trust**: Trust is based on the credibility of the manager, where credibility refers to the ability to engender trust in others and is based on the expertise of the manager.

For the interactions and continuous information exchange needed for complex adaptive systems behaviour, virtual organisation management:

- Is participative and democratic to enable collective learning across flatter hierarchies.
- Is adaptable and flexible to accommodate deviations from standard practices so as to respond to change. Strategic flexibility enables emergent strategy design.

- Builds a culture based on trust and a strong value system to empower employees. This creates a secure context that ensures that actors are more amenable to change.
- Decentralises decision-making to create a flexible structure for the emergence of autonomous informal groups. In addition, decentralised authority increases the adaptive capability of the organisation and its actors.
- Creates the context for synergy and improvisation by disseminating and sharing knowledge. Establishes open systems of communication for the regular sharing of information.
- Continuously engages in environmental scanning to: keep abreast of industry trends, developments and opportunities; build networks of beneficial contacts; acquire knowledge; and build credibility through expertise.

5. CONCLUSION

Fuelled by technology, information and communication, the virtual organisation exists in cyberspace, and is built on participation, synergy and improvisation. Virtual organisations will radically change the way we work and the way communication and interaction are viewed, practiced and studied. Likewise, management practices will adapt and evolve to accommodate these changes.

The virtual organisation provides a new context for organising and presents numerous challenges to managers because it is unrestricted by the traditional boundaries of space and time. Bringing the boundaryless opportunities of virtual organisation to full fruition is the role of a new breed of managers in a relatively young information era.

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ANALYSIS OF DIFFERENCES IN ATTITUDES BETWEEN MANAGERS AND NON-MANAGING EMPLOYEES*

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Abstract

The basic task of managers is to establish and maintain the conditions required for joint activities of individuals aimed at efficient achievement of goals set by the organization they work for. An organization, be it non-profit or for-profit, will perform better and fulfil its mission more efficiently if its employees have a more positive outlook on different aspects of their work, but also on other work-related issues. It is therefore advisable to conduct frequent attitude surveys of both managers and non-managing employees. The results of such analyses could then be the basis for taking appropriate decisions and measures in the domain of human resource management. The research presented in this paper seeks to explore the differences in attitudes between these two employee categories regarding different aspects of material and non-material character. With this in mind, a sample was gathered of 360 respondents from the area of Osijek-Baranja County. Appropriate methods of descriptive and inferential statistics, as well as factor analysis were used to analyze the collected data.

JEL classification: E24, J21

Keywords: attitudes of managers and employees, analysis of differences, human resource management, statistical methods

1. Introduction

Management is one of the crucial human activities that can be defined as a process of creating and maintaining an environment where individuals, working together in groups, efficiently achieve designated goals (Weihrich & Koontz; 1994, p. 4). In this context, managers are those people who assume tasks and functions of management in any kind of organizational venture. Managers can also be viewed simply as organizational members who are responsible for the work performance of other organizational members (Helms (ed.); 2006, pp. 498-499). They have formal authority to use the organizational resources and make decisions. It is common to differentiate here between three levels of management: top-level, middle-level, and first-level.

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Numerous interactions take place even in relatively small organizations. One of the main prerequisites for successful operation of any organization is having a positive atmosphere where interactions between employees have an impact on its overall development. There is no doubt that higher job satisfaction, as well as satisfaction with other work-related life aspects, contribute to creating such a productive environment. In order to improve relations within an organization, be it non-profit or for-profit, it is necessary to regularly conduct opinion polls of all its employees regarding different issues of material and non-material character. Such surveys can help organizations to take appropriate decisions and measures in terms of human resource management.

Human resource management is the management function devoted to acquiring, training, appraising, and compensating employees (Benowitz (ed.); 2001, pp. 98-99). Actually, all managers have to manage human resources in one way or another; however, larger organizations need to establish a special department for this purpose. The activities of managers who manage human resources contribute directly to shaping an organization based on competent and motivated employees, who engage in team work in order to fulfil the set goals. Since human resources are the key factor in any organization, understanding this management function can help all those in charge to carry out their tasks more effectively.

Modern management theories emphasize that an organization's success depends greatly on satisfaction of its employees, and thus also on the relationships established between managers and non-managing employees. Starting from these assumptions, the present paper is intended to explore the differences in attitudes between these two groups of employees regarding certain aspects of their work. In addition, the survey included some questions on respondents' living conditions, which are directly connected to their employment.

2. Research methodology

The survey that helped us to gather the data was conducted by a questionnaire. The purpose of the survey and the instructions on filling in the questionnaire were explained to each respondent orally. The survey was anonymous.

Appropriate methods of descriptive and inferential statistics were used to analyze the data. In describing the respondent sample, relative frequencies were determined in addition to the absolute frequencies, and two-way tables were formed by grouping according to the modalities of the selected features. In the case of the variable defined as respondent age basic descriptive statistics were calculated.

For the research variables that represent employee attitudes on different job and life aspects it was also calculated basic descriptive statistics and composed 95% confidence intervals for the mean. In examining the significance of differences in attitudes between the two defined groups it was applied the t-test (statistically

significant differences confirmed at the significance level $p<0.05$), whereas the bar chart of the means of the research variables is included in the paper in order to visually present the obtained results.
In this paper, factor analysis was used in order to determine a smaller number of factors that can explain the correlation pattern within the set of observed variables. In this way, we set apart the factors that helped us to interpret the largest part of the common variance of the variables that reflect perceptions of the surveyed respondents.

3. Respondent sample and research variables

For this research a quota sample was formed. In this, an effort is made to systematically transfer known characteristics of a population to chosen sample units. In our case, three characteristics of employees were taken into account – gender, age, and level of education. The structure of the employed population in Osijek-Baranja County according to the stated characteristics was determined on the basis of Census 2001. In terms of the stated characteristics, the respondent shares in the sample correspond to thus determined structure.
The sample consisted of 360 employees from the area of Osijek-Baranja County. It included 60 managers (16.67%) and 300 employees who, at the time of the survey, did not perform any managerial functions, accounting for 83.33% of all the respondents.
Table 1 was obtained by simultaneous grouping according to modalities of characteristics that represent gender and the respondent function within an organization.

GENDER	FUNCTION		TOTAL
	Manager	Employee	
Male	42 (70.00%)	170 (56.67%)	212 (58.89%)
Female	18 (30.00%)	130 (43.33%)	148 (41.11%)
TOTAL	60 (100.00%)	300 (100.00%)	360 (100.00%)

Table 1. Distribution of surveyed employees by gender and function within an organization

Male respondents account for a higher percentage in the sample. They are prevailing in the group of managers, accounting for 70% of respondents.
Table 2 provides basic descriptive statistics that refer to the respondents' age relative to their function within an organization. The last column in the table contains the data calculated on the basis of data for all the respondents.

DESCRIPTIVE STATISTICS	FUNCTION		TOTAL
	Manager	Employee	
Number of data	60	300	360
Mean	43.083	38.920	39.614
Median	43.500	39.000	40.000
Minimum value	24.000	18.000	18.000
Maximum value	70.000	65.000	70.000
Range	46.000	47.000	52.000
Lower quartile	35.250	30.250	32.000
Upper quartile	50.000	46.000	47.000
Quartile range	14.750	15.750	15.000
Standard deviation	10.585	10.791	10.854
Variation coefficient	24.569	27.726	27.399

Table 2. Basic descriptive statistics referring to respondents' age relative to their function within an organization

On average, respondents performing managerial functions in an organization were about four years older than other employees. The youngest surveyed manager was 24, whereas the youngest employee was 18 years of age. For both distributions an approximately equal value of standard deviation was established. Based on the calculated variation coefficients it can be concluded that age-related manager distribution is characterized by a somewhat lower level of data variability.

Table 3 was formed by grouping the data according to modalities of features that represent the respondents' education level and their function within an organization. In order to simplify the review, only three modalities of the variable 'education level' were defined.

LEVEL OF EDUCATION	FUNCTION		TOTAL
	Manager	Employee	
No education, incomplete primary school, and primary school	3 (5.00%)	90 (30.00%)	93 (25.83%)
Secondary school	27 (45.00%)	179 (59.67%)	206 (57.22%)
Higher education (post-secondary school)	30 (50.00%)	31 (10.33%)	61 (16.94%)
TOTAL	60 (100.00%)	300 (100.00%)	360 (100.00%)

Table 3. Distribution of surveyed employees by education level and function within an organization

In keeping with our expectations, managers were on the whole more highly educated than other employees in our sample. Half of the managers had graduated from college or university, whereas only 10% of non-managing employees had completed some form of higher education. It should be noted that three owner-managers had not completed secondary school, thus standing out in the sample.

In order to examine statistical significance of differences in attitudes between managers and non-managing employees, 15 research variables were determined:

- Assessment of the income earned in the organization (V1);
- Assessment of current job (V2);
- Assessment of work space quality (V3);
- Assessment of technical facilities in work space (V4);
- Assessment of interpersonal relationships in the organization (V5);
- Assessment of relationship with superiors, if any (V6);
- Assessment of job security (V7);
- Assessment of possibilities for advancement in the organization (V8);
- Assessment of own dedication at work (V9);
- Assessment of possibilities for training in the organization (V10);
- Assessment of possibility to cover life expenses (V11);
- Assessment of insurance, such as savings, in case of emergencies (V12);
- Assessment of the amount of own leisure time (V13);
- Assessment of own material wealth (V14);
- Assessment of own risk-taking propensity (V15).

In this research, respondent attitudes were measured on a 5-degree scale, ranging from 1 as the lowest to 5 as the highest grade.

4. Descriptive statistics and t-test results

Table 4 contains the values of basic descriptive statistics (means, medians and standard deviations) calculated for the 15 research variables. The table also states 95% confidence intervals for the mean.

VARIABLE	DESCRIPTIVE STATISTICS			95% CONFIDENCE INTERVAL FOR THE MEAN	
	Mean	Median	Standard deviation	Lower bound	Upper bound
V1	2.825	3.000	1.058	2.715	2.935
V2	3.156	3.000	1.163	3.035	3.276
V3	3.134	3.000	1.175	3.012	3.257
V4	3.139	3.000	1.200	3.014	3.263
V5	3.331	3.000	1.216	3.205	3.458
V6	3.286	3.000	1.210	3.157	3.415
V7	3.144	3.000	1.283	3.012	3.277
V8	2.606	3.000	1.283	2.473	2.739
V9	4.089	4.000	0.928	3.993	4.185
V10	2.624	3.000	1.356	2.483	2.765
V11	2.808	3.000	1.096	2.694	2.922
V12	1.994	2.000	1.037	1.887	2.102
V13	2.833	3.000	1.120	2.717	2.949
V14	2.711	3.000	1.061	2.601	2.821
V15	2.747	3.000	1.060	2.637	2.856

Table 4. Basic descriptive statistics established for 15 research variables and 95% confidence intervals for the mean

On average, respondents assessed with the highest grade their own dedication at work (V9). This was the only variable with the average grade higher than 4. There is a 95% probability that the population mean for this variable is higher than 3.993, and lower than 4.185. It is followed by the assessment of interpersonal relationships in the organization (V5), and the assessment of relationship with superiors, if the respondent had any (V6). The lowest average grade was calculated for the variable defined as insurance, such as savings, in case of emergencies (V12). In our research, this was the only variable with the average grade lower than 2.

Table 5 lists basic descriptive statistics calculated for the analyzed research variables with respect to the function of employees in an organization, as well as t-test results, which was used to test the hypothesis that two population means are equal.

VARIABLE	FUNCTION				T-TEST	
	Manager		Employee			
	Mean	Standard deviation	Mean	Standard deviation	*t*-value	*p*-level
V1	**3.517**	**1.081**	**2.687**	**0.999**	**5.792**	**0.000**
V2	**3.633**	**1.178**	**3.060**	**1.138**	**3.543**	**0.000**
V3	**3.610**	**1.114**	**3.040**	**1.166**	**3.456**	**0.001**
V4	**3.667**	**1.084**	**3.033**	**1.196**	**3.801**	**0.000**
V5	**3.633**	**1.104**	**3.271**	**1.230**	**2.117**	**0.035**
V6	3.512	1.162	3.253	1.216	1.309	0.192
V7	**3.500**	**1.255**	**3.073**	**1.278**	**2.367**	**0.018**
V8	**3.373**	**1.312**	**2.455**	**1.224**	**5.204**	**0.000**
V9	**4.333**	**0.795**	**4.040**	**0.946**	**2.248**	**0.025**
V10	**3.400**	**1.330**	**2.468**	**1.309**	**5.019**	**0.000**
V11	**3.650**	**0.988**	**2.639**	**1.038**	**6.941**	**0.000**
V12	**2.683**	**1.172**	**1.857**	**0.952**	**5.897**	**0.000**
V13	2.683	1.200	2.863	1.102	-1.137	0.256
V14	**3.417**	**0.907**	**2.570**	**1.034**	**5.904**	**0.000**
V15	**3.300**	**1.062**	**2.635**	**1.025**	**4.554**	**0.000**

Table 5. Basic descriptive statistics referring to 15 research variables, with respect to the characteristic defined as employee's function within an organization, and t-test results

In comparison to non-managing employees, the surveyed managers gave a lower average grade only to the amount of own leisure time (V13). Overall test results indicate that the only statistically significant differences are not to be found in this variable, and the variable defined as relationship with superiors (V6). For all the other research variables it was confirmed that statistically significant differences exist at the level $p < 0.05$.

The means of the analyzed variables with respect to the characteristic defined as employee's function within an organization are shown in Figure 1.

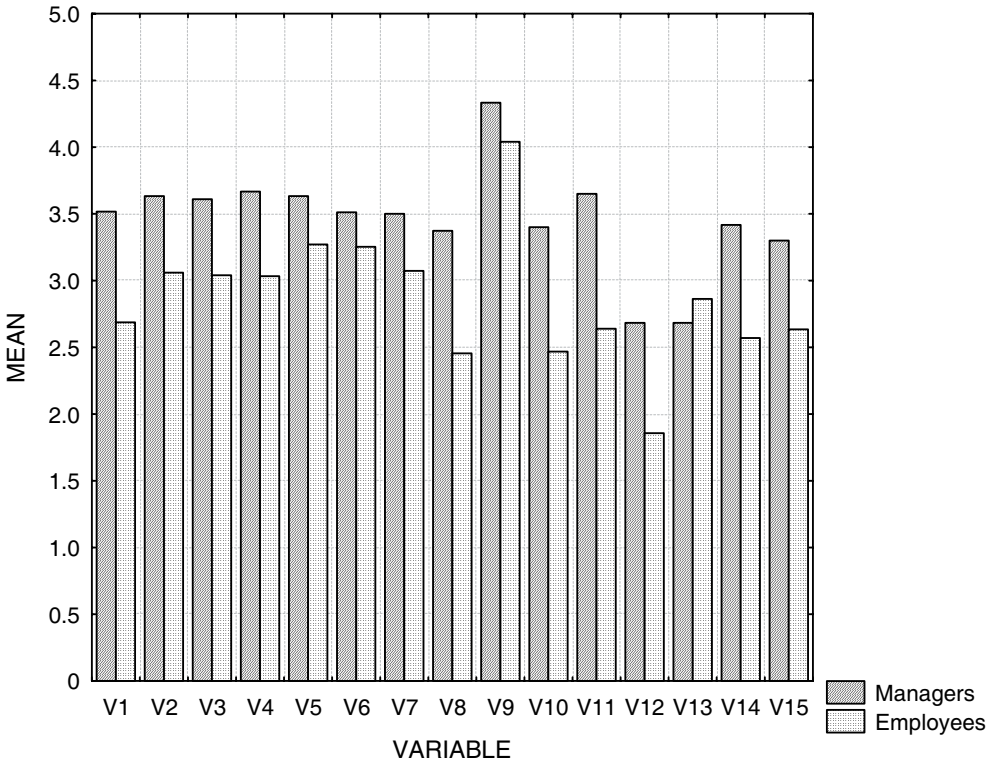

Figure 1. Mean of analyzed variables with respect to the characteristic defined as employee's function within an organization

The obtained results indicate that managers have on average more positive perceptions of different employment aspects and other work-related issues.

5. Factor analysis of research variables

One of our research goals was to apply factor analysis in order to determine a smaller number of factors that could interpret the correlation pattern within the set of observed variables. To verify whether the data were adequate for conducting this type of analysis, it was first calculated the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy, which had the value of 0.873. It was thus confirmed that the collected data were suitable for conducting factor analysis. In the framework of factor analysis, extraction was performed by the method of principal components. To determine the number of main components we used the Kaiser criterion. Through such limitation, the area of 15 variables was reduced to three main components which explained 55.824% of total

variance. Table 6 contains eigenvalues, percent of variance and cumulative percentages of extraction and rotation sums of squared loadings.

COMPONENT	EXTRACTION SUMS OF SQUARED LOADINGS			ROTATION SUMS OF SQUARED LOADINGS		
	Eigenvalue	Percent of variance	Cumulative percentage of variance	Eigenvalue	Percent of variance	Cumulative percentage of variance
1	5.572	37.150	37.150	4.398	29.317	29.317
2	1.780	11.866	49.016	2.912	19.415	48.732
3	1.021	6.809	55.824	1.064	7.092	55.824

Table 6. Eigenvalues, percent of variance and cumulative percentage of extraction and rotation sums of squared loadings

To increase the interpretability of the components they were subjected to rotation. Table 7 lists the correlations between 15 analyzed variables and the three factors, which were determined after the method of varimax rotation was applied.

VARIABLE	FACTOR		
	1	2	3
V1	0.481	**0.547**	-0.273
V2	**0.728**	0.322	-0.209
V3	**0.730**	0.201	0.066
V4	**0.761**	-0.023	0.105
V5	**0.722**	0.086	0.169
V6	**0.727**	0.217	0.170
V7	**0.685**	0.145	-0.051
V8	**0.602**	0.395	-0.193
V9	**0.548**	0.040	-0.093
V10	**0.537**	0.451	-0.165
V11	0.146	**0.770**	0.014
V12	0.086	**0.754**	0.042
V13	0.044	0.235	**0.865**
V14	0.101	**0.758**	0.183
V15	0.114	**0.491**	0.116

Table 7. Rotated component matrix (varimax rotation)

The first factor was formed by means of the following nine variables: assessment of current job (V2), assessment of work space quality (V3), assessment of technical facilities in work space (V4), assessment of

interpersonal relationships in the organization (V5), assessment of relationship with superiors, if any (V6), assessment of job security (V7), assessment of possibilities for advancement in the organization (V8), assessment of own dedication at work (V9), and assessment of possibilities for training in the organization (V10). These variables refer primarily to particular aspects of employment, i.e. job, which is why the factor extracted in this way can be called - ***the factor of job satisfaction***. The strongest correlation with this factor was shown by the variable representing the assessment of technical facilities in work space (V4), whereas the weakest correlation showed the variable defined as the assessment of possibilities for training in the organization (V10).
Five variables participated in forming the second factor: assessment of the income earned in the organization (V1), assessment of possibility to cover life expenses (V11), assessment of insurance, such as savings, in case of emergencies (V12), assessment of own material wealth (V14), and assessment of own risk-taking propensity (V15). The variables making up the second factor are mostly material in character. The factor isolated in this manner can be called - ***the factor of satisfaction with income and wealth***. The variable that reflects the assessment of own risk-taking propensity (V15) also contributes to the second factor. Although the correlation here is the weakest, it can be concluded that managers and employees make a certain connection between income and wealth on one hand, and risk propensity on the other.
The third factor was formed by a single variable of non-material character, defined as the assessment of the amount of own leisure time (V13). For this reason this factor was called - ***the factor of satisfaction with own leisure time***. The correlation between the stated variable and this third factor is rather strong.

6. Conclusion

Human resources are the most important factor in any organization. There is no doubt that an organization will be able to fulfil its tasks and plans more efficiently and effectively if its employees have more positive perceptions of their jobs, and also of work-related life conditions. Within the function of human resource management it is therefore necessary to conduct permanent opinion polls of employees in general, i.e. of both managers and non-managing employees. Such surveys can provide the information required for taking measures aimed at improving material and non-material working conditions, and thus also overall relations within an organization.
In line with this way of thinking, in this paper the results of a survey that examined the attitudes of managers and other employees from the area of Osijek-Baranja County have been presented. The research has shown that different aspects of employment and work-related issues received higher average grades from managers than from other employees. The only exception was the assessment of the amount of own leisure time. Statistical significance

of differences was confirmed for 13 research variables under scrutiny here. Factor analysis was also applied in the paper, which helped us to determine three factors: factor of job satisfaction, factor of satisfaction with income and wealth, and factor of satisfaction with own leisure time.
Finally, it should be noted that the intention of this research was also to spur the interest in this topic in Croatian research and professional community, and to encourage systematic studies of these issues. Taking into account what adverse effects might ensue if these topics are disregarded, we believe it is crucial to give them due attention in the framework of human resource management without any delay.

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IMPLEMENTATION OF ORGANIZATIONAL CONDUCT AND OPERATION MANAGEMENT IN GOLF PROJEKT

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Abstract

Project Golf represents a series of activities and work with an irretrievable and unique goal - the ultimate goal being the launch of golf courts and accompanying facilities. Since the golf court project needs to be completed within a certain time period, certain costs and executive limitations in an unstable environment by effectively and efficiently using limited resource, it is clear that golf projects are specifically and demanding. Management and golf project realization is a complex dynamical process and it is necessary for its fulfilment to gather an adequate team of experts lead by a project manager. The scientific discipline of organizational conduct is dealing with actions and attitudes that people are showing in an organization and a project team. Operation management manages those business activities determining all the activities inside an organization tied to transforming input into output and in that way encompass all business functions. Since golf court management and realization is a very complex and demanding process it is clear that these two disciplines need to be applied in golf court realization. This paper deals with these issues.

JEL classification: H43, J24

Keywords: organizational conduct, operation management, project teams and golf projects.

1. INTRODUCTION

The realization of the Golf project is a complex and dynamical process. In order to fulfil all requirements it is necessary to gather an adequate team of experts, that is a project team. The Golf project represents a planned, programmed and continuous process whose obligations have been defined in order to obtain its technical, expense and program objectives. Taking these into account, golf projects represent specific and well organized demanding actions. The discipline of organization conduct systematically studies actions and attitudes people show inside an organization and a team, as well as a project team. Operation management usually stands for management of those business activities inside an organization related to the transformation of input into output. It also encompasses all business functions. That is the reason why it is necessary to explain and list basic principles and postulates of operation

management and organization conduct - to emphasize their role and significance in the golf project realization. This is particularly significant since project management represents a complex and dynamical process. It is necessary to gather an adequate team of experts for its realization. This is why this paper, along with relevant factors on golf projects, also deals with and lists basic principles of organization conduct and operation management –to prove and investigate the application of all disciplines in a successful realization of golf projects.

2. BASIC GOLF PROJECT POSTULATES/PRINCIPLES

A project is every series of activities or actions with a specific, irretrievable and unique goal which has to be completed within a certain time frame, has to take into account expenses and executive limitations, has specific commencing and completion dates, specific use of resources and is unrepeatable.(Barković, 1999.,str.127) This also refers to golf projects whose relevant features are:

- Golf projects have a unique goal, unlike certain operations which can develop different multiple goals.

- Organizational structure is, in principle, a connection of elements – project and functional organization and their interrelation where the elements of project organization dominate.

- Golf projects often encompass concessions inside of goals, plans and expenses. The concentration of general organization is focused on a project with specific goals.

- Since golf projects are unique events with irretrievable unique goals, the performance standards are less reliable. Features of golf plans are frequent and have drastically changes. This leads to complete changes of imminent project phase and project performance rhythm.

A special project team which consists of different profile experts is built for the project realization. At the head of the project team stands a project manager. The project manager is a person in charge of all businesses on the project. (Tadin, 2003.,str.149) The companies have to be aware of project management strategic value and its role in the organizational core and importance it has in the project's success. (Kerzner, 2004.,str.154.) Project management is a very complex and dynamical process and the application of operation management is necessary for its realization.

3. THE ROLE OF OPERATION MANAGEMENT IN GOLF PROJECTS

Golf projects are specific and organizationally very demanding and that is why the operation management is necessary for its realization - to emphasize relevant features of golf project management.

3.1. Basis of operation management

Operation management refers to management of those business activities which produce products and services.(Barković, 1999..str.3.) This notion determines all the activities inside an organization related to the transformation of input into output and encompasses all business functions. Operation management is most often defined as system management and control of the transformation of the input into output process. (Buble, 2000., str.621.) The contemporary approach to organizational and business management (as well as projects) emphasizes quality and the elimination of any loss, in this sense the application of operation management has a very important role. Its other role is to maintain competitive organization ability on the world market. Operation management has an important strategically role which mainly refers to identifying strong points related to production and redering services. The operation management system has as assignment to relate the entire production system management to all business functions. Due to all these factors, it is necessary to apply the contemporary methods of operation management which encompass the approach of the continual improvement of total quality, the approach of total activation of employees and their authorities, the approach of continual improvement, the process of business engineering, the application of a just-in time method and the application of benchmarking process. Hence, it is necessary to apply these contemporary approaches of operation management in the golf project realization.

3.2. Operation management contemporary approaches in the golf project realization

Golf project management is a demanding and complex process, as is every other project. It has 5 phases:

Golf project conceptualization phase is the initial phase in a project realization. It is the initial phase in which the golf project vision, purpose and strategically goals are determined. In this phase the carriers of the project are also defined, along with the eventual potential investors. In the context of golf project management, the vision represents an image of the future state of the golf court and all its additional facilities. It also represents a mental image of the possible and desirable project's future. This phase also answers the question

of the future look of the golf complex. It also answers the question of what all participants should be aiming at. Modern golf associations should be aiming towards the definition of a joint project vision – providing top service and quality to golfers and their friends. After determining this kind of vision, the purpose i.e. the mission of the golf project, which should satisfy all those interested and related to it, has to be defined.

Golf project definition phase is the phase of golf complex planning, where the project expenses, human resources – the core of the project team and sequence of activities are defined and planned. Also, priorities are set and the final plan of project realization is adopted. In the golf project management context it means that project consultants, that is project managers, have to be selected. This is followed by finding and selecting the golf court's location and feasibility study drawing (the study on project's cost effectiveness). The next step is the development of the environment protection study since it is the key document for obtaining location permit. In this phase it is necessary to define investors and set up a consortium made out of investors, local authorities and other experts related to the golf project to build a golf court. Business plan development is the next assignment and it is made out of the competition of the existiting documentation, cost estimate and finance elaboration. Afterwards, golf architects and other designers are selected. All necessary projects are approached and a project manager is selected. Great golf courts have a weight and demand balance which is a result of a uniform conjunction of holes of different levels of difficulty and graduation.[43] Hence, terrain design is a very demanding and complex work, on it depends the work success of the whole complex. Golf terrain design is these days becoming even more difficult and demanding. (Trent,R.J.:1993.,str.266.) The selection of golf architects is also very important, since the practise has shown that the golf courts designed by famous design experts are more profitable and more successful than others.

Golf project activation phase is a phase of forming and golf project development. The success of activation phase depends on the project team i.e. project team manager. The building of the golf terrain and its facilities is divided into several phases:

1. Golf terrain building preparation
2. Main building
3. Special building
4. Supply and mechanization insurance for golf terrain maintenance
5. Sowing and lawn growing
6. Lawn ripening
7. Golf court opening

World and European experiences show that a 3 year period is necessary for golf court realization; from initial selection to golf terrain opening. It takes a year to build and grow the lawn.

Golf project operationalization phase is a phase in which the system has fully developed. This means that the process of providing golfer and other services has begun and that the resource usage is in full swing. Clients – golf players and their guests - use and observe system results. Of course, the aim is to ensure the biggest profitability of the golf project. Bigger profitability of golf is possible to accomplish by using golf and its facilities more, along with a higher selling service price. (Bartoluci,2007., str.166.)

Un-investment phase is a phase in which the project is completely finished, and the resources are redirected to other projects.
Since for golf project realization the functioning of the project team is of crucial significance, it is also necessary to apply modern knowledge of organization conduct in the golf project realization.

4. ORGANIZATION CONDUCT IN THE CONTEXT OF GOLF PROJECT REALIZATION

It is necessary to present basic postulates of organization conduct and analyze the individual and group role from the standing point of its modern knowledge.

4.1. Basic principles of organization conduct

Organization conduct is a combination of systematically action and attitudes which people show inside an organization study(Robins, 1995., str. 1). Organization conduct is dealing with work related conduct. Work (organization work) is characterized by hierarchy relations and a certain level of work division. The subject of systematically organization conduct study are different actions and attitudes depending on work efficiency and profitability. Predictability, absence from work and fluctuation are the three types of conduct proven to be significant in determining employee effect. Managers take care of output quantity and quality every employee creates, while absence from work and fluctuation can severely harm the output.. The goals of organization conduct are to help explanation, prediction and human conduct control. If the goal is the explanation and we want to understand a certain phenomenon then we try to explain it and answer the question why an individual or a group did something. The understanding is used to determine causative connection. Prediction is focused on future events – managers by predicting try to determine the action outcome. The control goal is the most valuable organization conduct contribution to a manager's efficiency. Since the project team is made out of

experts of different profile, various human relations are established during golf project realization. The quality of these relationships can significantly contribute the success of the project's realization. Human relations can be created artificially. (Kamp., Menadžer , 2000.) Because of the importance of human relations inside a project team, it is necessary to clarify an individual's as well as a group's role in organization structure, that is in a team of people in charge of golf project realization.

4.2. Individual's and group's role in a project team for golf project realization from the standing point of organization conduct

In order to understand better an individual's conduct in a project team for golf project realization from the standing point of organization conduct, it is necessary to emphasize the following notions: value, attitudes, personality, perception and learning, motivation and their influence on the golf project realization.

- Values represent basic individual's convictions on what is desirable, good or proper. They influence individual's attitudes and conduct inside a group, i.e. project team.

- A more specific notion than value are attitudes which reflect someone's feeling towards something. Attitudes reflect conduct, so the project manager should be interested in attitudes of other members of the project team as well as other employees and try to manage cognitive dissonance.

- Psychological line combination used in classifying an individual represents personality. Understanding differences of individuals in a project team helps the project team manager to choose better.

- In order to give significance to their surrounding, individuals organize and interpret what they hear and consider it reality - this whole process is called perception. Since the members of the project team and other employees observe their work and manager decisions, this perception is also very important for the whole project team and the project manager.

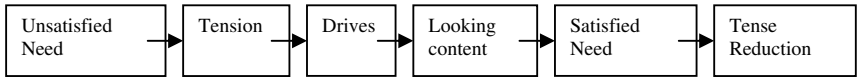
- Project team members and other employees study the whole golf project realization period through forming and project modulation. Project manager manages their studies by rewarding them and giving them examples.

- The readiness to do something, a type of outside conduct is called motivation. In the motivation process needs play the central role. Those needs which are not satisfied stimulate motivation which leads to their fulfilment. In

order to improve the motivation of their employees and enhance the productivity level, the manager has to recognize individual differences, relate people to their work, use goals considered to be obtainable, individualize rewards and relate them to effectiveness, check the systems' impartialness and neglects money as the main reason for which most people work.

Basic motivational processes are shown on the following picture:

Picture 2: Basic motivational processes



Source: Robins, S.: Bitni elementi organizaciskog ponašanja,Treće izdanje,Mate,Zagreb,1995.,str. 45.

Need dissatisfaction causes tension which stimulates an individual's drives. Drives encourage the reaction for satisfaction of needs and this leads to tension release – this is why is necessary to take this postulates into consideration in golf project realization. Project team is made out of experts of different profiles and it is for this reason necessary to take into consideration the role of the group in a project team. In order to obtain certain goals, two or more interactive and interrelated individuals join into groups. Individuals which constitute an organization usually join into sections, committees or other forms of work groups. All these have as a goal work assignments fulfilment – these groups are called formal groups. Every individual conduct in formal group is headed towards organizational goals. For successful assignment realization in a project team the real position in the firm as well as the quality of motivational factors applied in rewarding them have a great influence. In golf project realization, nonformal groups can also appear. In nonformal groups individuals constitute an alliance based on joint interests or friendship. Nonformal groups are not structured or organizationally determined. The needs for safety, status, self-esteem, belonging, power and reaching a goal are the most common reasons of joining a group. Managers are supposed to see the employee as a part of a group because it gives them an additional conduct dimension.

5. CONCLUSION:

A very small number of domestic authors have so far been dealing with issues related to golf projects. Possibilities of modern approach application of organization conduct and operation management are very badly researched, or not researched at all. Since the subject of this paper is studied and publicly presented very rarely, there is theoretical and practical justification for it. Golf project represents a series of activates or actions with a specific, irretrievable

and unique goal with the ultimate goal being the launch of golf courts and accompanying facilities. Since golf project has to be completed within a certain time frame, has to take into account expenses and executive limitations in an unstable environment, it is very clear that golf projects are specific and organizationally demanding. In their realization it is necessary to use the most contemporary knowledge from many scientific fields. Application of contemporary approaches of organization conduct and operation management has to be seen in this context. The contemporary approach to organizational and business management (as well as projects) emphasizes quality and the elimination of any loss, in this sense the application of operation management has a very important role and is seen in all golf project phases/stages. Other important roles of operation management are the maintenance of competitive organization ability on the tourist/golfer market and the strategic role referring to strong points identification related to providing services at the golf court. Contemporary postulates of organization conduct systematically study actions and attitudes people show inside an organization. Since the project team is made out of experts of different profiles, various human relations are established during golf project realization. The quality of these relations can contribute to the success of the project – organization conduct deals with it, precisely. Hence, it is necessary to apply modern/contemporary postulates of organization conduct and operation management in golf project realization.

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INTEGRATED QUALITY MANAGEMENT MODEL ON THE EXAMPLE OF DESTINATION SPLIT

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Abstract

Integrated Quality Management (IQM) is argumentative and efficient method proposed by the European Commission to reach and maintain tourist products and services quality in destinations.
The paper presents IQM possibilities and phases in Split where tourism could base on events and contents quality and diversity, gastronomic and catering offer or destination cleanliness and ecological acceptability.
Split should accept proved quality improvement method and adopt European IQM model. Benchmarking Split with Stockholm, IQM method implementation is suggested for Split to keep its comparative advantages and enable long-term market competitiveness. Adopting IQM method completes value chain of Split tourism, depending on cooperation of all included in tourist activity: local and state authorities, tourism entrepreneurs, local population. Establishing institutional leader as destination management organisation, Split provides cooperation and partnership.
Three development scenarios for Split were compared and repositioning suggested on all levels by stressing quality aspect.

JEL classification: L15

Key words: quality management, destination, benchmarking, partnership

INTRODUCTION (EUROPEAN MODELS OF DESTINATION MANAGEMENT (IQM))

TQM (Total Quality Management) is already a constituent part of the approach just recently accepted by our tourist operatives. The latest approach to destination management is IQM (integrated quality management), i.e. European initiative founded to encourage development and implementation of sustainable and quality oriented approach to tourism.
IQM can be defined as systematic procedure for external and internal quality, i.e. short-term economic improvement and long-term local development. Internal quality is the value a tourist receives through a chain of experiences. External quality implies sustainable tourism development with rational and renewable use of sources and resources like territory, water, energy, natural resources, and heritage, all to prevent destruction and saturation problems. The

objective of external quality lies in long-term balance *(European Commission, Brussels, 2000).*

In 2000, the European Commission (EC) issued a document proposing integrated model of destination quality management based on the comparison of relatively similar models, i.e. already existing positive European examples. This paper presents benchmarking with destination Stockholm and proposes IQM model in destination Split.

DESTINATION LIFE CYCLE (DECLINE PHASE)

To introduce quality management into Split, the destination has to be seen as a business model and optimum development direction selected based on qualitative and quantitative indicators. Decline phase in a life cycle of a destination is frequently noticed very late, thorough physical indicators like number of arrivals or rooms/night. However, if we look at the destination as live business system, this life cycle should be considered in wider sense. The EC points to balanced score card (BSC) developed by Kaplan and Norton in 1993 which sees the destination as a continuous methodology of monitoring, learning and return relation based on destination development vision and strategy. Based on development strategy, BCS constantly monitors the demand and supply of the destination, resources, communication and innovation, through short- and long-term objectives in order to record deviations from the desired results.

When monitoring destination decline phase, clear objectives have to be set within main development strategy and one development scenario selected.

There are three possible scenarios:
A. STATUS QUO model (scenario with prolonging the current state)
B. Scenario with maximum construction and growth of accommodation capacities
C. Scenario with restructuring and repositioning (Cetinski, Perić, 2005.)

SELECTING IQM MODEL FOR DESTINATION SPLIT (comparability with destination Stockholm)

Destination sustainability estimate – indicators in destination Split
- ✓ Around 200 000 inhabitants
- ✓ Town surface area 7852 ha
- ✓ Mostly transit destination – very small number of stays longer than 2 days
- ✓ Mostly foreign tourists, around 70% in relation to the domestic

✓ Most represented are traditional markets like Germany and Italy, growing number of arrivals from France, Spain, UK and Far East (Japan)
✓ Around 80% of rooms/night made in primary accommodation capacities (hotels)
✓ Around 4079 accommodation units, out of which 1738 in hotels
✓ Nautical tourism 1600 beds

Though population and size of Stockholm is significantly bigger than Split, the destination typology can be compared as well as relative attractions similarities. Both destinations are on the coast and have a character of urban centres which their main offer is to be based on. Both destinations have mostly foreign visitors. Although they differ in the number of accommodation units, the very model of integrated quality should not largely deviate from the tested model. Although has far larger offer of tourist contents, even a smaller destination, like Split, has many diverse contents to offer.

Main attractions of destination Split:

✓ Exquisite geo-traffic position and excellent link to European generating centres
✓ Climate, clean sea, beaches and environment, ecologically acceptable state of environment
✓ Rich natural attractions like Local Waters Archipelago of Split, beach Bačvice or hill Marjan
✓ Rich and well-known cultural-historical offer (UNESCO): Diocletian palace, The Cathedral of St Domnius, Jupiter's Temple, quayside, fish market, theatre, etc.
✓ Long catering tradition
✓ Famous gastronomy: healthy Mediterranean cuisine
✓ Abundance of events (Split Summer, etc)
✓ ACY marina Split with Blue Flag
✓ Nearby destinations and attractive locations (Salona, Trogir...)

Accommodation: Table 1 shows comparison and estimate of hotels in the two destinations.

Table 1: hotel offer benchmarking for destinations Split and Stockholm (inner town)

SPLIT	**STOCKHOLM**
2 hotels ×5 stars = 10	5 hotels ×5 stars = 25
6 hotels ×4 stars = 24	25 hotels ×4 stars =100
5 hotels ×3 stars = 15	19 hotels ×3 stars = 57
3 hotels ×2 stars = 6	2 hotels ×2 stars = 4
1 hotel × 1 star = 1	1 hotels × 1 star = 1
17 TOTAL 56	**52 TOTAL 177**
Average grade 3.29	**Average grade 3.59**

Source: made by the author

In both destinations, 5 stars hotels prevail testifying on their target groups. Average grade of 3.29 does not meet expectations of a contemporary tourist; thus further development of accommodation units' quality and quality in Split should be a part of the total strategy of tourism.

Public transportation: Only state company "Promet Split d.o.o." provides transportation services on town and long-distance connections. During season, extra lines are introduced and new busses constantly purchased. Travelling area is divided into 4 zones; ticket price depends on the distance form the town centre. One can buy day, monthly or annual pass though there is no option for a tourist pass or any conveniences for tourist transport.

Destination Stockholm has a functional network of public transportation in the inner and outer belt. Transport covers bus and boat transport as well as underground. There are free lines for tourists in further areas aim at raising quality of tourist offer and directing tourists into areas of largest products and services offer concentration thus increasing consumption. Assigning concessions for such services and other benefits to entrepreneurs interested in assuming this service in Split would encourage local business subjects to activity and raise service quality.

Attractions: Split has many attractions based on natural-cultural-gastronomic heritage and in a relatively small geographic area offers many activities connected to environment, natural beauties, meeting history and destination indigenous culture. It shares several attractions with Stockholm: rich cultural offer, possibility to develop manifestation and congress tourism and ecological attraction. Precisely these are the base for further and serious tourism development of Split which has several important advantages, like its position and vicinity to European markets as well as climate characteristics which need to be turned into actual and real advantages on the international market. The structure and quality of personnel and human resources will be of crucial importance for further tourist growth and development of the destination.

Food and drinks: both Swedish and Croatian cuisines are divided into several regions and typologies. Stockholm has a rich gastronomic offer though general estimate is that the overall offer is commercialized and fully open to the influence of other European cultures. In its long gastronomic tradition, Split has large comparative advantage. Making and preparing healthy Mediterranean meals undoubtedly fits world culinary trends; precisely stress on domestic and healthy Dalmatian cuisine needs to become recognizable advantages of Split.

Cleanliness: Stockholm should be a model to Split for protecting its environment and cleanliness of public surfaces. Trend of turning to a healthy life and raising ecological awareness should be one of primary goals for Split as well, both for visitors and local population, since it has immense comparative ecological advantages compared to competitive European destinations. Favourable climate and ecological situation is a good base for developing alternative aspects of

tourism. Researches should be implemented and counselling organized on raising people's awareness on the matter.

Hospitality: Split Local authorities should put larger efforts into influencing awareness of average local man on necessity of tourism and intercultural tolerance through courses, presentations and various campaigns.

Tourists' information availability: Brochures, Tourist Board and tourist agencies in the very destination are not sufficient to provide satisfactory information level to tourists. When implementing IQM, Stockholm printed many information brochures, opened information centres, regularly updates its web sites and organized courses for all participant in tourist activities (bus and taxi drivers, shop assistants and similar) in order to make information available to its visitors. The importance of a uniform reservation centre is incontestable.

Prices: By comparing average prices of certain items for the two destinations, it can be concluded prices in Stockholm are 20-40% higher. Following items were compared:

- ✓ Food and during 20 % more expensive than in Split
- ✓ Entertainment 30 % more expensive than in Split
- ✓ Transportation 10% cheaper than in Split

Difference in price can become comparative advantage of Split, though smaller price must not be an excuse for lesser quality.

It is estimated that destination Split, as a business system, is not competitive on the world market. Split tourist model is currently acceptable and sustainable, though destination **is not long-term sustainable** since the existing offer conception and quality would soon become obsolete and uncompetitive for turbulent tourist market.

Tourism development scenarios in destination Split

Within Tourism Development Marketing Plan of Split, following strategic aims were set:

- ✓ Stronger connection of subjects (in)directly involved in town tourism to strengthen synergy effects on the level of the system
- ✓ Improving the state of infrastructure and reaching its optimum area arrangement
- ✓ Raising quality of service and commercial sector
- ✓ Developing additional programmes

These data show that Split should implement qualitative and qualitative reconstructing and repositioning which implies planned and organized development policy. The destination chooses investment in accommodation offer, improving gusts satisfaction and implies restructuring on organizational, technological, ownership, financial and similar level.

At the moment, Split has a few dominant five-star hotels, 5 three-start hotels and only two two-start hotels with extremely low offer quality insufficient for international standardization since they do not meet requirements of market trends. There is a total disproportion in accommodation offer. Around 40% of hotel capacities in Split are used. The average sale price in the market is around 50 euro (author's research). On the other hand, average price of hotel accommodation in Stockholm is around 1900 SEK, i.e. 180 euro (Stockholm Visitors Board research from 2008). Disproportion in sale price points to a necessity of quality restructuring.

Opting for investment in quantitative and qualitative offer part, obtaining higher selling price and investing into general rising of the quality of accommodation offer become objectives. It is proposed to raise category from 3*** to 4**** and construction of new higher category objects. Thus it is necessary to opt for the following adequate financial investments:

Table 2: Proposed investment into restructuring Split accommodation capacities

Investment into raising quality of existing hotel accommodation units	**Investment into building new hotel accommodation units**
5 existing 3*** hotels→ 5 4**** hotels 1000 accommodation units (a.u.) Current estimated average market price = 50 euro Aim: estimated average price = 80 euro Difference between existing and planned average selling price = 30 euro ***Justified investment into quality increase and raising offer level to 4**** standard***	→ 3 4**** boutique hotels 400 accommodation units (a.u.) Aim: estimated average price = 80 euro ***Justified investment into construction of new accommodation units of 4**** standard***
30 euro × 1000 = 30 000 euro/a.u. 30 000 euro×1000 a.u.=30 000 000 euro	80 euro × 1000 = 80 000 euro /a.u. 80 000 euro × 400 a.u.=32 000 000 euro

Source: made by the author

Direct investing into objects justifies and includes investments into infrastructure and accompanying offer in the following ratios:

- ✓ Accommodation offer.....59%
- ✓ Infrastructure.....19%
- ✓ Attractions.....10%
- ✓ Service quality 12%

Thus destination repositioning scenario and direct investments into quality and quantity of accommodation offer justify and bring qualitative improvements of aforementioned elements.
In view of offer repositioning strategy, the vision of destination Split has to rely heavily on increased competitiveness on tourist market, creating its identity of a safe, natural and content rich destination; thus investments should be made in selling, marketing and other activities. Branding Split as ″events destination″ should make it unique on the international market.
Main objectives reached by implementing the mentioned strategy within integrated management of the overall destination quality can be summarized into three groups: economic, socio-cultural and ecological. The main goals of the entire scenario are economical benefits and improving life quality of the population in the very destination.

Development plan for tourism in Split by introducing IQM strategy

PLAN (partnership development)
- ✓ Making plans to change the current state
- ✓ Need for better cooperation between public and private sector, coordinated by an institutional authority, i.e. leader
- ✓ Introducing dynamic quality plan for the destination, including all participants in understanding and implementing importance of quality

STRATEGY AND POLICY (creating programmes)
- ✓ Policy of expanding the offer from contents system innovation (stressing rich events)
- ✓ Rehabilitating hotel offer and designing programmes for smaller seasonality
- ✓ Program of system environment rehabilitation
- ✓ Sustainable destination development through ecological, socio-cultural, economic and technological sustainability
- ✓ Conversion of all abandoned and empty objects
- ✓ Preventing illegal construction and environment destruction
- ✓ Introducing quality system into all segments of tourist offer
- ✓ Improving infrastructure
- ✓ Systematically improving connections between the destination and islands

ACTIONS (IQM implementation, projects)
- ✓ Making and perfecting destination image
- ✓ Raising the level of the existing and building new accommodation objects
- ✓ Forming destination information and reservation on-line system
- ✓ Obtaining Blue Flag for certain beaches
- ✓ Designing new cultural, sports and other manifestations

✓ Actions to raise participants awareness on the importance of cooperation
✓ Training and education tourism employees and other participants
✓ Well organized transport services for nearby destinations in season
✓ Campaigns specialized for promoting manifestation tourism
✓ Enlarging nearby destinations into common quality campaigns
✓ Printing common catalogues and brochures

INDICATORS (monitoring)

✓ Making simple and clear forms for objections
✓ Constant surveillance and monitoring of tourists satisfaction
✓ Quality test
✓ Researching tourists motivation
✓ Local population attitude study
✓ Impact of tourism on environment study

RESULTS:

✓ Lesser seasonality, longer stays, larger presence of tourism selective forms
✓ Better and recognizable destination image, better position on international tourist market
✓ Designing new and recognizable tourist products
✓ Improving quality of all segments of tourist offer
✓ Improving informing guest and better care for them
✓ Raising visitors satisfaction, acquiring loyalty to the destination and visiting it again
✓ General cooperation of all participant in creating tourism and wider

Research for the needs of this Paper showed that Split lacks cooperation which would enable the aforementioned; therefore obtaining necessary partnership must be strived for. For integrated management of the destination quality, the objective of which is raising the quality of the overall tourist product, necessary is the cooperation of all below mentioned participants in the destination:

Public sector:

The town of Split, County representatives, institutions – public services providers, Split Tourist Board, Tourist Board of Splitsko-Dalmatinska County

Private sector:

Hotel companies, tourist agencies, companies – services providers, local population representatives, representatives of citizens providing private accommodation

Destination Management Organization (DMO) is an organization which could enable joint work with local government and population to tourist bodies from public

and private sector. The WTO (World Tourist Organization) shows that modern trends in almost all destinations are to go to semi-public and autonomous tourist organizations, including both public and private sector. Split needs to form a DMO or company to lead and coordinate all activities regarding quality. The objective of the organization is to reach cooperation of all parties and joint solutions for raising quality and long-term competitiveness.

Aims of Split DMO:

- ✓ Role of leader in the IQM implementation process
- ✓ Role of coordinator of all activities
- ✓ Role of designer of tourist products and destination services
- ✓ Role of promoter and designer of promoting activities
- ✓ Role of informant
- ✓ Reconciliation role in possible conflicting interests inside and outside the organization, based on professional and expert authority
- ✓ Role of monitoring operating of other offices (Complaints Office and similar)
- ✓ Role of educating and qualifying participant and employees in tourism

DMO is designed as an organization ensuring its own funds for further development through business and selling programmes the earnings of which will also be a support for new projects. Based on foreign experience, there are several possible selling programmes:

- ✓ Developing uniform reservation system and selling related services

(Uniform reservation system for hotel and private accommodation in the destination)

- ✓ Organizing various cultural and sports events

(Organizing events for special market interest groups)

- ✓ Developing additional services for visitors

(Transfer services for tourists staying in wider area)

- ✓ Training, education and improvement programmes

(Like workshops on service quality of tourist's habits from most represented generating markets)

- ✓ Service of making strategic programmes

CONCLUSION

European quality model is a strategic instrument enabling reaching of market success to destination Split and insisting on continuously seeing quality as necessary category of all elements of tourist offer. Based on restructuring scenario stressing qualitative aspect, Split will ensure its offer to be attractive on the market and competitive in long term.
Benchmarking method offered for destination Split and Stockholm shows that their base offer and attraction is comparable. Moreover, as a positive European example, Stockholm should be a model for Split in terms of cooperation between public and private sector and offer variety, quality as well as care for visitors and very population.
Destination Split should go along with international practice and select an IQM strategy based on detailed quality evaluation which will ensure long-term competitiveness and development.

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HUMAN CAPITAL – DRIVING FORSE OF INTELECTUAL CAPITAL IN CREATING FUTURE

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Abstract

In time characterized by complex and uncertain business environment and working conditions; where small, medium but even large (and up till yesterday) successful companies are failing on daily basis, it is important to have economy models which will ensure reestablishment of value system of industrial era, models which will give expected, positive, results.
In general, this is not the case since there is no compatibility of models with requirements of information era. So, those negative results together with market positions taken by those who understand changes better, emphasises need for understanding and implementing change management in companies.
When trying to overcome mentioned obstacles in coping with changes and demolished value system, key success variable was detected – human capital as the best source of creative energy.
In this study, human capital, as in many studies before, is recognised as driving force of intellectual capital and as well as synergy effect of conatival, motivational, cognitional, social, moral and communicational dimension.

JEL classification: J24, O15

Key words: economy of knowledge, intellectual capital, human capital, future

Introduction

In time characterized by complexity and uncertainty, time of fast and continuous changes, there are no guaranties for survival, not in possessions not in capital value. Small, medium but even large (up till yesterday) successful companies fails every day. Why? Since there is no adjustment of management models to needs of new era. Status quo is not good strategy for the future and it is impossible to count on slow changing process when managing. Changes are fast but organization of companies not dynamic enough to cope with that fast changes in most of the cases.

Human capital manages to differentiate itself as richest source in creating energy and as critical variable of success or failure.

Intellectual capital as dividing line between conventional economy and economy of knowledge

In 1675, King Charles II established the Royal observatory at Greenwich, with main goal to find a method of exact geographic longitude measuring. That decision was the result of understanding that the further development cannot be based only on regional sea transport, which was based on data of the geographic latitude and that for the travelling along the long seas, which were promising development, data on the geographic longitude are missing. Almost the whole century passed before the mystery of longitude was resolved (J. Harrison designed 1735.g. naval hour, the forerunner of chronometer but it took following 30 years to be recognized) and thus make breakthrough in the future (Edvinsson, 2003).
A similar challenge is happening in business world: in has latitude in its financial capital and should design solution to measure its intellectual capital - contemporary longitude. Comprehensive study of intellectual capital is essential in order to create "map" of unknown waters in future.
When rating global world competitiveness, best ranking positions are hold by countries of knowledge – countries which establish their development on non-conventional economy, on economy of knowledge where central position is given to intangible values. Modern economy sees competitive advantage as intangible, invisible, unseen. That invisible dividing line between accounting value of company and market value of company is intellectual company value. Intellectual capital is last undivided and un-wasted world resources. Companies, as well as all other communities, which are not able to see developing possibilities of intellectual capital, lost their basic strategy tool for developing in future.

When defining intellectual capital, it includes:

- Human capital,
- Structural Capital,
- Customer Capital and their relationship (Mujić, 1999., 199)

More specified, intellectual capital of employees can be divided as Human Capital (HC) which is composed of innovation capital and management capital, then Structural Capital (SC) composed of organization, innovation, process and relation capital, and Customer Capital (CC) composed of client capital, suppliers, shareholders, cultural capital (group of authors, 2001. 10)

Human capital, driving force of intellectual capital

Human capital is driving force of intellectual capital and includes knowledge of employees like innovation, capital management as well as the ability to implement the ideas into action and the ability of management to establish a connection between all components of intellectual capital. When defining human capital, it can be explained as the totality of individual and collective knowledge, skills, attitudes, capabilities, behaviours, experiences and emotions of all employees. (Group of authors, 2001. 13). In literature, human capital can be very often found as concept of human resources, which refers to what can be (but still isn't) when the necessary conditions are created and provides an important but not a comprehensive overview of human capital. Human capital in this (and numerous other researches and papers) is considered to be synergy effect of:

- Conative
- Motivational
- Cognition
- Social
- Moral and
- Communication dimension

Conative dimension refers to emotions that have a primary influence on development of human resources and represent an attempt of organism to achieve control over the complex and uncertain environment. R. Plutchik (Plutchik, 1980.), for example, says that the brain is developed with the purpose to predict the future by precisely defining environment, and increasing possibility of prediction and adjustment to new situations. Entering the problem of group dynamics he observed how emotional resonance (pleasant or unpleasant) and no-flow of information, as is generally thought, leads to group cohesion. Recent cognitions concerning the emotional intelligence confirm these theses. Emotional intelligence is now considered to be twice as important as the sum of quotient of intelligence and technical skills and one of the key competencies exchange. It represents the ability to know and control their emotions, understanding the behaviour of others and the successful establishment of social relationships with other people, as well as ability for proper response in a particular situation. (Goleman, 1997) Today there is widespread thesis that *IQ employs, and EI promotes.*

Motivational dimension in the development of human capital means a shift from the extrinsic to intrinsic motivation. It also means a shift from a lack of motivation (deficiency) expressed in order to survive and satisfy needs of security by removing defects and adverse effects and avoiding threat and

threats, to the motivation arising which is marked by the attraction of positive and development goal.

The cognitive dimension in the development of human capital in particular is considered through the development of creative thinking and the processes of acquiring knowledge. The path towards the knowledge society assumes that all its members, especially those responsible, learn to learn. Therefore for responsible positions that are requiring high level of professionalism is introduced Institute "unit of continuing education" (continuing education unit-CEU), which has the purpose of recertification of university diplomas. Speed learning and through that creating space for new opportunities necessarily connected rational intelligence (IQ) with the emotional (EQ) and spiritual or synaptic intelligence (SQ) (Edvinsson, 2003. 18).
High technology reveals many new educational opportunities: access to information in real time, mentor-management and distance communication, localising the time and place of their own professional development, exchange and verification of acquired knowledge through the network etc. The need for a holistic knowledge and skills, self-education and lifelong learning grows. For companies competitive advantage can be found in employees called „basic minds"- intellectual workers who know how to handle situation in the most extreme conditions (who are around 0.06 to 0.6 percent in total number of employees). Furthermore, social networks significantly contribute when acquiring knowledge and they become necessary but still not sufficient precondition for development. Networks, which enable fast exchange of data and information, are needed but they are not enough for a true acquisition of knowledge (and wisdom) and its integration into development. What is needed is community of knowledge.

Creation of those networks and communities leaded to a more intensive study of the impact of *social capital* on economic success. Social capital, according to Bourdieru (Arregle et al., 2007., 21), is totality of current and potential resources that are linked to possession of durable networks of more or less institutionalized relationships through mutual acquaintances. According to some authors, there are three dimensions of social capital:

- Connecting (the establishment of good relations between workers with similar characteristics)
- Bridging (the establishment of cooperation between workers of different characteristics)
- Joining (connecting with people in powerful positions) (Baker, 2004. 47)

Social capital can be seen as capital of relations (often informal) between individuals and organizations to facilitate activities and create value and are

based on common interests. In studies of social capital, one must also include networks between employees (structural social capital), the quality of these networks (relational social capital) and the ratio between system of rewarding employees and system of evaluating of their networks (cognitive social capital). We also cannot ignore forms contrary to the positive impact of social capital expressed in visantisam, phenomenon of cunning, seductive and deceptive mode of action that creates a climate of distrust.

Ethics and morality are factors that prevent often a thin line between the positive impact of social capital and visantisam. Moral traditions, principles and standards, which expresses the perception of good and evil, just and unjust, moral and immoral, capture human relations, and are therefore the moral relationship, the social relationship. The moral ethics deals with the question of the source of morality, the criteria of moral judging of human actions and moral evaluation. According to Klaić, ethics - Greek (ethos) custom, habit, mood - doctrine of morality, has task not only to acquaint us with what is morality, which is its basic component, but also to take critical viewpoint towards the existing moral practice. Moral is one of the fundamental modes of human relationship to the world. Ethics is theory or philosophy of that relationship. "(Bebek, Kolumbić, 2000. 3).
The word ethics originates from the Greek word, ethos: custom, nature, character (Anić, 2004. 176). The word morality originates from the Latin word, moralis: character, nature (Anić, 2004. 229). This shows that the existing distinction of terms moral and ethics is primarily of technical nature where the moral is object in ethics as a theory or as a scientific discipline. Morality is a characteristic of humans. Morality is a subjective truth, and knowledge strives towards objective truth. Studying the role of moral dimensions in the development of human capital should focus on personal, social and business morality. Specificity of morality is in its subjectivity and double function, morale at the same time contains the motivation and regulatory function.

Although that behaviour depends on social and historical circumstances ethical decision is, however, primarily located in the individual whose duty is to choose their own values and personal goals. The human being is, as it says E. Morin (Morin, 2008.), hologram point that contains integrity individual - species-society, because although it remains completely separate, consists the genetic heritage of species and a norm of one culture - society. Individual-species-society, are inseparably connected and through the history occur the disturbances, the failures of these three elements of ethics. Increase in corruption in all forms, general discourtesy and frenetic of violence cause sincere need for a "new ethic" so that more and more talks and writes about auto-ethics which seeks to discipline egoism and to develop altruism, about socio-ethics that connects us with others, community and the entire world and

about antropo-etics that is specifically related to the planetary humanism (its special task is to civilize the Earth).

Communication dimension. The increasing complexity of problems and conditions in which they resolve require different skills and interdisciplinary competence; increasing uncertainty and fast changes make the time pressure that is more easily resistant to well-organized teams; automation and networking at all levels and in all areas provide faster flow of information; merging of otherwise separate specialized knowledge increases productivity and quality; in groups the needs are satisfied in better way, groups are emotional shelter for those who don't have that shelter in family, neighbourhood, church and also the spirit of time brings change of values and encourages the strengthening of participation, co-responsibility, co-decision procedure. Often communication problems have their source in the organizational dilemmas that indicates the actual or only potential, but constantly present gap between individual needs, interests and goals of the participant of organizations and what is defined at the level of the organization as a whole.

Bad communication is often result of disagreements that occur due to poor transmission of information. "Noise" in the transfer of information provokes emotions, way of thinking, all available knowledge, interests, circulation and cooperation is the human response to high technology, documentation, etc. If level of emotional and intellectual resonance among the participants in the communication process is lower, it is even more important to define ways and modes of communication. Many problems arise because of human's constant need for comparison with others, which mostly results in deprivation[44] and often with „familiar" and "revanche" forms of behaviour at all organizational levels. Modern forms of flexible organization and implementation of high quality information technology make it possible that each individual can at the same time belong to: a group of equals, a group in which he may feel like looser, but also the group in which he will be better than others, which certainly contributes to the reduction of deprivation. Besides, the speed and quality of information is such that the misunderstanding almost shouldn't appear. Technological barriers for quality communication almost do not exist. They lie in the human emotions, needs, knowledge, and imagination. Growth of importance of communication and cooperation are the human response to high technology, contribute to the creation of high tech / high touch relationship (Mujic, 1999. 203).

[44] Kako je usporedba uglavnom s onima boljih postignuća javlja se osjećaj zavisti ili pak nepravde kada se za isti ulog dobiva manje.

Therefore, the foundation of good communication is appreciation of needs, interests and goals of all participants in the organization, or as F. Vreg says... new paradigm is based on the assumption that the communication is a form of cooperative interaction in which there is process of disjunction, but process of keeping its identity and its own interest as well (Vreg, 1998., 11) Development of trust is the bridge across which happens the transfer of implicit (silent, hidden, unsaid, intuitive, empiric and practical) to explicit (formatted and formalized knowledge recorded in books that can be transferred to educational processes) knowledge. Confidence increases proportionally to consistency of behaviour which is why it's important to nurture the positive forms of organizational and business culture.

Conclusion

The whole world has been touched by the recession and attempts to find the way out of using the models of which are expected to re-establish the value system of industrial age, which primarily means that the capital will create enlarged capital, does not give the expected results. Business world in the financial capital has its "latitude" but for a successful orientation in the future or, even better, to create the future, „longitude“is needed as well. In complex and suspenseful terms of the information age, economic science appears refreshed in the form of economy of knowledge. In the heart of the economy of knowledge is the concept of intangible value. Competitive advantage is moving from the physical to the intangible, from visible to invisible, from seen to unseen. Invisible dividing line which explains the difference between accountant and market value of the company can be recognized in the value of its intellectual capital. Intellectual capital includes: human capital, structural capital and customer capital and their mutual connections. That is undivided world resource and everyone should find the way to participate in it.

Driving force of intellectual capital is human capital that in this and numerous other studies and scientific papers considered as a synergy effect of: conative, motivational, cognition, communication, moral and social dimension. Thus formulated human capital is the individual value that company cannot own and it's hard to be measured. With further research and acquisition of new knowledge it is possible that some of those dimensions of human capital become less important, it is possible also that some new ones will be introduced. The future goal is to explain rather than simplify the role and place of human capital in intellectual capital and the role of intellectual capital in the development i.e. creation of future. Scientific segment of the public interested in the economy of knowledge impend difficult but challenging task of measuring the quality of human and intellectual capital which will be drawn from the anonymity of classical financial statements.

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KNOWLEDGE MENAGEMENT

Ljubo Đula, dipl. ing.

Abstract

The main aim of European Union is "to become the most competitive and dynamic world economy based on knowledge, capable for viable economic growth with better work places and greater social cohesion". Competitive advantage in "new economy" has passed from material and financial assets on (to) non-material and non-financial belongings. The key challenge for 21st century companies is knowledge defining, measuring, advancing, valuing and controlling.

Characteristics of economy based on knowledge are:

- knowledge is used as input and as output,
- in the most developed countries i the world, more than half gross of domestic product is based on knowledge,
- high technology Industries nearly have doubled their share in output in last two decades, while services based on knowledge increase faster, too,
- in new employing number of " knowledge " workers brings on an overage 80% of new jobs, and
- increasing of information and knowledge portions in production technologies, but in products, too.

JEL classification: D8

Keywords: knowledge management

1.Knowledge controlling-what is this ?

Knowledge controlling is the process of searching, organizing and using selected information and experiences, whether they are in formal shape or they are hidden in people's heads with intention to be applied there, where they can help in problems solving.

Knowledge controlling is a discipline that stimulates onto systemic access to defining, controlling and exchange of informatics belongings of a company. Informatics belongings includes base datas, documents, rules and procedures, as formalized knowledge and individual experiences of employees. The most important reasons because of which it is necessary to access to the knowledge controlling in systemic way are:

- Knowledge controlling is a complex of processes that help at knowledge assimilation,

expansion and use (Newman, 1991),

- Knowledge controlling is the process of searching, organizing and using selected information and experiences, whether they are in formal shape or they are hidden in people's heads with intention to be applied there, where they can help in problems solving (Justin Hibbard),
- Because of fast changes in production technology, politics and in legislation, it is the last moment for organizations to get necessary new knowledge's,
- Because of fast development the greater part of knowledge in organizations becomes fast outdated.
- Reducing number of employed because of rationalization and reducing of expenses, leads to loss of knowledge for organization. Because of that is necessary organized access for knowledge storing,
- Knowledge gives competitive advantage to organization, and
- Fast development of IT (informatics technology) enables much better support to the processes of knowledge controlling.

The process of creation, coordination and storing, transport (transfer) ands application (reusing) (of) knowledge in order to increase organization efficiency. It refers to people, culture, values, technologies and practice.

The development of knowledge controlling gives an interesting example of approaching informatics services to business activities, in wider sense. The concept of knowledge controlling comes from demands of economy. Striving to find the way in order knowledge to become capital, many systems try to transform themselves from abstract category in concrete, measurable value. Such efforts are directly connected with new concepts: from informatics and technology processes as far as new business philosophy. Market totality points out in the foreground knowledge as essential value of successful companies. Qualitative controlling of knowledges hidden in company becomes imperative of successful business operation. According to some estimations even 70-80% employed in organizations have hidden knowledge (tacit). It concretely means that most of nowadays organizations do not know what they know. In literature about knowledge controlling mainly are considered problems from philosophical, organizational, respectively from informatics aspect. Generally that literature emphasizes role of training and advancing performances in creation and controlling of knowledge system, there is little of that contents which give practical advices for putting in motion and leading such projects. In businesslike background organizational knowledge becomes chief trump for market prestige.

From the other side, **Brian (Bo) Newman** from **The Knowledge Management Forum** says that "Knowledge controlling is the collection of processes controlling creation, by separating and using knowledge". Less formally, knowledge controlling presents system for knowledge controlling in company. Consequently, controlling all knowledge resources, so to enable faster access to knowledge and its manifold using, usually uses modem information

technologies. The aim of knowledge controlling is to classify and categorize according to in advance (pre) destined model for knowledge description (ontology), for given company, what enables to use stored knowledge in the best possible way. Knowledge sources vary depending on concrete industry and application, but mainly comprise various manuals for work, letters, service reports, clients' answers, as well knowledge obtained in various working processes. Various kinds of modem (information) technologies can be used for implementing management system by knowledge: e-mail, data bases, **data warehouse**, systems for support to group work, " **Internet browsers**, internet and intranet, expert systems, systems based on knowledge, as well intelligent agents.

Industrial culture	**Knowledge culture**	
Organizatin	Hierarchy	Teams and networks
Focus	Profit	Buyer
Culture	Responsibility inspection	Division of responsibility
Key measurements	Efficiency	Effectiveness

2. Setting of knowledge infrastructure

Knowledge infrastructure is a system for support, that consists of gathering of organizational structures and directives and (technical and non-technical) means that support learning processes necessary to realize knowledge policy aims of an organization in an efficient way. Knowledge infrastructure depends on established knowledge policy and of structure of level (in terms of culture) of working background (confidence of employed, readiness to "divide" knowledge with others, possibility to stimulate such work etc.). Knowledge infrastructure is set on the basis of executed knowledge controlling of existing informatics infrastructure in company.

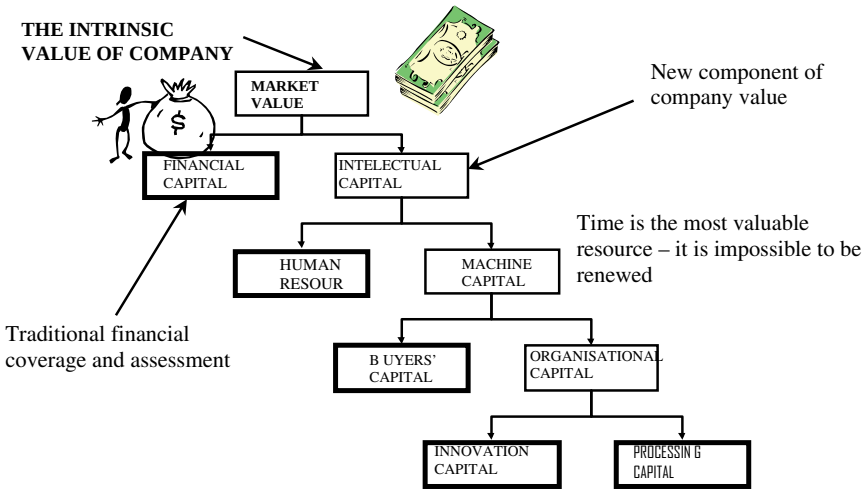
Knowledge comes from intellect during work. It is totality of all that has been learnt, found out or deduced. Knowledge is fluid mixture of formed experience, worth, connected information and expert opinions that provides frame for evaluation and including new experiences and information. This originates and is used in minds of experts. In organizations, knowledge is often stored not only in documents or archives (knowledge bases) but also in organizational routines, processes, practices and norms. Knowledge is necessary for good concluding, respectively for identification and understanding of cause effect relations that influence on business activity of organization, and so on the ability of its future prediction. Knowledge generates from information in the same way as information generate from data. Information, in order to become knowledge, must be transformed: by consideration, comparing, connecting and by cause-

effect connection. One of reasons why knowledge is more important than data and information is its ability to stimulate to action. Knowledge originates on experience basis, respectively cognitions from past on which basis one may observe new events and situations. It helps in understanding and judging complex situations, too.
Knowledge classifications are important because in their directives are expressed aims of learning. Learning aims are the first elements of curriculum system from which one derives appropriate programs, suitable procedures of teaching and learning as well procedures of valuing.
Gagne's system of knowledge categories is hierarchically organised according to transfer value of separate kinds of knowledge. The least transfer value have specific verbal information, id est, factographical knowledge, and the greatest value cognitive strategies.

1. ***Verbal information*** are facts, respectively data and statements that are stored in long-lasting memory. Verbal information make ***declarative knowledge***. It may be ofdifferent complexity-from simple factographic knowledge up to the knowledge of complex theoretical constructs.
2. ***Intellectual skills*** are knowledges of how something is performed or achieved. It is procedural knowledge which according to its complexity varies from simple language skills, as composing sentences, to complex engineering skills or skills of scientific researches.
3. ***Cognitive strategies*** are the most important intellectual skills. They are competence for controlling one's own cognitive processes: learning, memory and opinion. With metacognitive knowledge we follow our own cognitive process, so they hasten learning.

3. Good knowledge controlling

They key of good knowledge controlling system is its structuring. Without structure for knowledge classification - directing only to its distribution - we should be drowned in the sea of useless data. The way how one organises, marks and controls knowledge is critical for functions of work place, themes, products, stages in processes or procedures. Authority in the field of knowledge controlling Thomas A. Stuart has calculated that at one time products expenses have been 80% for material and 20% for know-how. Nowadays that relation is 70:30, but in favour of knowledge. Swedish insurance company Scandia has even appointed manager for intelectual capital whose only one duty is to coordinate the intelectual potential of the company. Process of creation, coordination and storing and application (repeated using) of knowledge in order to increase efficiency of organisation. It refrs to people, culture, values, technologies and practice.



Picture 1.Value structure of company

Accesses to knowledge are:

- Technological access - observes the problem of knowledge controlling from technological standpoint and its **emphasis** is on better access to information, especially to advanced methods for obtaining and using documents (hyperlinks, data bases, text search and the like). Key role play network and communication technology, Internet, intranet, groupware,
- Culturological access -The necessity for fundamental change of businesslike culture and human behaviour is stressed, one insists on education, creativity and innovation ("Organisation that learns"),
- Evolution access - neither unconditionally denies existing values nor prejudices new concepts. The key of successful knowledge controlling is in support to managementand employed, deliberate implementing of new technologies into existing system, as well cadres competence and raising level of organisational culture.

Why is knowledge controlling necessary? There are many reasons: market is being globalized, rate of innovations raises, products and services are more and more complex, terms for knowledge absorbing are short, there is general trend for reducing number of employed, fluctuation of people, rotation of work places...

For many companies, knowledge controlling concretizes in four key fields:

- ***Innovatively***- finding out and implementation of new ideas, organising people in "virtual" developing teams, creating forums for cooperation and exchanging of ideas, and all that out of time and space restrictions,
- ***Speed of reaction***- is connected for disposability of information in organisation and to ones that need them and when they need them, so that they would solve clients"requests faster and more qualitatively. It implies recognizing even weak external signals in striving on which one should react soon after in order to achieve competitive advance,
- ***Productivity***- comprising and division of the best businesslike practice, as well otheruseful knowledges with the aim to annul redundant activities and reducing time for problems solving,
- ***Education***- constant development of skills and knowledges of employed through "on-line" trainings during work, distance learning, as well with other methods for raising capability level for better doing jobs.

Today one differs organisations in the world according to that what they know. Knowledge possessing can produce continual advantage. Even if competition reach quality and price, company rich with knowledge, during that period achieves new level of quality, creativity and efficiency.

3. Gaining of knowledge

There are several ways for knowledge gaining: acquisition, research, connecting, adjustment and networking.

- ***Acquisition***- the most direct and often the most efficient way of acquirement is its buying-respectively buying organisations or individuals that possess it. Organisations are bought because of various reasons: accomplishing additional incomes, branching business operations or assortment of products, opening new markets, and more often because of acquirement of knowledge, especially that one because of higher management. Knowledge may be hired out not only bought. Hiring out of knowledge really is hiring out its source. Recruitment of consultant for guidance of project is hiring a person with necessary knowledge, and it will remain as a value in organisation after hi s leaving.
- ***Research*** - one of ways for knowledge gaining is also setting up of special teams for research and development. The good of such teams is that they are not in principle burdened by short-term profit aims, so creativity and inventiveness are at prominently higher level than in other parts of organisation. One should, however, stress, that such method is rather expensive, effects are slow and uncertain, and implementation in real conditions is very complex.
- ***Combination*** - Combining people with various know ledges and experiences consciously produce complexity, sometimes even conflict situation

with ultimate purpose of new synergy creation. Innovation is born in borderline areas of human meditation. People with various expert knowledges combined can generate very creative solutions. Although it may give extraordinary results, such method is very demanding in relation to necessary time and efforts to harmonize group members so that they begin to give results.

- ***Adjustment*** - new competitive product, new technologies, social and economic changes request from organisations their understanding and adjust to them.

Capability for adjustment is based on two basic factors:

1. infrastructural ability of executing job in other way, and
2. readiness for constant changes

One should stress that here is spoken about people which must accept fast new knowledges and skills, and also change existing work method.

5. Learning of interests and habits

Interests are separate kind of values. They are specific. An individual is preoccupied by a concrete activity. He deals with it mentally (in thoughts) or practically. In contrast to attitudes, and like values, interests express only positive relations (there are no negative interests), they are more general and their motivation structure is more expressive than with attitudes, so individual is more intensively obsessed with them, than with attitudes. Interests may be active or passive. According to contents, one can differentiate interests in view of field of activity (professional and non professional interests). Because of strong motivation activity, interests are necessary to be developed and directed by education. In education of grown - ups, interests are important because they produce motivation for education, and with education are formed and intensified professional and non-professional interests of grown-ups. Interests are developed by all forms of learning: with stipulation, imitation and inspection.

Habits are automated activities, learnt motivation human properties for which is essential structure of behaving and they mark proportionally lasting action tendencies. In neobehaviouristical conceptions they are essential units of behaviour. ***Habit is a learnt tendency of an individual for defined behaviour in a definite specific situation.*** For habit is substantial that it is a learnt tendency for reproducing of a defined, learnt behaviour. In other words behaviour may be learnt, but not habit unless it is learnt tendency of its reproducing in certain situation. Many habits of the same kind may be integrated into a characteristic that becomes unique general habit. So, for example, characteristic of neatness contains sequence of specific hygienic and other habits. ***The difference between habit and attitude*** - in habit is less expressed emotional structure, but more motivation one (behavioural). Namely,

it is possible to possess habit according to which subject has negative attitude (different dependencies) but he / she has not willpower to resist them. Habits are result of learning although there are result of learning although there are genetic dispositions for some of them. They are dominantly acquired by instrumental stipulating, i.e. by rewarding wanted behaviour, and with it, it is strengthened according to "effect of law". Habits are gained also by intended and unintended imitation of model. One can break off damaging habits by the procedures of "behaviour modification".
As modern theory of learning that connects knowledge: how to lead a pupil from starting up to the wanted state of his cognitive and conative properties, it is substantial structure of modern curriculum theory. Hence curriculum theory integrates and gets to know also other educative (educological?) disciplines, so it applies them at microlevel of educational - upbringing system.

6. The Challenge of Knowledge Controlling System

In most cases, critical factor is capability of people for knowledge division. There appears the question: If someone has already got knowledge, why would he divide it with others, why would not he keep power and success only for him? The simplest and fastest way for transfer of knowledge is to find persons in organisation that possess it in smaller organisations, in those large ones, with functional, hierarchial and geographical division it is not aplicable. Therefore it is necessary to establish mechanisms for institutionalization of collecting, organising, work and developing of knowledge in all segments of organisation. Those mechanisms can be changed in two directions:

1. Those who provide direct communication and change of knowledge among individuals,
2. They who collect and store knowledge to use it when it is necessary.

Establishing high level of organisational culture is one of necessary assumptions for knowledge controlling. Various organisations have in different ways tried to stimulate ability of employed to knowledge division. It is no secret that "knowledge is power". The fact is that knowledge controlling has political character, too. If knowledge is connected with power, money and success, then there are also lobbyings, intrigues and various behind - the - scenes games.
Providing for quality and updating of information. Institutionalized mechanisms of knowledge division absorb and store knowledge with essential aim of its conversion into organisational capital. On one side it presents enormous potential that provide transparency of knowledge, while on the other side danger is in "information overdosing". Therefore central knowledge basis

(repository) has to be carefully reorganized, maintain and update. Advantages given by knowledge controlling are recognizable only when information begin to be used at the level of whole organisation.

Implementation of the system for knowledge controlling. The price of implementation and use of knowledge controlling system may be very high. For example Me. Kinsey and Company spends cca 10% of turnovers for knowledge controlling. Those means are very significant, one remarks. But, it is quite possibly that the same means would be spent on ignorance - wrong decisions, iteration of jobs that have not been done well first time, mitigation of negative consequences with unsatisfied buyers.. .

How much of income has been directly or indirectly lost because even well done job has not been done more better.

There are two main strategies for implementations of the knowledge controlling system:

- Codification - uses central basis of documents (repositories) where are stored documents and patterns that can be again used and modified according to needs of future projects (Andersen Consulting, Ernst & Young).
- Personalisation - is connected with persons that have developed knowledge and they divide it exclusively through personal contacts. The purpose of computer and network infrastructure is to help people in knowledge exchanging, not its storing (Mc. Kinsey, Bain).

Of course, it manifests and confirms with the one because of which everything began – with buyer.

Information that may be put into knowledge bases:

Organisational data	**Politics Documentation and procedures Proceedings Reports**
Clients' dana	**Lists of existing buyers Lists of potential buyers Relations with buyers (activities,objects, projects)**
Data about products	**Brochures Catalogues Manuals Technical Documentation Price Lists References and Buyers' statesments**
Data about staff	**List of staff Courses Memberships**

If investment in knowledge controlling evaluates correctly, significant organisational benefits may be achieved:

- expert knowledges and necessary information are available to all - capability of repeated using of acquired knowledge reduces expenses, stops repeated peoplearrangement at somewhere already solved problems and again contributes wort to organisation.

- getting notices and work places rotations do not disturb businesslike process-accessto expert knowledges makes organisation not so vulnerable during work place rotation.
- instruction time and schoolings of existing and new workers is shorther – higherlevel of organisational knowledge and culture enables shorter and more efficient cycle of cadre education.
- higher level of cadres sensibilities to buyers' information and other market signals-educated and competent staff may better recognize market signals, even those weaker, and so it can better react on them.
- buyers' requests are solved significantly faster and more qualitatively – problems are solved better, and it brings more pleasure, and with it is higher level of buyers' loyality.
- staff that qualitatively and well works is motivated - creating competitive, victorious sense in organisation additionally improves performances of organisation.

7. Intelectual capital

Many of us keep confusing concepts of knowledge controlling and intellectual capital. The latter is an attempt of adding financial value to organisational knowledge (personal and codified). Although one value calculation of intellectual capital connects with knowledge controlling, focus is however on financial, not on controlling categories.

Intelectual capital of organisation may be divided in ***human capital*** (knowledge, ability,
inventiveness, innovation of employees) and ***structural capital.*** The latter implies buyers as capital (buyers' quality, pleasure, loyality, sensibility to changes of prices) and ***organisational capital.*** The latter is again divisible into ***capital of innovations*** (copyrights, patents and the like) and ***capital of businesslike processes*** (standards, procedures, work instructions etc.).

There are a sequence of techniques that can help to valorise value of non-material capital, including also intellectual one: Relative value appraisal, Balanced Scorecard, Model Competency Follow-up of subsystems performances, Benchmarking, Bussiness like valorization, Audit of businesslike process, Knowledge Bank etc.

Knowledge controlling is complex discipline, and it is very important expectations to be placed in right way. Changes can not be realized fast because they include human factor and people's beliefs; expecting fast changes is unreal. Knowledge controlling is also risk investment because it includes a sequence of other disciplines and requires a quite new access and way of thinking. At the some time, in rival sense, expenses of non-investment in knowledge controlling system may be significantly higher that investment itself. Knowledge controlling is not a notion that defines only learning process, but all

strategically using of knowledge in order to achieve higher level of buyers' pleasure and better market positions. Longterm effect is that every individual in organisation constantly learns, enjoys in his work and becomes every day more and more valuable to his organisation.

8.Promgram of knowledge controlling

The knowledge controlling project may be applied and established in company through three following phases:

1. development of thorough infrastructure, human and organizational assumptions for knowledge controlling,
2. identifying and development of fields of critical knowledges for businesslike success of company,
3. linking internal (company) knowledge with knowledge accessible in background, and which is considered relevant for company functioning The most frequent reasons because of which expected advantages of knowledge controlling are not in full realized, as well are:

- less users' understanding due to lack of Communications,
- daily use is not integrated into businesslike practice,
- less time for learning system is too complicated,
- lack of training,
- users do not see private benefit in use,
- advanced management does not support project.

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LIGHTHOUSES AS A PART OF TOURIST OFFER BEING SPECIFIC TOURIST DESTINATION

Mate Perišić

Abstract:

This paper presents Croatian lighthouses as a unique tourist category on Croatian and European tourist market and its contribution to Croatian tourist offer in general

JEL classification: l83

Keywords: lighthouse, tourist offer

1. INTRODUCTION

Lighthouses on Croatian part of the Adriatic are beautiful stone buildings inherited from Austrian – Hungarian monarchy. Lighthouses are objects that serve for navigation at sea. They emit lights for orientation and safeness of sailing, especially at night and in severe weather conditions. Lighthouses are usually built on hardly accessible solitude Adriatic places exposed to extreme influences of sea and wind. Their longevity should have been assured by thick white stone walls and they should have had enough space to put up numerous crew.

Lights that were used by ancient sailors for the purpose of warning on dangerous reefs were obtained from wood and from the 16th century from coal. Two centuries later, coal was replaced by gas and later on by electricity. Through further development of technology, at the end of 90ies of the last century lighthouses became automatically operated and abandoned by their crew. Many of them became ruined through years.

The lack of financial means for maintaining of lighthouses that are fully or partially abandoned led to an idea to incorporate them into tourist offer by building of apartments. Commercialization of such facilities will make profit and earn financial means necessary for their maintenance. Furthermore, exploitation of lighthouses through tourist activity contributes to their

protection and revitalization. Their involvement in tourist offer would not obstruct their primary role in assuring the safety of sailing.

This paper presents Croatian lighthouses as a unique tourist category on Croatian and European tourist market and its contribution to Croatian tourist offer in general. This activity is carried out by the company Plovput Ltd. owned by the Republic of Croatia. This company is also maintaining waterways on the eastern side of the Adriatic Sea.

Plovput Ltd. is the first one to realize the meaning of marketing for the non-profit institutions, thus applying and developing marketing methods from the profit sector domain (Non-profit sector refers to organizations that in their primary activity do not make profit, working in the area that cannot be always organized in a commercial way. If making profit, such organizations do not distribute it. They have their own management board. This term usually refers to organizations that provide different public services. Non-profit making is in relation to privileged taxation status and receiving donations as tax benefits). Marketing methods for promotion of Adriatic lighthouses in the function of sustainable tourism (Definition from Travis and Ceballos-Lascurain: Održivi turizam, 1993) help maintain protected nature resources and cultural heritage.

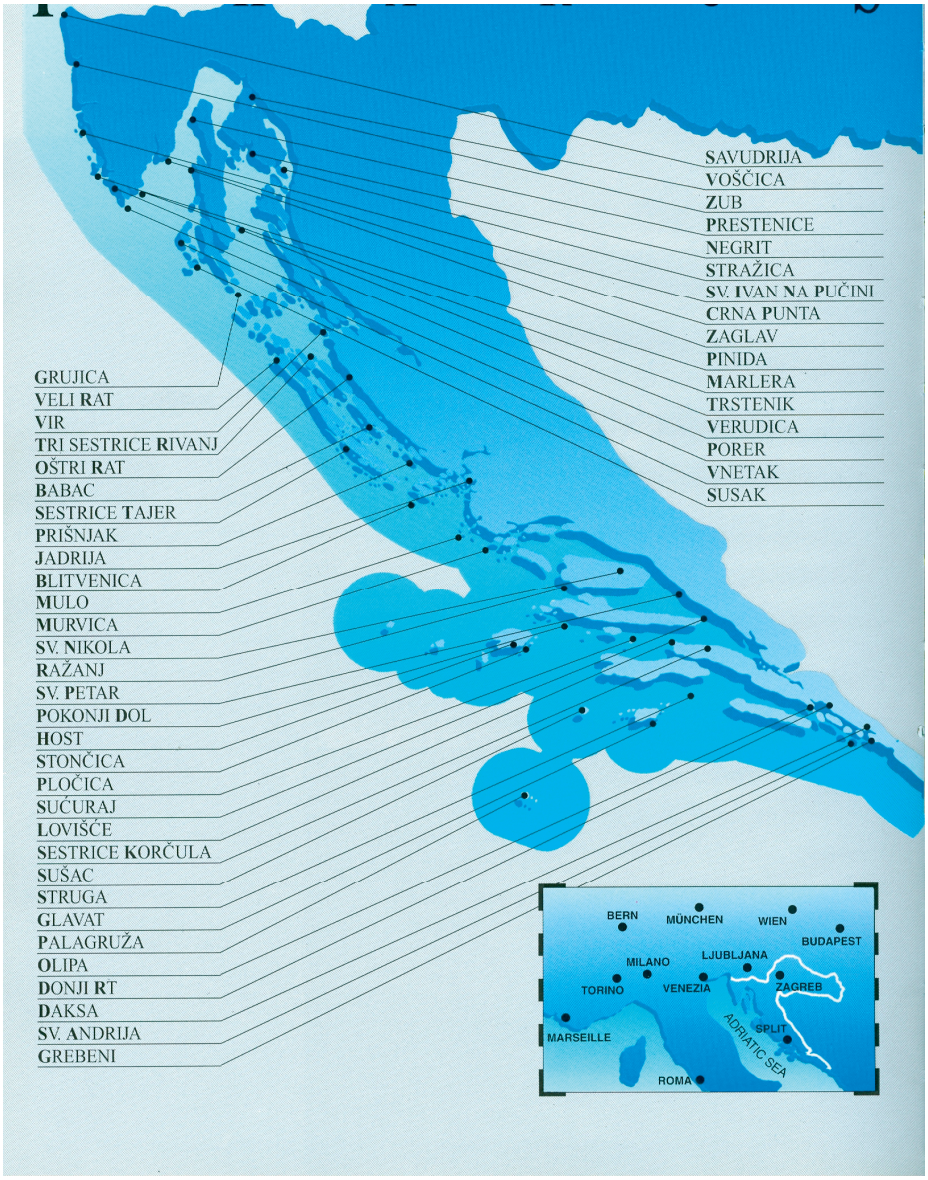
2. HISTORICAL AND GEOGRAPHIC CHARACTERISTICS OF CROATIAN LIGHTHOUSES

Eastern Mediterranean is a cradle of Western civilization. Phoenicians as the first sailors and merchants were predecessors of Greek and Roman civilizations. Fire lit at harbor gates, on hills and similar elevated places was serving as orientation for navigators. The fist and most known lighthouse is Pharos, the one of seven miracle of the world. It was the highest building of its time which light could be seen from a distance of up to 50 km from the Alexandrian coast.

In Antique times, Greeks and Romans built lighthouses on Eastern Adriatic coast, i.e. on the islands of Hvar and Vis, on the Marjan peninsula and on the entry into the Salona harbor, all of which were necessary if considering developed trade and sailing on these ways.

In the Middle Ages, so called „church lights" served as lighthouses and sailing navigation and were maintained by monks. These lights were lit usually on church towers situated on the coast. They were dedicated mostly to St. Nicolas, a patron saint of sailors.

In the period from 1805-1918, all navigation positions relevant for navigation safety were marked by some sort of sea indicators, which were serving for sea traffic in times of the Austrian Hungarian monarchy. The idea to build lighthouses on the Adriatic Sea originated from the state minister, count Metternich. The first lighthouse was constructed in 1818 at the Southern-Western point of the Croatian coast, the Savudrija cape. In the following eighty years there were 65 lighthouses built on islands and capes. During the 2nd World War many lighthouses were damaged or destroyed and many housekeeping families were killed or disappeared. Nowadays there are 48 operating lighthouses in the Republic of Croatia, as shown on the following picture: **Savudrija** (at the Savudrija cape), **Zub** (between Novigrad and Poreč), **St. John on the open sea** (on the island in front of Rovinj), **Pinida** (the island of Veli Brijun), **Verudica** (Pula), **Porer** (on the cliff near Premantura), **Marlera** (between Medulin and Ližnjan),**Crna Punta** (near Rabac), **Susak** (on the island of Susak), **Vnetak** (on the island of Unije), **Zaglav** (small island in the middle of the Western side of the island of Cres), **Prestenice** (island of Cres), **Oštro-Kraljevica** (cape Oštro), **Vošćica** (the North of the island of Krk), **Negrit** (the southern side of the island of Krk), **Stražica** (the island of Prvić), **Trstenik** (on the same named island), **Grujica** (on the same named island), **Veli rat** (Dugi otok), **Vir** (on the same named island), **Tri sestrice** (Rivanj), **Oštri rat** (Punta mika), **Sestrice Tajer** (Kornati), **Babac** (on the same named island), **Prišnjak** (small island near Murter), **Jadrija** (Šibenik), **Blitvenica** (on the same named island), **Mulo** (on the cliff near Rogoznica/Šibenik), **Murvica** (on the same named island), **Ražanj** (on the island of Brač), **Pokonji dol** (on the same named island near Hvar), **Stončica** (the island of Vis), **Host** (on the same named island at the entry into the harbor of Vis), **St. Peter** (Makarska), **St. Nicolas** (Pučišća on the island of Brač), **Sućuraj** (the island of Hvar), **Lovišće** (Pelješac), **Pločica** (on the same named island near the island of Korčula), **Sušac** (on the same named island), **Palagruža** (on the same named island), **Struga** (the island of Lastovo), **Glavat** (on the same named island in the Lastovo channel), **Sestrice Korčula** (Eastern of Korčule), **Olipa** (on the same named island within the Elaphiti islands), **Donji Rt** (Slano), **Daksa** (on the same named island at the entry into the harbor of Gruž), **Grebeni** (same named cliff near Dubrovnik) and **St. Andreas** (on the same named island).
All 48 lighthouses have an area of 10.398 sq.m., of which 83% is a living area and 17% refers to by-side facilities.


SAVUDRIJA
VOŠČICA
ZUB
PRESTENICE
NEGRIT
STRAŽICA
SV. IVAN NA PUČINI
CRNA PUNTA
ZAGLAV
PINIDA
MARLERA
TRSTENIK
VERUDICA
POREŠ
VNETAK
SUSAK
GRUJICA
VELI RAT
VIR
TRI SESTRICE RIVANJ
OŠTRI RAT
BABAC
SESTRICE TAJER
PRIŠNJAK
JADRIJA
BLITVENICA
MULO
MURVICA
SV. NIKOLA
RAŽANJ
SV. PETAR
POKONJI DOL
HOST
STONČICA
PLOČICA
SUĆURAJ
LOVIŠĆE
SESTRICE KORČULA
SUŠAC
STRUGA
GLAVAT
PALAGRUŽA
OLIPA
DONJI RT
DAKSA
SV. ANDRIJA
GREBENI
BERN
MÜNCHEN
WIEN
BUDAPEST
MILANO
LJUBLJANA
TORINO
VENEZIA
ZAGREB
MARSEILLE
SPLIT
ADRIATIC SEA
ROMA

3. THE PROJECT „STONE LIGHTS"

Plovput Ltd. Split is a commercial company owned by the Republic of Croatia that takes care of waterways of inner sea and territorial sea within the Republic of Croatia, builds and maintains facilities needed for navigation safety, among which there are lighthouses as well. (Plovput Ltd. works on principles of social responsibility of corporate sector: responsibility of corporate sector towards their employees, stakeholders and owners, management boards, consumers and suppliers, natural environment, communities in which they carry out their activity or sale their servides on the US market are usually called corporate philanthropy; in British tradition it is described by the term corporate citizenship, while in the European context the common term is corporate social responsibility. Although there are slight differences in these terms, they are used synonymously.)

From Northern to Southern part of the Adriatic there are scattered lighthouses with massive towers and large stone buildings. Since they were built in the 19th century, lighthouses were maintained by housekeeping families. Men took care of technical craftwork and women cleaned the house and maintained the environment. By becoming automatically operated in the 90's of the last century, the need for housekeeping families became reduced, so lighthouses lost their housing purpose.

Although lighthouses are cultural and historical monuments, the state did not allocate means for their maintenance, so Plovput Ltd. took over the management of the lighthouses. They started a project called „Stone Lights", based on positive experiences in lighthouse maintenance, integrating history, ecology and tourism. The project intention was to commercialize lighthouses and assure means for their maintenance and restoration. In contemporary time of noise and stress, holiday in a lighthouse provides a unique experience of sun, sea, solitude and peace, which is impossible to have in an everyday life. (http://www.poslovna-znanja.hr/default.aspx?id=27)

It was necessary to determine potentials of commercial exploitation based on market arguments, and taking into consideration the size, building conditions, accommodation capacities, position and attractiveness of the building, necessary investments, investment cost benefit, etc. After having completed the analysis, the company started to include lighthouses in their tourist offer. Up to present, they are offering accommodation in 12 lighthouses: Savudrija, Rt Zub, St. John, Porer, Veli rat, Prišnjak, St. Peter, Pločica, Struga, Sušac, Palagruža i St. Andreas, which have a total of 21 apartments. The intention is to extend the offer through inclusion of even more lighthouses. In 2009 all lighthouses are rated 3-star, except for the lighthouses Veli rat and St. Peter that have 2 stars.

Pre-season lasts from May 30 – July 5, full season lasts from July 05 – August 30, and post-season lasts from August 30 – September 20. Prices depend on the season period. Accommodation can be booked for a minimum of one week in the season period, while in other times of the year it can be booked for a minimum of three days (except for Palagruža and Sušac). The price for lighthouse rent includes accommodation in an apartment and an extra accommodation in case a transfer to the lighthouse is not possible due to some unforeseen events. Groceries should be provided by guests themselves. Rent of a boat or organization of excursions can be arranged with a lighthouse keeper at extra charge (at the lighthouses St. John, Veli rat, Sušac, Palagruža, Struga) or with persons in charge for transfer (Porer, Pločica, Prišnjak). Transfer to a lighthouse on the island of Palagruža is provided by Plovput Ltd., while to other lighthouses it is provided by other companies or persons. All lighthouses are connected with a network of mobile phone signals.

4. MARKETING OF THE LIGHTHOUSE TOURIST OFFER

The Adriatic Sea is an authentic civilization cradle from 4000 b.C. to date. It is one of the bluest and the clearest seas in the world. It is also a very warm sea with average temperature of 15 °C in the winter period, and of 22-27 °C in summer. Average air temperature in the Adriatic region is 17 °C, there are 2600 sunny hours on average per year. Croatian Adriatic region is one of the most cloudless parts in Europe. Summer periods are especially pleasant as daily air temperature does not exceed 33°C because of mistral wind. Winter periods are clam and slightly rainy with moist south wind, Sirocco, which blows from South-West and Bora, which is dry and cold wind from North-East.
Climatic and culturological characteristics of Eastern part of the Adriatic are offering great conditions for tourism development. Having in mind all positive facts of the region, the project “Stone Lights” was easily promoted as a specific tourist offer. Promotion intensity was gradually reduced to become publicized only on company’s web pages, as well as on web pages of some tourist agencies that are offering arrangements for holidays on lighthouses. Promotion is also organized through some tourist fairs. Competitiveness is not very strong, as lighthouses as a part of tourist offer are present only in Great Britain and in the Netherlands that have cold seas, thus offering only solitude on lighthouses with exception of sun and sea experience.

There is a clear need to exploit lighthouses through more aggressive marketing activity. However, there is a defensive strategy, as only a small number of lighthouses offers tourist accommodation and this capacity cannot be increased until ownership relations with the Republic of Croatia are not resolved. Related to the promotion of lighthouses in tourism, it should be emphasized that they are attractive in the summer season, however in the post-season period and in

winter promotion should be directed towards potential tourists from Northern Europe, especially yachtsmen and anglers.

Although lighthouses involved in the tourist offer differ in their attractiveness, size, number of apartments, vicinity of tourist destinations and traffic infrastructure, in a marketing sense it is necessary to differentiate the offer (Kotler et al;2006,624) with respect to facilities that are offered to tourists. This is the way to strengthen promotion of lighthouses for tourism purposes, as lighthouses are grouped on a tourist market and offered as such to specific tourist categories. Lighthouses are divided into three groups:

1) Lighthouses at the open sea are located on far-away islands and cliffs, providing solitude and peace to modern Robinsons. While situated on such islands, the dream of having your own island becomes true. Tourists enjoy sea, fishing, diving, exploring the sea world, etc. Lighthouses are usually rented by guests that are aware of wildness charms.
The following lighthouses are offered to tourists:
- St. John on the open sea
- Porer
- Sušac
- Palagruža
- Pločica
- Prišnjak

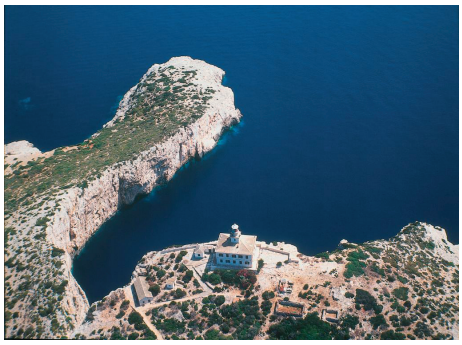
Palagruža and Sušac can be pointed out as being the most attractive in this group.

Palagruža

The most distant Croatian island Palagruža is located in the middle of the Adriatic Sea, between Croatian and Italian coast. It is 52 km away from the Italian coast. Palagruža is rich in historical heritage, flora and fauna species. It is situated 68 NM to the south of Split and 26 NM of the island of Lastovo. The island is 1400 m long, 300 m wide, and 90 m high. The lighthouse was built in 1875 on the top of the island. It consists of one-store building with a lighthouse tower in the middle of the building reaching 109.70 m above sea level. There are two paths leading

up to the lighthouse. It houses meteorological station because of its specific climatic conditions.

Sušac



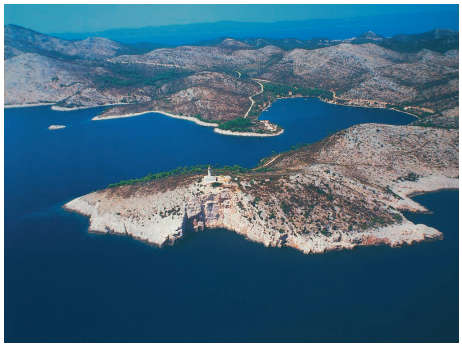
The lighthouse is built on the southern side of the same-named uninhabited island of 6 sq.km, 13 NM to the west of the island of Lastovo, and 23 NM of the island of Hvar. The southern side of the island is extremely steep and rocky, while the northern side is shallow. The lighthouse is a one-store stone building built in 1878 with a tower at 80m above sea level. Nearby there is a berth where smaller boats can be pulled out of the sea.

2) Lighthouses situated on the islands away from island villages are offered to those tourists that wish to have solitude, peace, time for bath and fishing, but also a possibility to go easily to urban villages. They can go shopping and contact with domestic people. Such lighthouses are interesting for the development of nautical tourism.
There are two such lighthouses:
- Veli rat on the island of Dugi otok
- Struga on the island of Lastovo

Veli rat

The lighthouse is located 20 NM to the west of Zadar, on the north-west of the Dugi otok cape. There is a village Veli rat some three km away from the lighthouse, in a long bay of Pantera at the eastern side of the cape. The lighthouse is built in 1849, consisting of ground-floor building with a 40-meter high tower, large backyard and a chapel. It is surrounded by pine forest, many bays and beaches and a berth.

Struga



The lighthouse is located on the same-named cape, in the middle of the southern side of the island of Lastovo, 55 NM away from Split and Dubrovnik. It is 5 km away from the largest village on the island of Lastovo and 15 km from ferryboat port Ubla. The lighthouse was built in 1839 and consists of a large ground-floor building and 20 m high tower, emitting light at 104 m above sea level. There is also a by-side storeroom.

3) Lighthouses on mainland close to urban villages are old attractive buildings providing a specific accommodation, seclusion, great beaches, but also all conveniences of urban places. As they are located on the mainland tourists can reach them by cars, having a possibility to move around for sightseeing.
Such lighthouses are:
- Savudrija
- Rt Zub
- St. Peter

Savudrija

Savudrija is the oldest lighthouse on the Adriatic Sea built in1818. It is also known to be the first lighthouse operated by gas through combustion of coal. It is located near the Slovenian border, 9 km away from Umag and 56 km from Trieste. It is the southernmost and the westernmost Croatian lighthouse, located 36.5 m above sea level with a 29 m high tower. It has three separated buildings with a fenced garden.

St. Peter

St. Peter lighthouse is located on the cape of the St. Peter peninsula at the entry into Makarska harbor, being only 800 m away from the centre of Makarska. It is surrounded by sea and beaches. The lighthouse is a stone, ground-floor building with a low tower in the middle at 11m above sea level. The building is also surrounded by a terrace.

5. ECONOMIC ASPECTS OF TOURIST ACTIVITY

5.1. Costs of tourist activities in the lighthouses

Expenses for renting of apartments in lighthouses are relatively high, as the transfers to and from them significantly increase these expenses. Lighthouses located on the mainland and nearby inhabited villages are better exploited. Lighthouses located on the mainland are connected to local water supply network thus having water supply costs significantly reduced. Water supply expenses on some island lighthouses take up to 50% of the income, while these expenses for lighthouses on the mainland take up only 15 – 20 % of the income.

Lighthouses for renting are burdened with equipment expenses, then expenses for investments, regular maintenance, transport and staff. Maintenance expenses are to be pointed out as lighthouse inventory decays rapidly because of exposure to weather conditions and salt. Amortization rate is thus increased, which affects profit gain.

All apartments in lighthouses are equipped in the same way, and larger pieces of equipment that need electricity (refrigerators, stoves) are operated by propane gas. Other devices in apartments are TV and special lighting devices that use energy saving light bulbs. Joint equipment is a water pump that pumps water from a reservoir to the highest level, from which the water is then distributed on floor units. All electric devices in facilities that are not supplied

with electric network use solar energy and accumulators and also have a possibility to use wind generators.

5.2. Basic economic indicators of tourist activity in 2007

After seven years of experience with tourist activity, the company Plovput Ltd. (http://www.plovput.hr/onama/djelatnosti/tabid/101/language/en-US/Default.aspx) can assess its expenses and income and overall financial success. In 2007 the company gained income of 1,618.000.00 HRK and had expense of 1,350.000.00 HRK, which resulted in the profit of 268.000.00 HRK. With respect to invested financial means for renovation of apartments, cost-effectiveness is quite low. The gained profit is partially used by the company for covering of lighthouse maintenance expenses. Employees in the lighthouses are engaged more effectively.
The following table presents an overview of income and expense in 2007 and afterwards there is a chapter on basic economic indicators of success in tourism.

ANALYSIS OF INCOMES AND EXPENSES FROM TOURIST ACTIVITY IN 2007 in HRK

PP PULA	***No. of apartments/ no. of beds***	***INCOME***	***AMORTIZATION EXPENSE***	***INSURANCE***	***MAINTENANCE EXPENSES (based on a contract – external performers, employees, craftsmen)***	***GROSS SALARIES (all contributions included) and wages for workers***	***OTHER EXPENSES (electricity, water, maintenance material, gas, small inventory, TV pay, travel costs, phone costs...)***	***TRANSFER OF TOURISTS (TO AND FROM THE LIGHTHOUSE)***
PS RT SAVUDRIJA	1/4	131.438	5.054	It refers to the insurance of tourists from the moment of their embark on boat to the moment of their disembark (transfer). Irrelevant of their function as tourist facilities, lighthouses are insured as facilities of sea navigation and these expenses are not included in the analysis.	16.146		11.150	
SVJET. ZGR. EX PS RT ZUB	1/6	145.861	8.794		27.554		12.370	
PS HRID SV. IVAN NA PUČINI	2/8	98.692	10.491		7.384		11.564	
PS HRID PORER	2/8	57.282	7.179		4.747	**	9.031	
PP ZADAR								
PS VELI RAT	2/7	227.882	8.973		16.974		28.254	
PP ŠIBENIK								
PS ISLAND PRIŠNJAK	1/4	96.577	8.582		10.442		10.092	
PP SPLIT								
PS PENINSULA ST. PETER *	1/4	96.831	3.151		8.100		11.897	
PP DUBROVNIK								
PS ISLAND SUŠAC *	2/8	84.402	5.365		4.474		6.630	
PS ISLAND PALAGRUŽA *	2/8	138.595	5.731		8.944		17.803	66.027***
PS RT STRUGA *	4/14	204.912	13.883		22.575		18.299	
PS ISLAND PLOČICA *	2/14	163.841	9.234		12.916		16.706	
APARTMENT RENT ON THE BASIS OF THE CONTRACT								
PS ISLANDTRI SESTRICE – PP ZADAR		29.494	-		-			
PS HOST - PP SPLIT		79.633	12.744		-		340	
PS ISLAND ST. ANDREAS – PP DUBROVNIK		62.633	9.474		-		2.408	
	20/85	**1.618.073**	**108.655**	**7.327**	**140.256**	**871.622**	**156.544**	**66.027**

RECAPITULATION OF THE ABOVE TABLE:

INCOME	EXPENSE	PROFIT
1.618.073	**1.350.431**	**267.642**

Tourist agencies' mediation of 10-15% is already deducted from the presented income. Amortization expense refers to equipment and investment value (works performed for apartment renovation).

***** Based on the Article 12 of the Law on Income Taxation, cultural monuments are not subject to amortization, so the expenses for renovation of tourist apartments is not being amortized. Data used for amortization refer to equipment.

****** Analysis of salaries for employees involved in the tourist activity refers to gross salaries and other wages exempt from tax that are paid out according to the Law on Income Taxation.

Stated expenses are fixed, so if not being engaged in tourist activity, the employees would be involved in the company's main activity. Their engagement in tourist exploitation of lighthouses provides additional financial means that are necessary for the company to cover a part of expenses for maintenance of lighthouses.

******* Tourist transfer expense: 75 hours * 120 EUR = 9.000 EUR * 7.33632 = 66.027 HRK.

BASIC ECONOMIC INDICATORS OF TOURIST ACTIVITY EFFECTIVENESS

Cost-effectiveness (e) = total income (invoiced value of provided services)/expense

Parameter value: total income = 1.618.073 HRK
total expense = 1.350.431 HRK

e>1 = business is cost-effective
e<1 = business is not cost-effective
e=1 business is on the verge of being cost-effective.

Calculation: e=1.618.073/1.350.431 = 1.20 e>1

Based on the obtained result, tourist activity is cost-effective.

Cost-effectiveness (r) = business result/invested capital *100

Parameter value: business result (profit) = 267.642 HRK

Value of basic means for performance of tourist activity = 4.723.428 HRK

Calculation: r (%) = 267.642/4.723.428 * 100 = 5.66%

Obtained result indicates how many units of business result are realized per a unit of invested capital.

6. POSSIBILITIES FOR TOURIST OFFER DEVELOPMENT

While considering possibilities for tourist offer development in lighthouses, Plovput Ltd. examined the following legal models:

- mid-term tenancy of revitalized facility by a national, foreign legal or private subject,
- short-term tenancy of revitalized facility by a national, foreign legal or private subject,
- contractual short-term or long-term lease of particular facility to health institution for educational or research purpose,
- establishment of protected nature parks on some locations.

Apartment rent or long-term tenancy depends on the selection of tender that can be either Plovput Ltd. or other. It is hard to determine profitability of each lighthouse through assessing the expected period of investment return because each lighthouse is a specific facility. Prices for rent of apartments that are of the same size and equally equipped have different prices because these prices depend on lighthouse attractiveness and location. At this time it is not possible to define the way of tourist capacities exploitation or the period of lighthouses' restoration. Investments in restoration of some lighthouses are questionable because of long period of investment return. It can be concluded that investment return is a basis for determination of priorities with respect to further tourist offer development.

7. CONCLUSION

Automatization of lighthouses led to their abandoning by housekeeping families and consequently to their decay. Realization of the project "Stone Lights" resulted in incorporation of lighthouses into tourist offer. Through this by-side activity, the company Plovput Ltd. Split takes care of the lighthouses and gains an extra profit that is further used for maintenance and revitalization of lighthouses that serve primarily for navigation safety.

Cultural-historical valorization of lighthouses and their incorporation into overall tourist offer contributed to Croatian tourist image. There is a more aggressive tourist promotion needed in order to realize better exploitation of lighthouse facilities. While some lighthouses offer solitude on isolated islands, others provide insights into domicile life style on islands, and some offer accommodation on the mainland and possibilities of sightseeing in the nearby area.

Economic aspect of lighthouse apartment renting is specific as expenses are raised in proportion to distance of a lighthouse from the mainland, and water supply costs are quite high on islands. Expenses for maintenance are also high because of specific climatic conditions, i.e. because of wind and salt that cause rapid decay of the inventory. Although tourist activity realized through renting of lighthouse apartments is cost-effective, their exploitation is even more

important because of the gained profit that is further invested in maintenance of other lighthouses that serve for navigation safety.

There is still no comprehensive tourist offer of lighthouses because of relatively small number of lighthouses on the tourist market. In order to crated more complete offer, there are additional investments needed in order to increase capacities and to determine lighthouses as a specific tourist destination in Croatia, especially if knowing that there is no real competitor in Europe.

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Microeconomics, Macroeconomics and Monetary Economics

FROM EMPLOYMENT TO EMPLOYABILITY: THE ROLE OF ACTIVE LABOR MARKET POLICIES IN CROATIA

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Abstract

High unemployment represents striking economic failures that are costly not only to individuals directly affected, but also to the economy and society as a whole. Measures of Active Labor Market Policy (ALMP) - such as training, wage subsidies, public employment measures, and job search assistance - are widely used in European countries to combat unemployment. Croatia, as an EU candidate country, also has a long tradition in ALMP since rising employment is continuously at the top of the Government policy agenda targeting at economic growth and development. The purpose of this paper is to present ALMP and their role in combating the unemployment. Particular attention will be given to the ALPM of the EU and its implications for Croatia as a candidate country. The paper is organized as follows. After introductory remarks, the section 2 provides a theoretical background on the ALMP and relevant measures and discusses the ALMP in the EU Section 3 presents the ALMP in Croatia and discusses its status and perspective. The paper concludes with the section 4, suggesting further research focus, as well as some policy suggestions.

JEL classification: F16, J23,

Keywords: employability, active labor market policy and measures, EU, Croatia

1. Introduction

The unemployment represents one of the major economic and social problems faced by the contemporary society. Many countries of the European Union (hereinafter: EU) have been troubled by high unemployment rates, which has been recognized as a problem for achieving economic and social welfare and translated into creating legislative and institutional framework that will promote greater employment and social cohesion. Thus, the promotion of viable employment is a major component of the EU's Cohesion Policy and activity.
The efforts targeting a reduction in unemployment and its economic and social costs have been the most evident through European Employment Strategy (hereinafter: EES) since 1998 that was articulated in the form of Employment Guidelines adopted in line with art. 128 of the Amsterdam Treaty. The EES was based around four main pillars: improving employability, developing entrepreneurship, encouraging adaptability of businesses and employees to

economic changes and strengthening equality of opportunity and it was later integrated into Lisbon strategy (2000) by setting a target to reduce unemployment, i.e. to reach employment of 70% by 2010, create more and better jobs and thus ensure sustained growth for all EU member states. The mid-term evaluation of the Lisbon strategy revealed that the European economy has been failing to deliver expected performance particularly in terms of employment and job creation and the Lisbon strategy, together with EES got the fresh momentum in 2005 by the Commission shifting the focus from the targets to be attained to the actions to be taken. These actions were built around the objectives of full employment, quality at work and cohesion and delivered under 10 priorities: activation and prevention, job creation and entrepreneurship, adaptability and mobility, human capital and lifelong learning, labor supply and active ageing, gender equality, integration of people at a disadvantage, making work pay, undeclared work, and regional disparities. In another words, the language of employment policy and active labor market programs has denoted a shift from 'abandoning' the traditional goal of full employment to pursue the goal of full employability.

In this context, numerous authors have analyzed interventions on labor market intended to activate unemployed and to ensure employment opportunities to the most disadvantaged groups in the labor market (e.g. Levy, 2005; Lönnroth, 2000; Calmfors, 1995). The labor market activation conveys basically two ideas: (i) people should derive their income primarily from paid employment, as opposed to government transfers, and (ii) the goal of policy is not simply to minimize unemployment, but also to maximize total employment. In other words, in addition to reducing formal unemployment, the goal of activation is to move people outside the labor force – stay-at-home mothers, disabled workers, early retirees, discouraged workers – into the labor force. This shift in goals is reflected in changes in the instruments for measuring labor market performance, such as targets for labor force participation rates or ratios of "active" to "inactive" adults.

Being the EU candidate country, Croatia is placing a great effort to combat the unemployment which has been persistent macroeconomic problem for several decades and which magnitude is again challenged by the current world financial crisis and threatening recession. The Croatian labor market is characterized by a low degree of activity on the part of the population, a high unemployment rate, a pronounced problem with long-term unemployment and a high structural disproportion between supply and demand. Because of the relatively high share of the unofficial economy, there is a large difference between the administrative unemployment rate and that shown by surveys. Analysis of the situation on the Croatian labor market shows that significant structural issues still remained unsolved (such as inflexibility, mismatch between supply and demand with respect to profession and education, and similar). Also, fairly limited creation of new jobs still persists. The employment rates of men and women and the

employment of young people are among the lowest in comparison with the EU-27 (for comparison, see EUROSTAT, 2009) and the attainment of the Lisbon objectives seems fairly distant. Existing problems can be eased inter alia by the active labor market policies (hereinafter: ALMP), i.e. by particular programs of education and training created to overcome individual personal limits as burdens for employment.

2. Active labor market policies

2.1. ALMP definitions and theoretical justification

Labor market policies[1] that address unemployment can be divided into two categories - active and passive. Passive measures include payment of unemployment benefits in the form of unemployment insurance or social assistance and the like, while the active are demand-side measures that are intended to 'activate' the unemployed to enhance their employability.
According to the OECD (1993) classification, active programs are divided into 5 types. Public employment services and administration include services such as placement, counseling and vocational guidance; job-search courses and related forms of intensified counseling for persons with difficulties in finding employment; support of geographic mobility and similar costs in connection with job-search and placement. In addition, all administration costs of labor market agencies (at central and decentralized levels), including unemployment benefit agencies (even if these are separate institutions) as well as administrative costs of other labor market programs are included. Labor market training takes in programs that are intended for special (i.e. vulnerable) groups and include costs of course and sustenance allowances to trainees as well as subsidies to employers' for enterprise training. These measures are divided into two sub-categories – training for unemployed adults and those at risk and training for employed adults. Youth measures include special programs that are focused on having youth making a transition from school to work. These measures include those that are targeting unemployed and disadvantage youth (e.g. young people who do not follow regular upper secondary or vocational education) as well as they support apprenticeships and similar forms of youth training in enterprises through which young people obtain valuable work experience. Subsidized employment encompasses measures that are promoting or providing employment for persons and groups that are denoted as priorities in labor market policy. These targeted measures are divided into three categories: subsidies provided to the regular employment in the private sector, support of unemployed persons starting enterprises and direct job creation (public or non-profit). Measures for the disabled are exclusively focused on

[1] Labor market policies differ from general employment policies since they are public interventions in the labor market that are targeted towards *particular* groups.

people that need assistance for employment or maintaining employment in other than ordinary way. These measures include vocational rehabilitation, i.e. training that is adjusted to their abilities as well as sheltered work and subsidies to regular employment.

ALMP classification based upon Eurostat's Labor Market Policy database (2008) does not significantly differ from OECD classification. There are three different types of interventions that are recognized in the European Union: (i) Labor Market Policy Services (LMP Services) – they include costs of providing services to jobseekers together with all other expenditure of the public employment services; (ii) Labor Market Policy Measures (LMP Measures) – they cover active interventions to help unemployed and other disadvantaged groups through training, job rotation/job sharing, employment incentives, supported employment and rehabilitation, direct job creation and start-up incentives); and (iii) Labor Market Policy Supports (LMP Supports) – they include out-of-work income maintenance and support, as well as early retirement.

Theoretical justifications for the provision of ALMP derive both from equity and efficiency reasons. Equity and redistributive reasons are at the basis of targeting these policies to the most disadvantaged in the labor market as the lack of employment appears to be one of the major pathways to poverty in Europe. Efficiency arguments are based on the mobilization of labor supply both in quantitative and qualitative terms that may improve the functioning of the labor market and increase productivity without increasing wage pressures. In another words, they increase labor market efficiency, productivity, employment outcomes and earnings for the unemployed. According to Calmfors (1994), the benefits can be summarized as: (i) facilitating matching efficiency in the labor market through more active job search; (ii) maintaining labor force participation by maximizing the effective labor supply which applies downward pressure on wages and increases employment; (iii) reducing welfare losses from unemployment by increasing the probability of employment, guarding against future unemployment and producing a higher wage than would otherwise be obtained; (iv) increasing labor productivity through skill formation due to formal training or counteracting skills atrophy through job creation programs; and (v) speeding up job search due the 'work test' effect of ALMP that make unemployment less attractive.

Potential drawbacks of the ALMP cannot be ignored. Fay (1996) points out at several disadvantages: most programs are vulnerable to deadweight loss, displacement and substitution effects; all ALMP are susceptible to attachment effects where participants reduce job search efforts in order to concentrate on program completion; a particular concern with targeted public sector job creation schemes is the possibility of stigmatization of participants; ALMP programs have the potential to crowd out private sector jobs if conditions of

additionality are not imposed effectively.[2] Despite these potential difficulties that ALMP can cause, their net impact cannot be inferred from economic theory since there are countervailing effects (Calmfors, 1994; Fay, 1996).

2.2. ALMP evaluation: limits and findings

A large variety of different ALMP programs exists among EU member states and other European countries. Their effects and successes have been subjected to the econometric evaluation yet until today there is no conclusive cross-country evidence exists regarding "what program works for what target group under what (economic and institutional) circumstances?" (Kluve, 2006).
The literature review (e.g. Boeri and Burda, 1996; Hujer and Wellner, 1998; Koning 2001, Dekker et al., 2002) reveals three types of evaluation: meta-analysis, microeconometric evaluations and macroeconomic evaluations.[3] The study by Kluve et al. (2007) used a meta-analysis[4] to evaluate the outcomes of more than 100 ALMP programs in order to identify the types of measures that seem to perform better in Europe and under what circumstances. The analysis has shown that the employment incentives and PES are in between 40% and 50% more likely to positively impact the employment rates that training programs. Interestingly, direct job creation programs in the public sector are 30% to 60% less likely to make a positive impact on employment outcomes than training programs. Out of all ALMP programs, the least successful, i.e. ineffective, are youth programs. Microeconometric evaluation can give a valuable insight into clausal impact of programs, which cannot be obtained using macrodata. Despite their value, these evaluations are still in the nascent stage in the EU. Macroeconometric evaluation is also important especially when relatively large programs in terms of either spending or participants are involved. Their importance comes particularly from the potential size that indirect effects can have and which can even lead to a reversal of the initial findings on program effectiveness based solely on microeconometric evaluation, i.e. program evaluation. The few macroeconometric studies available suggest that total spending on ALMP has no significant impact on aggregate labor market variables, such as unemployment and employment rates. Spending on training policies turns out to be the sole ALMP measure having a positive impact on aggregate labor market variables.[5]

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[2] Maré (2005) offers more detailed explanation on indirect effects of the ALMP.
[3] The exstensive review on emirical studies related to the ALMP evaluations can be found in Kluve (2006).
[4] *Meta-analysis* is a technique for analyzing and summarizing the results of different studies, each of which answers the same question (in this case, the size and direction of the impact of a particular ALMP on post-program employment prospects).
[5] Source of data: European Commission: Employment policy: active labor market policies, available at

It is interesting to notice that the results of microeconometric evaluations and of some macroeconometirc studies show certain contradictions. There are cases when program evaluations (microeconometric evaluations) find that the training program has rather mixed effects, but almost always a statistically insignificant impact on participants' future employment prospects. By the same token, macroeconomic studies tend to find that training is the only category of ALMP that has a significant positive impact on aggregate labor market outcomes.This apparent paradox can be solved by extending the observation period to include the post-participation effects of training.

2.3. ALMP expenditures in the European Union

Based upon the statistics of the Eurostat's Labor Market Policy database (2008), EU-27 spent 1.9% of GDP on labor market policies in 2006, but the level of expenditure among countries have been significantly varying. Among the EU countries with the highest LMP expenditure were Germany and Belgium with the percentage of nearly 3%, while the lowest percentage of less than 0.5% was recorded in the Baltic countries (e.g. Estonia, Lithuania, Romania, and Czech Republic). Majority of countries had expenditure on LMP lower than the EU-27 average. Even tough the EES calls for the strengthening of spending on ALMP, the EU countries have not made a significant shift from passive to active measures. On the total expenditure on LMP, 57% was spent on unemployment benefits, more than 26% on active LMP measures, and 11% on LMP services for those who are seeking jobs.
As regards to the structure of LMP measures, training accounted for the largest share of EU expenditure, i.e. 41%, followed by the employment incentives which accounted for 24% of the EU-27 total. Training is the most used measure in Austria and Estonia, 86% and 74% respectively, while Slovakia and Czech Republic used it the least, both countries less than 10% of the total spent on LMP measure. The employment incentives support the recruitment of unemployed through wage-subsidies and exemptions to employer's social contributions. As such, they are the most important measures in Cyprus (62%) followed by Luxembourg, Romania, Spain, Sweden and Hungary, which percentages are ranging from 50% and more. On the other end of the scale are Germany, Estonia, Ireland and Norway with percentages of less than 10% of expenditure on LMP measures. Direct job creation measures account for 14.1% of total expenditure on LMP measures. These measures use public money to create community and similar non-market jobs for the unemployed and as such, they are the most used instruments in Bulgaria (74%), Slovenia (41%), Belgium (40%) and Slovakia (38%). Direct job creation is the least significant measure

http://ec.europa.eu/employment_social/employment_analysis/eie/eie2006_conf_medeiros2_en.pdf

in Italy and Poland with only 5% of active expenditure, while it is not used at all in Estonia, Cyprus, the Netherlands and Sweden. Supported employment and rehabilitation encompasses measures that aim to promote the labor market integration of persons with reduced working capacities and they account for 12% of the EU-27 active expenditure in 2006. These measures are most popular in the Netherlands (65%), Poland (44%) and the Czech Republic (42%) but in 2/3 of countries this category accounted for less than10% of expenditure on LMP measures or was not used at all. Start-up incentives that are intended to promote entrepreneurship, i.e. starting own businesses or self-employment, accounted for a little bit less than 8% of EU expenditure on LMP measures. Only in Slovakia, these measures are the most important accounting for 31% pf expenditure non LMP measures in 2006. Relatively high percentage was recorded in Germany and Cyprus, i.e. 19% and 18% respectively, and the lowest or none in Ireland, Latvia, Netherlands and the United Kingdom. The least used measures of all are job rotation and job sharing which accounted for less than 1% of all active LMP expenditure in EU. They are only significant in Finland and Sweden, where it consumes 7% and 6% respectively of active expenditure.

3. ALMP in Croatia

3.1. Brief overview of Croatian labor market

As any other transitional economy, Croatian economy was faced with the complex process of transition, particularly privatization that has adversely impacted inter alia labor market, making unemployment one of the most serious economic, social and political problems. The problem of unemployment persisted for more than a decade, with the unemployment rate oscillating at the level of 15%. The peak of unemployment was recorded in 2002 when 389,741(14.8%) persons were unemployed. The unemployment rate has been decreasing over the years reaching 9.6% in 2007, but the current world financial crisis is threatening this rate to increase once again. [6] Based upon annual statistics of the Croatian Bureau of Employment (hereinafter: CBE) (2009), following can be denoted: unemployment rate has been decreasing but still significant number of people has been jobless, i.e. 236,741 in 2008; out of total number of unemployed, more than half are women with the tendency that this gender asymmetry not only continues but worsens since this percentage rose from 58% in 2005 to 62% in 2008; unemployed are mostly people with only vocational education for certain professions; according to the age structure, unemployed are mostly young people in the age of 20-24 (12.5% in 2008) and

[6] Source of data: Croatian Bureau for Employment, Statistical Data, 2009

25-29 (12.1% in 2008), as well as persons in the age of 50 and more (29.5% in 2008). The most vulnerable (unemployed) are women in the age of 50-54.
Employment rates in Croatia in Croatia have been oscillating at the level of 43% since 2000. Even tough the employment rate has been increased from 41.8 in 2001 to 44.2% in 2007, such an increase can hardly make a difference on the labor market. Compared to other countries of the EU, Croatia is still on the bottom of the scale (see Eurostat, Employment database, 2008). If we add to this the problem of gender asymmetry on the labor market, as well as the low employment of youth and older people, it is evident that reaching Lisbon goals of 70% employment rate by 2015 and increasing the number of women, youth and older employed, becomes a challenging task for Croatia. Such a low employment rate can be explained by Homeland War (1991-1995) and its consequences upon economic and social life of the country, transition and privatization, creation of gray economy, feeble macroeconomic performance in general, growth based upon the trade rather than production, weak export performance, etc. However, much of this problem can be attributed to the various government policies – or lack of it - that directly or indirectly impact the employment rate (e.g. social policy, employment policy, etc.).

3.2. Croatian active employment policy

According to the Croatian Employment Law (The Official Gazette, NN 59/96, Articles 48 through 51), the active employment policy is defined as a set of measures and activities conducted by the Croatian Bureau for Employment (hereinafter: CBE) with a goal to improve labor market, employment, self-employment, to maintain existing employment if there is an economic reasoning behind it, to ease the employment of particular groups or individuals on the labor market, to reduce unemployment and to provide employers with employees. The active employment policy particularly encompasses following: programs for education and training, programs for opening of new jobs, programs for adjustment of jobs for particular groups of unemployed, individual programs for self-employment of unemployed, preparatory programs for employees in firms and other legal entities who are moving to new production programs or who are moving to work with new technologies; programs related to making feasibility studies, research and other projects related to labor market; programs of humanitarian, ecological, utility, infrastructure, culture and monument preservation and other activities if they are directly employ unemployed; sanation programs of firms and other legal entities if they ensure profitable business in the long run; programs of spatial and professional mobility.
As foreseen by the Law on Employment, CBE is in charge of creating measures of active employment policy, as well as to determine financial means necessary for measures to be realized. Also, the CBE determines the priority in

conducting measures of active employment policy. Means which are intended for the implementation of ALMP measures can be approved in forms of credit, as well as they can be invested in order to implement the program which ensures employment of bigger number of persons.

3.3. ALMP measures in Croatia

Croatia has relatively long tradition in creating measures intended to reduce the unemployment and stimulate employment. During 1950s, employment services together with unions and firms had been creating measures for employment of particular unemployed groups such as women, people with no or low qualifications as well as people with limited working abilities. These measures encompassed mostly creation of new jobs in smaller production or service workshops and organization of vocational courses in duration between 1- 6 months. In 1960s, these courses became very important function of employment services with the goal to re-qualify and vocationally train unemployed persons, as well as they included employed persons that were threatened by unemployment making sure that they maintain the job. Due to the fact that the youth unemployment had been significant, employment services were also occasionally creating measures stimulating employment of young persons, usually in form of financing internships, which proved to be quite successful.[7] Until 1998, ALMP have been applied with an occasional break due to the lack of financial means.[8]

High level of unemployment in 1990s, coupled with feeble macroeconomic performance as the aftermath of the transition and Homeland War (1991-1995), induced the Government to re-think the employment policy with greater emphasis on active measures formulated in National Employment Strategy. This strategy stated that the active policy measures should be focused on following: improving the level of information among unemployed as well as establishing better cooperation and communication with employers with a goal to be better acquainted with their needs for workers; organizing educational programs for unemployed and those employed who are representing a surplus in firms or for the purpose of restructuring the educational structure of employed; focusing on the most vulnerable groups among unemployed such as youth, women, invalids, etc.; organizing public work for those who are long term unemployed and those who have low qualifications; stimulating self-employment through credit lines, organizing seminars that inform potential candidates on administrative procedures when starting a business and the like; encouraging cooperation between CBE and Association of Employers and unions in order to define plans of solving the problem of workers' surplus; considering regional particularities, i.e. encourage regional offices of the CBE

[7] More detailed exposition of measures prior to 1990s can be found in Kerovec (1995).
[8] Babić (2003) offers in more detail a review of ALMP measures from 1993-2001.

to work with institutions of local self-government to define and conduct ALMP measures and ensure additional financial sources which would enable formulation and realization of targeted regional programs; continuing with subsidized financing of youth unemployed that have no previous work experience; ensuring that all active policies are mutually coherent and complementary as well as conducted parallel with other measures at the macroeconomic level; introducing the system of follow up and evaluation of conducted measures. These ten (10) propositions have been constituting guidelines for the CBE to develop programs of active policies.

Based on the National Employment Strategy, the CBE developed First program of ALMP measures in 1998 that offered four measures for the purpose of reducing unemployment, promoting new vacancies, providing assistance in the reorganization of economy and synchronization between supply and demand on the labor market. The measures included: (1) subsidized employment of unemployed persons registered at the CBE without previous work experience; (2) subsidized introduction to work or training; (3) professional training, re-qualification or qualification upgrading for known and unknown employer; and (4) subsidized employment of unemployed war veterans, unemployed children or spouses of deceased or missing war veterans. In 2000, three additional measures were created: (5) women older than age 45 with 20 years of working experience, as well as men older than age of 50 with 25 years of working experience; (6) invalid persons; and (4) all registered unemployed persons that live in the less developed area of the Republic of Croatia and in the city of Vukovar.

In 2002, the unemployment in Croatia reached its peak with 415,352 unemployed persons, which was the highest number of registered unemployed since the beginning of statistical data acquisition on unemployment in 1952. Thus, the Croatian Government passed the second program – Program for the Promotion of Employment – re-designing active measures, symbolically titled: 'From College to Work'; 'From the Classroom to the Workshop'; 'Jobs for All through Education'; 'Profit through Experience'; 'A Chance for Us, too' and 'Jobs for War Veterans'. This (second) program was ceased in 2005 since it did not produce expected results. In two and half years of its existence, only 77,086 were employed through the program and instead that the amount of money for unemployed decreased, it increased from 111,11 mil EUR to 119,57 mil EUR as the rebalance of budget showed in 2005.[9]

In 2005 the Government initiated the creation of Croatian National Employment Action Plan (2005-2008) as the basis for making Annual Employment Plans. The Annual Employment Plan encompasses executive measures which are fully aligned with the European Employment Strategy and

[9] Source of data: http://www.croatiabiz.com/info_lnews-article.php?ID=25759, Accessed 7th March 2009

National Action Plan for Employment. Beside subsidized employment, these measures are focused on: stimulating entrepreneurship through co-financing costs of opening new jobs and crafts, subsidizing entrepreneurship credits, self-employment; crediting entrepreneurship in tourism; education of long-term unemployed, persons with lower education and young people who ceased education in order to provide them with necessary skills and increase their employability, as well as to balance supply and demand on the labor market. Particularly emphasis in the Annual Employment Plan is to promote a battle against discrimination of persons who are in disadvantaged position on the labor market (e.g. single parents, invalids, War-of-Defense veterans, etc.) as well as inclusion of people in programs of public work which are conducted by the local self-government. Based upon these guidelines the CBE formulated eight (8) measures: Measure 1**:** Subsidized employment of young persons without working experience; Measure 2: Subsidized employment of long-term unemployed; Measure 3: Subsidized employment of women above the age of 45 and men above the age of 50; Measure 4: Subsidized employment of special groups of the unemployed; Measure 5.1: Education co-financing for the known employer - new employment; Measure 5.2: Education co-financing for the known employer - job retaining; Measure 6: Education financing for an unknown employer; Measure 7: Public works; Measure 8: Public works - individual projects.
According to the CBE statistics, in the period from 2006 to 2008, altogether 20830 persons were covered by the ALMP measures (table 1).

Table 1 Persons employed by the ALMP measures (2006-2008)

ALMP MEASURES	**2006**	**2007**	**2008**
Measure 1	1024	1226	1003
Measure 2	1238	1693	1290
Measure 3	579	837	706
Measure 4	268	455	351
Measure 5.1	13	85	88
Measure 5.2	362	707	1017
Measure 6	873	2960	2361
Measure 7	448	531	699
Measure 8	---	---	16
Total	4805	8494	7531

Source: Hrvatski zavod za zapošljavanje: Mjesečni statistički bilteni: br. 12, godina XIX./2006.; br. 12, godina XX.2007.; br. 12, godina XXI./2008.

In 2006, the most popular measures were subsidized employment of young persons without working experience and subsidized employment of long-term unemployed accounting for 47% of persons encompassed by the ALMP

measures. In 2007 and 2008, the biggest number of persons was covered by the measure of education financing for unknown employer. The least used measures in the period from 2006 to 2008 were measures targeting new employment as well as public works in form of the individual projects. As far as the expenditures for ALMP measures are concerned, the greatest amount of approximately 72,8 mil EUR was provided in 2007 which was a significant increased from 46,7 mil EUR in 2006. In 2008, the amount provided was 6,7 mil EUR[10].

In order to improve the role and impact of the ALMP on the Croatian labor market, in 2008 Croatia participated in the program called "Active employment measures for groups that are threatened by the social exclusion" within the Phare 2005 program. The mail goal of this program is to provide grant schemes for employment purposes for the most vulnerable unemployed groups as well as to provide technical support to the CBE in order to increase the capacity to manage grant schemes. The amount of money ensured for this program was 1,25 mil EUR and 1 mil EUR for grant schemes. There were 11 programs financed by these means.[11]

4. Concluding remarks

Measures of ALMP – such as subsidized employment, training, public employment measures and job search assistance – are widely used in the EU to combat unemployment. Croatia has a long tradition of ALMP and its measures, yet they have been applied with an occasional break due to the lack of financial means or the lack of expected results. Ceasing all previous programs, the Government initiated in 2005 the creation of Croatian National Employment Action Plan (2005-2008) as the basis for making Annual Employment Plans hoping that it will yield better results than previous ALMP programs. In the period from 2006-2008, 20,830 persons were covered by the ALMP measures. Except for the increase in expenditure designated for the ALMP measures, one can notice a shift in the structure of measures. The most dominant measure of subsidized employment has been caught up by the measures involving various forms of education. This confirms the efforts of the Croatian government to shift its focus from employment to employability, which goes in line with the EU guidelines offered through the European Employment Strategy.

There is hardly any information on the impacts of active labor market policies in Croatia so it is hard to discuss the success of these policies. Namely, it is not enough to only increase the expenditure on ALMP measures, but it is important to evaluate which measures yield the best results. Thus, in order to fully use the

[10] Source of data: http://www.mingorp.hr/UserDocsImages/GPPZ2007/Odluka_VLADE_o_GP_2007.pdf, Accessed 10th March 2009

[11] For more details see the official site of CBE, www.hzz.hr, Accessed 10th March 2009

benefits of ALMP measures on the Croatian labor market, Croatia needs to develop a proper 'evaluation culture', i.e. a comprehensive assessment of relevance, effectiveness, efficiency and outcomes of ALMP measures implemented by the CBE and other stakeholders. This would improve policy design and secure better outcomes. Further, it should develop management system and the capacity of the CBE for the formulation, implementation, monitoring and evaluation of ALMP measures. In addition, the CBE as the prime institution for conducting ALMP measures should increase and improve its human resources, particularly in terms of educating their employees regarding the application of measures (e.g. councilors, specialists working with risk groups, etc.) and their evaluation (e.g. analysts). Increased attention should be focused on competing for foreign grant schemes (particularly coming from the EU) intended to support various employment programs.

Even tough the unemployment rate in Croatia has been decreasing since 2004, the unemployment remains one of the (serious) economic and social problems, particularly in the context of the world financial crisis and threatening recession. ALMP can significantly contribute to the fight against unemployment, but they cannot alone solve the unemployment problem. Namely, the main task of the ALMP is to assist unemployed to return to work, which in turns requires a supply of job vacancies in the economy. Thus, more effective ALMP measures are only one element in a comprehensive strategy of macroeconomic and microeconomic measures required to combat unemployment. They should be regarded as a valuable weapon in the fight against unemployment, but as a complement rather than a substitute to other measures

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MEASURING INDUSTRY CONCENTRATION OF EQUITY INVESTMENT FUNDS IN THE REPUBLIC OF CROATIA

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Abstract

The overall objective of this work is to investigate further development of the capital markets in the Republic of Croatia with a focus on industry concentration of equity investment funds with a public offering, and the changes that they have experienced since 2004 to date. Visage the Croatian capital market has changed in this period and therefore the aim is to measure investment capital concentration in the industry of equity investment funds. It is required to determine if in industry is perfect equality present or if the investment capital is directed only to a small number of large funds. Uncertainty, distrust, and a great level of risk are characteristics of the capital markets in development, such as Croatia. The aim is to determine whether the size of net assets of investment fund puts safety at the investor, and thus encourages investors to future investment in the fund, which generally speaking, increase the concentration of capital only in funds with a high value of net assets.
Process of transition in the Republic of Croatia affected the development of capital markets and the emergence of new participants, namely an open investment fund. The foundations for long-term sustainable growth of the Croatian capital markets are currently still extremely unstable, and development of the market itself is tied to a sense of distrust and insecurity of its participants. It is necessary to investigate, in poorly developed capital market, if investors perceived greater safety of investments in large funds, which are the symptoms of a large concentration of capital in a small number of funds. We will also investigate whether the development of capital markets leads to a reduction of industrial concentration. Research and hypotheses are focused on the industry of equity investment funds with a public offering in the Republic of Croatia.

JEL classification: O16, D81

Keywords: Industry concentration, Equity funds, Open investment funds, Herfindahl-Hirschman index, Gini index

1. Introduction

In international practice, we meet a few different terms used for the purpose of defining the investment funds. Frequently division, which recognizes a regulatory framework, and is characteristic for the majority of countries in

which those institutions operate, is the distinction between *close-end* and *open-end* types of investment funds. Such a categorization has found his place in regulatory framework in the Republic of Croatia, but it is necessary to point out the existence of another type of investment funds that are regulated by special law (Zakon o obveznim i dobrovoljnim mirovinskim fondovima, 71/07), which are Public Pension Funds.

In Croatia, the development of investment funds can be associated with the end of the nineties, and with the emergence of investment privatization funds, and with the development of capital markets. Distrust, uncertainty and pessimism that was at the beginning of the development of capital markets today is replaced by optimism and confidence with the investment funds as one of the main participants. In 2007 the Republic of Croatia has 100 open investment funds (HANFA, 2007., 23) whose net assets amounted to 30.056,24 million kuna (HANFA, 2007., 24), while there is nine closed-end investment funds whose net assets amounted to 3.700 million kuna (HANFA, 2007., 26). In the last three years the largest development and growth of net assets recorded an open investment funds whose net assets grew by 517%[56]. In early 2005 there are 37 active funds, while the number in 2007 increased to 83 funds, while in 2008 we have 107 registered funds. Analysis given the data we can conclude that this sector of the last decade intensive developing, this leads to increase in value of net assets of funds and the emergence of new funds (entry of new funds in the industry). Following the above-mentioned hypothesis (H1) can be set:

H1: Development of capital markets leads to a decrease in the Industry concentration of equity funds.

The intensity and direction of development of equity investment funds is closely associated with the development of capital markets. With development of capital markets investors confidence in the institutional investors and the oversight institutions is growing, which assumes uniform distribution of capital to all market participants, including the equity investment funds. Balanced distribution of capital for results has the decline of industrial concentration of equity investment funds. Cause of the fall of Sector concentration, which is caused by the development of capital markets, can be explained by the entry of new funds in the industry.

Average Croatian investor prefers classical form of investment, and understands funds as extended palette of banking products (which does not have to wonder, because all big investment funds belong to bank funds). From the previously

[56] At the end of March 2005 the net assets of open-end investment funds amounted to 5,8 billion kunas, while in late 2007 it reaches an amount of 30 billion kunas.

mentioned we can infer how this segment of the market, in the last few years, has promoted and contributed to the development of capital markets. Because of the dynamics of establishment of new funds and the large growth of their net assets, this work will explore the issue of distribution of investment potential, which is based on measurement of the size of the net assets of equity investment funds. The intensity of Industry concentration of equity investment funds with public offering and change the intensity of concentration was measured from March 2004 to[57] April 2008, the author will try to connect a change of concentration with the development of capital markets.

2. Equity funds

Equity fund is a mutual fund that invests principally in stocks. It can be actively or passively managed. Portfolio of equity funds mainly consists of shares of different companies. Among them we can run on the large differences that include funds whose portfolios are concentrated in fast company (characteristics of transition countries - such as Victoria Fund in the Republic of Croatia), in the smaller companies market capitalization, in the shares of companies in certain industrial branches, or in shares of companies from different geographical regions.

Equity funds are very risky for investors because they are subject to large price oscillations, but due to the increased risk they offer the possibility of greater return. Equity funds can use diversification in several ways, depending on the desired exposure to risk. The fund, which are seeking the greater stability, or lower exposure to risk in his portfolio will choose the majority of *blue chip*[58] stocks (for example in Republic of Croatia we have the *Platinum blue chip* fund), while funds which are seeking more potential and greater return, your portfolio will structure of the shares, which have long-term growth potential, and which are low-valued in the capital market.

Equity funds are meant for long-term investments, that is for most patient and the bravest investors. The reason for this lies in the behavior of markets. Every market shares has a growth phase and phase of correcting the price, after which follows the re-growth. Investors may not stagger the two digit correction value and they must resist of the unthinking decision on the sale of shares in the short term, because buying and selling shares on the majority of equity funds in the Republic of Croatia is not cheap and it is 3-4%. In the short term each market has a phase of stagnation and growth phase of the value of shares, but in long

[57] Concentration will be measured twice in four years observed, or in eight time periods

[58] Shares of large and stable companies. These stocks have low exposure to risk of capitalization (the risk of reducing the value of the shares), paid a dividend regularly, and the risk of bankruptcy is almost negligible

term market trend is upward. Market cycles (stages) are unpredictable and it is not possible to determine either the beginning or duration. For that reason, investor should hold shares in the equity fund for a very long time (at least three to five years), because we must include as many cycles as possible. When period of investment is long, it is likelihood that the final result of investment is in line with the average yield of the fund.

Market shares in the last hundred years, achieve with two-digit average annual growth, regardless of a few longer periods of stagnation. Some segments of the market shares, when the value of dividend payments is activated, recorded growth of 15% on annual level.

It is necessary to understand that higher risk, and high variability between the highest and lowest value in a period, is not necessarily a negative characteristic of equity fund (depends on the character of the investor and his aptitude for risk), because without the higher risk, or major changes of value, it is not possible to achieve higher yields. The average annual contribution of equity funds in the world is 15%, indicating that the patient investors can realize a *very decent* return.

Equity funds in the Republic of Croatia, who have invested in global capital markets made modest result. As an example we can take *ZB euroaktiv* (http://www.hrportfolio.hr) who in four years and five months of existence has achieved average annual yield of 0,29%. Contrary, the funds that have operated in the domestic market, have created a substantial and difficult to renewable offerings, who have changed in the past few months because of the global crisis on the capital market. Thus Ilirika fond (http://www.hrportfolio.hr) in the four years of existence has achieved average annual return of 20.09% (in 2004 average annual return was 43,2%).

As already was told eqiuty funds are intended for long-term investment, as a good example we can use already mentioned Ilirika fund. Front-end fee in Ilirika fund is three percent, and depends on the amount that is paid. In the world the front-end fee in equity funds is mostly in the range of three to five percent. Fee is not so high if we compare with the average annual yield of fund, which over the five years of its existence, amounted to over twenty percent.
It is necessary to mention that during 2002 and 2003 the value of shares of certain equity funds fall dramatically by twenty percent (for example Victoria fund). In these times impatient and imprudent investors could lose in just a few months, twenty percent of their investment. This is a good example of how investment in the equity fund should be oriented in the long term, because the market has a long-term trend growth, and the investor must be patient and not act rashly, and hurry.

3. Branch concentration

Coefficient of concentration is generally measured for four largest enterprises within the branch, although it can be calculated for four, six, eight and more largest enterprises. The calculation procedure of the coefficient of concentration is based on the sum of individual market shares of four largest enterprises within the branch. In the case of perfect competition, the coefficient is lower as the number of enterprises is higher, respectively as the lower the coefficient is, the concentration is weaker.

Herfindahl index (Herfindahl-Hirschman-Index-HHI) measures concentration rate on the market by adding squares of market shares of all enterprises present on the market. Its advantage among other concentration indicators is in the fact that it takes into consideration market shares of all enterprises within the branch and it is highly sensitive regarding differences in their individual market shares, i.e. it gives larger ponder to shares of larger enterprises and quadrates their market shares (either in the form of percentage or coefficients). As larger differences in size among enterprises are, the higher is the Index value. Maximal value of the index is 1 (1^2) or 10.000 (100^2) if we take percentage as a measure for market share. It is assumed that the market with Herfindahl-Index value lower than 0.1 (1.000) is unconcentrated, market with the Index value between 0.1 (1.000) – 0.18 (1.800) is moderately concentrated, while the market with the Index value higher than 0.18 (1.800) is highly concentrated (Call &Holahan,1983, 314-315)

The coefficient of variation is a relative measure of dispersion; it divides standard deviation by the arithmetic mean, and afterwards multiplies its quotient by 100. Actually, coefficient of variation represents a percentage of standard deviation share in arithmetic mean, and it is independent on measure units. It equals zero when all members of the numeric array are equal, because in that case standard deviation equals zero.

Gini coefficient is a relative measure of concentration, calculated on the basis of Lorenz curve. It is based on numeric value of the share of area in between Lorenz curve and straight line of uniform distribution in total area under the straight line of uniform distribution Its value can vary between 0 and 1, whereat 0 represents total absence of concentration (condition of perfect competition), 1 represents complete concentration (absence of competition). As smaller area under Lorenz curve is, the higher is the concentration, and vice versa. When Gini coefficient equals zero, concentration on the market doesn't exist, and Lorenz curve is identical to straight line of uniform distribution. In the case when Gini coefficient equals one, market is in condition of complete

concentration (complete control on this market has only one enterprise - monopoly), and Lorenz curve will be the most distant from the straight line of uniform distribution.

3.1 Branch concentration of equity funds

Among all observed investment funds, equity funds have been developed the most. On 30/09/2004 branch of investment funds comprises eight equity funds controlling assets in value of 186,9 millions of Croatian kunas, respectively equity funds control minimal assets in that period, in comparison to other categories of funds. In the last observed period, on 31/03/2008, branch comprised thirty-five equity funds managing the assets in the value of 8.178,9 millions of Croatian kunas, what represents the increase of 4.376,08% in the period of three and a half years. Presence of correction at Croatian capital market, which started in October 2007, caused asset decrease in balanced and equity funds. Value of the equity funds assets have reached its maximum in the seventh observed period, before correction, on 30/09/2007, and it amounted 13.649,9 millions of Croatian kunas, what represents the increase of 7.303,31% in respect to initial period. Correction leaves its mark on the equity funds market, leading to the decrease of assets. At transition between seventh and eighth observed period, equity funds lost 40,08% its assets partly because of the correction, partly because of mistrust of investors who pulled their assets out of funds and invested them in less risky and solvent products (one of them are cash funds).

Shifts of Gini coefficient and Herfindahl-Index are not equal neither it this example. The reason for these differences is also the fact that the most of new participants, funds, entered this branch within the period of three and a half years. Author thinks that Herfindahl-Index shows the most relevant picture of the concentration in the economic branch. Herfindahl-Index is insensitive on entering of new enterprises into the branch, and shows more attention to enterprises with large shares because it squares them (as the larger amount of specific share in the branch is, the larger is its square). This can be noticed if we compare shifts of Herfindahl-Index and coefficient of concentration of 6 biggest enterprises in the branch (as shown in the table 4). They are both shifting in the same direction, what explains the attention of Herfindahl-Index given to large enterprises, funds.

Table 1: Concentration of equity funds[59]

Date	Gini coefficient	HHI	Coefficient of variation	Coefficient of concentration of 4 largest funds	Coefficient of concentration of 6 largest funds	Coefficient of concentration of 8 largest funds
30/09/2004	0,41552969	1.989,74	76,93%	85,98%	93,85%	100,00%
31/03/2005	0,46768292	2.241,96	89,08%	84,52%	94,99%	100,00%
31/10/2005	0,59549331	2.151,13	125,75%	80,49%	89,32%	95,38%
31/03/2006	0,40932727	1.209,16	75,62%	62,71%	76,38%	87,34%
30/09/2006	0,49891303	1.271,49	95,25%	60,37%	79,50%	88,78%
31/03/2007	0,60641627	1.428,05	125,32%	70,84%	80,45%	88,92%
30/09/2007	0,69600481	1.352,63	158,65%	68,90%	77,60%	84,33%
31/03/ 2008	0,73699537	1.245,40	183,27%	63,76%	73,66%	81,10%

It can be concluded that the branch of equity funds belongs to moderately concentrated branches, since the value of Herfindahl-Index is between 1.000 and 1.800, with the exception of first three periods when the branch was highly concentrated. Therefore, the development of capital market leads to the decrease of concentration, so the **hypothesis is accepted.**

Conclusion

Gini coefficient and coefficient of variation for all categories of open investment funds correlate positively with Herfindahl-Hirschman-Index, with the exception of those periods where significant number of new funds entered the branch. Since Herfindahl-Hirschman-Index is insensitive to accession of new funds into the branch, it is considered as the most reliable measure of branch concentration. Branch dynamics caused the emergence of new funds and their accession into the branch, what additionally complicates the analysis of branch concentration. Therefore the other measures of branch concentration, in analyses set in the thesis, only facilitate interpretation of general conditions and can't be applied to analysis of branch concentration without Herfindahl-Hirschman-Index.

Within the branch of equity funds, which strongly depends on capital market development, the gradual decrease of branch is also registered. Herfindahl-

[59] Calculated by the author on the basis of net assets value of equity funds available in: Galinec, J., ed.: Publikacija o investicijskim fondovima, *Investicijski fondovi*, MZB, Zagreb, November 2004 – April 2008

Index, as well as the coefficient of concentration related o four largest funds, gradually decline. In the first observed period branch was highly concentrated, but in time concentration declines and the branch becomes moderately concentrated.

In countries with developed capital market, such as European Union and USA, branch concentration, measured by the coefficient of concentration of five largest investment funds in the branch, has the value around 18% (Otten; 2002, 30), what is significantly lower than the value in the Republic of Croatia. Control of investment fund branch by small number of large funds "can be the cause of negative consequences on whole branch efficiency" (Otten; 2002, 30). These funds would be able to control market what would make accession of new investment funds into the branch, and the possibility of market manipulation will be opened.

Furthermore, according previously mentioned facts regarding results on branch concentration research, as well as regarding concentration level at highly developed capital markets (EU and USA), it can be concluded that lowly developed capital market results in emergence of low number of equity funds with high concentration of net assets. Therefore, when the capital market is developing, the branch concentration is slowly decreasing. The **hypothesis is accepted**. Accordingly, in the future it can be expected that, as capital market will be developing, new equity funds will enter the branch and sustained distribution of investment capital among them will be achieved. It can be assumed that branch of equity funds will gradually be transferred from concentrated into competitive branch.

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International Economics

THE FOREIGN DIRECT INVESTMENTS ENTRANCE AND ITS IMPACT INTO COUNTRIES IN TRANSITION (CASE OF BOSNIA AND HERZEGOVINA)

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Abstract

FDIs are very often the most glorified way of high and rapid economic development into transitional countries. Bosnia and Herzegovina has to catch up the significant higher level of real economic convergence before its entrance into European Union membership. So, in that way Bosnia and Herzegovina will be able to meet with a foreign competition on a huge common market of EU. The neoclassical concept of economic growth (famous as "Washington Consensus") which has been applying into Bosnia and Herzegovina emphasizes the FDIs entrance as the main actuator of B&H economic development. That concept supposes that FDIs entrance and comparative advantages could bring the optimal economic growth and development for all countries in the conditions of foreign trade and capital movement's liberalization, monetary stability (without inflation and with stable exchange rate) and fiscal stability (balance of budget).
The subject of this paper is the analysis of theoretical vindication of such macroeconomic policy and real role of FDIs in economic development concerning existing economic and political situation in Bosnia and Herzegovina and historical experiences of today developed economies.

JEL classification: O16, P45, F21,F37

Key words: Bosnia and Herzegovina, Washington Consensus, Foreign Direct Investments, Keynesianism, real and nominal convergence, European Union.

1. The macroeconomic policy frame of B&H economy development and its main macroeconomic indicators

The role of FDI into B&H economic development can be analysed only within the B&H macroeconomic development policy as a whole. Bosnia and Herzegovina has started its economic development process in 1996. Because of impossibility to create its own macroeconomic development way, B&H has applied the neoclassical macroeconomic development framework (known as "Washington Consensus")[60] which couldn't bring good results in the case of

[60] Originally, the term «Washington Consensus» refers to 10 recommendations for the countries wishing to reform their economies. The author of the recommendations is the British economist

B&H economic situation. This economic schedule supposes that free market competition (A. Smiths invisible hand) and FDIs (Foreign Direct Investments) entrance are main actuator of economic grow and it will bring optimal allocation of factors of production resources. But, Bosnia and Herzegovina is weighted by many economic and non-economic problems and such macroeconomic policy which is based on neoclassical political economy theory is not appropriate for B&H economy.

Table 1.

Indicators	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**
Nominal GDP (billion EUR)	5,5	5,9	6,6	7,4	8,1	8,7	9,8	11,6
GDP per capita (EUR)	1,660	1,786	1,958	2,214	2,388	2,561	2,873	3,412
Real GDP growth rate (%)	5.5	4.5	5.5	3.0	6.3	4.3	6.2	8.0
Industrial production growth rate (%)	8.8	12.2	9.2	4.8	9.0	10.0	11.0	10.0
Average net wages (EUR)	190	209	228	247	258	275	300	322
Annual inflation rate (%)	4.8	3.1	0.4	0.6	0.4	3.7	6.1	4.9
Annual unemployment rate (%)	39.7	40.3	40.9	42.0	43.2	31.1	30.0	28.0
Currency reserves (million EUR)	522	1,379	1,270	1,428	1,779	2,160	2,787	3,420
Trade balance (billion EUR)	-3.00	-3.31	-3,52	-3,67	-3,68	-4,01	-3,41	-4,14
Total FDI (million EUR)	159	133	282	338	567	478	564	1,628
FDI contribution to GDP (%)	2.9	2.2	4.3	4.6	7.0	5.5	5.8	14.0
Deposits of households in Commercial Banks, mill EUR	267	740	829	985	1,273	1,629	2,097	2,641
Population (in million)	3.30	3.32	3.35	3.35	3.38	3.38	3.40	3.40

Source: Agency for Statistics of B&H; Central Bank of B&H, FIPA

John Williamson (1989). They concern fiscal discipline, modification of public consumption, tax reform, financial liberalisation (interest rate liberalization), introduction of a single foreign exchange rate, trade liberalisation, eliminations of all obstacles to direct foreign investments, privatisation of state-owned companies, deregulation and competitiveness of the market, and inviolability of property rights.

The best confirmation of unsatisfactory macroeconomic policy is huge and sustained trade balance deficit which according to its definition means domestic population poverty enlargement. If foreign trade deficits are based on the import of capital equipment and new technology which are going to be used in new productive investments (''green field investments'') which open new job opportunities and especially if domestic industry is also connected with those investments on the principle of ''industry clusters'', than it can function positively. But, if deficits are based on the imports of consumption, but not capital goods, than the national income is spent on the goods produced abroad and multiplicative effects of domestic industry growth are decreasing. Unfortunately, the foreign trade deficits in Bosnia and Herzegovina are mostly based on the imports of consumption goods and the exports of lower staged processing goods (raw materials) which are a direct consequence of the overly liberalized foreign trade.[61]

In the case of Bosnia and Herzegovina, FDI entrance can be only additional source for economic development, but not the main. Free market competition and capital flow liberalization and all another items of "Washington Consensus" macroeconomic policy are inconsistent according to existing B&H economic and political situation. According to economic theory and historical experiences of all today developed countries, the much appropriated policy is *Keynesian* type of economic policy (the combination of state budget deficit, moderate inflation which can be under control of central bank and gradual depreciation of national currency) where the state economic role should be focal. Some measures of foreign trade protectionism (custom protection, subventions) are also very important to protect the most sensitive sectors (for example agricultural sector).

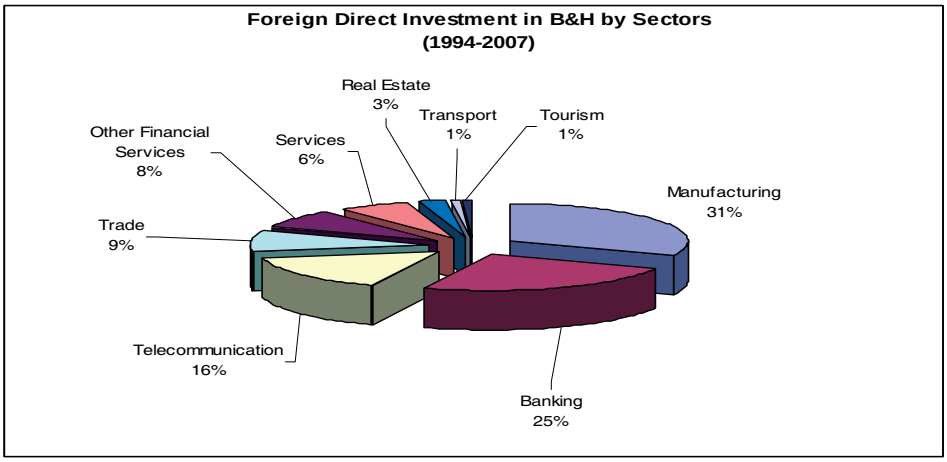
2. The amount and a structure of FDI stock into B&H economy

Foreign direct investments can influence economic growth in two ways - positively and negatively. It primarily depends on which type of FDIs is about and is it connected with other domestic firms on the principle of "clysters industries building". There are two main types of FDIs: *green field* investments and *take-over* investments. While *green field* investment means the new production initiation, the *take-over* investment means the buying of existing domestic firms. The green field investments are much more important that take-over, because they primarily influence on unemployment decrement, but take-

61 In consideration of export structure B&H is in unfavoruable situation because the coverage of imports by exports is only about 30-40%. B&H records the largest coverage exactly by the import and export of primary raw-materials, respectively that the suficit in the foreign trade exchange is realized only by following groups of products: wood and wood products, wood coal, iron and steel products, aluminium and aluminium products, lead and lead products.; Source: FIPA (2008), Investment Opportunities in Bosnia and Herzegovina, p. 18

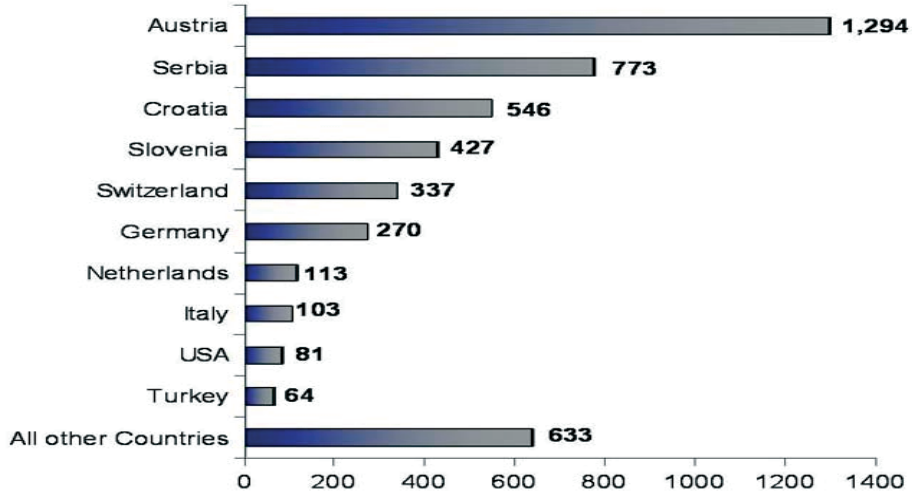
over investments usually influence on unemployment increment, because of labour cost reduction. So, the FDI entrance should be directed through green field investments (for example by tax reduction, or effective tariffs protection) which form new producing companies and *''industrial clusters''* which connect domestic industry. In that way, the domestic production can substitute the import goods in a long term. Great bottoming on foreign capital entrance of multinational companies which conquers domestic market and export and without planned domestic industries development, it can happen that GDP of the country grows and GNP decreases in a long term. That causes pauperization of domestic population because profit gained in the country (through foreign capital - FDI of multinational companies) will go abroad.

Figure 1.



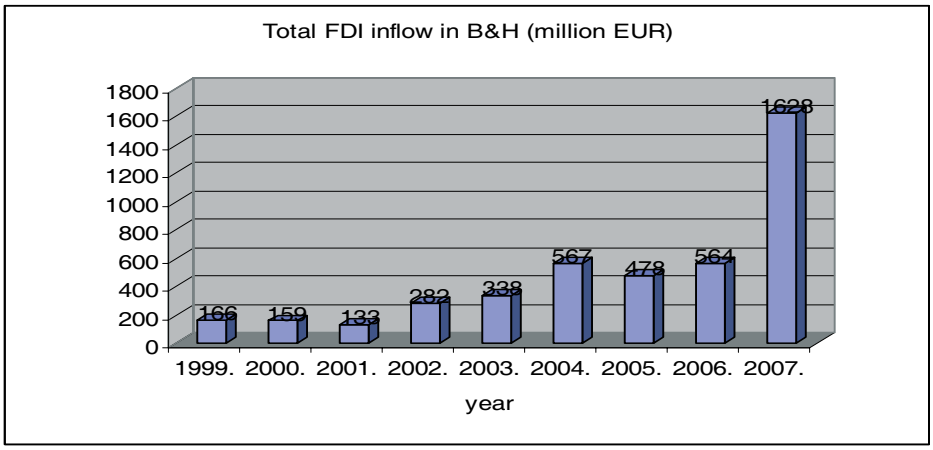
Source: B&H Central Bank, MoFTER, FIPA

Figure 2.



FDI Stocks by Country, mill EUR (May 1994 - December 2007)[62]
Total amount 4.6 billion EUR

Figure 3.



Source: Central Bank of B&H, FIPA

[62] Source: http://www.cbbh.ba/

From the very beginning of B&H development process, the FDI entrance has been done mostly through take-over investments (in banking sector[63] and telecommunication sector before all), so the macroeconomic consequences of that haven't given good result that is visible from the some macroeconomic indicators (unemployment, foreign trade deficit, grow rate, …). But, in 2007, the FDI inflow was a record year, and it was tripled comparing with 2006. Greenfield investments were participated with 40% in total FDI and FDI contribution in GDP was 14% in 2007. It was very significantly improving investment climate in B&H, but FDI entrance is still extremely sensible on uneconomic problems that Bosnia and Herzegovina has been affected by (corruption, political instability, complex bureaucrat procedures etc.). Besides that, singular B&H market is too small and disconnected with a small purchasing power which also isn't favourable for FDI entrance.

3. The most attractive fields for FDI entrance into B&H

There are too many attractive economic fields for investment opportunities into Bosnia and Herzegovina. We can underline the following sectors as the most attractive for foreign investors: energy sector, infrastructure, the construction industry, agriculture and food production, beverages production, forestry and wood products, telecommunications, manufacturing of clothing, textile and leather goods, production and processing of metals, and production and processing of wood. All those sectors offer many advantages and opportunities for doing business. Besides that, foreign investors can use domestic skilled workforce with experience in manufacturing as well as in management.

The energy sector is placed on the first place, because it is well-known that Bosnia and Herzegovina owns with a relatively huge sources of primary energy (hydro-power before all, coal energy, wind energy,[64] solar energy …).[65] So, there are too many possibilities for foreign investors to invest into construction projects on the Drina, Neretva, Bosna, Una, Trebisnica and Vrbas rivers and in the development of more than 200 small hydroelectric power plants on other sites is enormous.[66]

[63] The banking sector, which has been completely reformed, has proved especially attractive to investors seeking new market opportunities. Currently, foreign banks own 86% of the B&H banking sector, ensuring employment for almost 9,000 people.; Source: http://www.cbbh.ba/

[64] According to recent research conducted by domestic and international experts, wind potential of Bosnia and Herzegovina has a 30% higher utility coefficient than the EU average and the highest potential in the Balkan region.; Source: http://www.fipa.gov.ba/

[65] The theoretical potential of hydropower in Bosnia and Herzegovina is calculated at 8000 MW, the technical potential 6800 MW and the economic potential 5600 MW. With an installed capacity of 2052 MW (53% of the total electricity generated), hydropower is highly significant in Bosnia and Herzegovina, although its potential is far from being fully exploited yet (37% of its economic potential).; Source: FIPA.

[66] Source: http://www.fipa.gov.ba/

Bosnia and Herzegovina has also relatively high agricultural potential.[67] Unfortunately, the B&H agricultural sector is much more underdeveloped toward EU. Agriculture sector in Bosnia and Herzegovina employees about 40% of B&H labour force, but in the case of EU it is about only 3-4%. It is sufficient proof that foreign investors can remarkably improve agricultural production through new technology introducing and labour productivity increment. Foreign investors have already recognized the value of this sector, but the advantages of investment opportunities in the agriculture sector still remain to be utilized.

The following sector which offers many opportunities for investments is tourism. B&H is a country with a large fortune in the sense of different cultures, religions, traditions and architecture where investment opportunities (for example: hotels, spas, restaurants, recreational, natural, historical, and cultural attractions) can be very attractive. Practically, the each tourism types (for example: cultural tourism, mountainous tourism, ecological tourism, religious and historical tourism, hunting, fishing and river tourism, health tourism …) offer possibilities for investing. Very related with a tourism development, as well as industry, are the infrastructure and traffic roads. Up to the middle of 2003, when it was built the first 11 kilometres of modern highway, B&H was the only Southeast Europe state without any highway kilometre. At the beginning of 2009, B&H has had only 20 kilometres, probably the least kilometres per capita in Europe. All traffic types (roads, highway, railway infrastructure, airports) require urgent renovation.

There are also other types for foreign investing, such as: automotive industry,[68] banking and financial services, construction industry, forestry and wood industry, telecommunications, mining industry[69] …).

4. The measures for FDI entrance encouragement

The market size is one of the most important factors for the higher level of FDI inflow from outsiders. The larger market size has the positive effect on FDI entrance. In that sense, the CEFTA enlargement on Western Balkan countries (CEFTA 2006 agreement) could bring a significant impulse for higher FDI level.[70]

[67] Although much of the country is mountainous, there are over 1.5 million hectares of agricultural land in Bosnia and Herzegovina, both for crop growing and livestock rearing.

[68] B&H has tradition in the automotive industry, especially in production of auto components. The Volkswagen Group has recognised this tradition, so B&H's companies are connected in this way into the intenational automotive cluster which is looking for investment partners to expand production into wider international markets.

[69] The major companies in this sector are Mittal Steel Zenica and Aluminij Mostar, which are export-oriented enterprises and connected in wider international mining clusters.

[70] At the end of 2008. the parties of the CEFTA agreement are: Albania, Bosnia and Herzegovina, Croatia, Macedonia, Moldova, Montenegro, Serbia and Kosovo.

Table 2.

State	Accession	Population	Area (km²)	GDP in millions (PPP)	GDP per capita (PPP)
Albania	1 January 2007	3,619,778	28,748	19,920	6,300
Bosnia and Herzegovina	1 January 2007	4,590,310	51,209	28,166	7,100
Croatia	1 January 2003	4,491,543	56,542	68,980	15,500
Macedonia	1 January 2006	2,061,315	25,333	17,350	8,500
Moldova	1 January 2007	4,324,450	33,843	9,821	2,900
Montenegro	1 January 2007	678,177	14,026	6,135	10,600
Serbia	1 January 2007	7 400 000	88 361	77,280	10,400
Kosovo	1 January 2007	2,126,708	10,908	4,000	1,800

CEFTA 2006 membership.[71]

Criteria for CEFTA 2006 membership (World Trade Organisation membership *or c*ommitment to respect all WTO regulations, any European Union Association Agreement and Free Trade Agreements with the current CEFTA member states)[72] enable creation of free trade and unique market on the area of Southeast Europe.[73]

So, the closer relationship between Bosnia and Herzegovina and EU, that concerns introducing of market lows and institutions will enable her to access into wider international markets and membership into WTO. Cooperation between Bosnia and Herzegovina and its neighbours on economic principles and fulfilling of " *Stabilization and Association Agreement'' conditions* and CEFTA integration will bring her a status of *"Acceding Country'' of* EU.[74] All those factors will be very attractive for higher FDI entrance into B&H.

[71] http://en.wikipedia.org/wiki/Central_European_Free_Trade_Agreement

[72] The current criteria for CEFTA membership were determined at Zagreb meeting in 2005.

[73] B&H also has free trade agreements with Turkey, as well as preferential export regimes with USA, Japan, Canada, Switzerland, Australia, Norway, New Zealand, Russia and Iran. According to the Interim Agreement, the preferential export regime with the European Union is in force, which provides that all goods of B&H origin that fulfill EU technical-technological standards and conditions, can be imported to all EU countries without any quantitative restrictions and without paying customs and other similar duties. Source: Foreign Investment Promotion Agency of Bosnia and Herzegovina.

[74] B&H foreign trade is concentrated on its neighboring countries and EU 27 members (93.1% of import and 76.9% of export).; The EU is Bosnia and Herzegovina's biggest trading partner, with total trade of around 5 billion euros in 2007. In 2007, imports coming from the EU made

5. The restrictions for higher FDI entrance into B&H

FDI entrance is extremely sensible on uneconomic problems that Bosnia and Herzegovina has been affected by (corruption, political instability, complex bureaucrat procedures etc.). That is a consequence of the three major transition processes (transition from war to peace, transition from a socialist command economy to a market-oriented economy and transition from being a part of a large nation to become an independent country with its own institution).
Besides that, Bosnia and Herzegovina is too small and disconnected market with a small purchasing power which also isn't favourable for FDI entrance. Bosnia and Herzegovina has very complicated state system (unknown in world history and legal science), and the direct consequences of that are many restrictions for foreign investors in Bosnia and Herzegovina. The best confirmation of that can be seen through World Bank's the Doing Business project.[75] The Table 3 shows the B&H position among 178 countries which were analysed by comparing regulation in their economies.

Table 3.

Ease of Doing Business	**Doing Business 2008 rank**	**Doing Business 2007 rank**	**Change in rank**
Doing Business	**105**	**105**	**0**
Starting a Business	150	147	-3
Dealing with Licenses	150	150	0
Employing Workers	114	115	+1
Registering Property	144	143	-1
Getting Credit	13	12	-1
Protecting Investors	83	81	-2
Paying Taxes	142	143	+1
Trading Across Borders	53	67	+14
Enforcing Contracts	126	125	-1
Closing a Business	61	69	+8

Doing Business project (B&H position among 178 countries).[76]

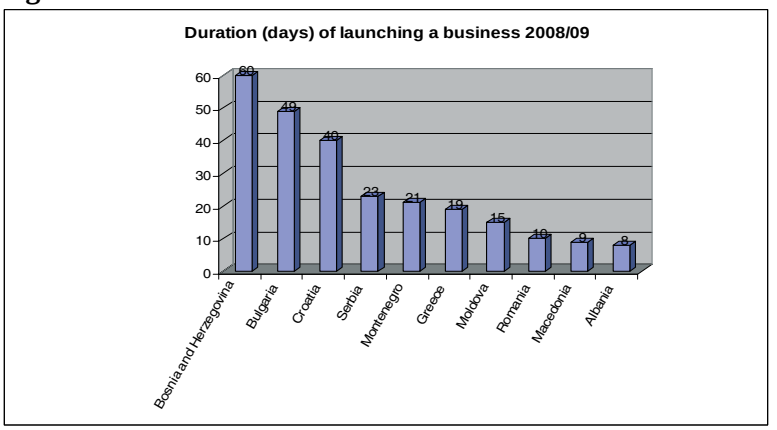
So, the starting a new business in Bosnia and Herzegovina takes the longest duration in relation to another countries in the region.

up 66.7% of total imports by Bosnia and Herzegovina, while exports to the EU accounted for 71.4% of its total exports. Source: Ministry of Foreign Trade and Economic Relations.

[75] The Doing Business project provides objective measures of business regulations and their enforcement across 178 countries. The team works closely with thousands of professionals around the world. http://www.doingbusiness.org/Documents/CountryProfiles/BIH.pdf

[76] Source: http://www.doingbusiness.org

Figure 3.



Source: http://www.doingbusiness.org

B&H government has to simplify the procedures for doing business and grow the financial security for foreign investors as well as the number of their investments projects.[77]

6. Conclusion

Bosnia and Herzegovina is a transitional country which has applied the neo-liberal concept of economic development where the FDI entrance is one of the main items. But, Bosnia and Herzegovina is burdened with a many non-economic problems (for example: complex state system, corruption, duration of launching a business …) and economic problems (for example: disconnected market, overly foreign trade liberalization, inappropriate macroeconomic policy as a whole) which restrain higher foreign investing activities. But, relatively high amount of natural resources which is owned by Bosnia and Herzegovina and its good geopolitical place can offer very attractive location for green-field investment. But, that should be followed with an appropriate macroeconomic policy in the sense of clysters industries creating and simplified procedures of launching a business. In that way, Bosnia and Herzegovina can significantly improve investment climate and become one the most attractive country for investing in the region of Southeast Europe.[78]

[77] The number of investment projects in Western Balkans was (1997-Q1 2006): Croatia 84, Serbia and Montenegro 70, Bosnia and Herzegovina 40, FYR Macedonia 11, Albania 8.; *Attracting Investment to South East Europe – Survey of FDI Trends and Investor Perceptions, FIAS* – The Multi – Donor Investment Climate Advisory Service – The World Bank Group, Washington, DC, November 2007. p.14

[78] The top Souteast Europe priorities for investing climate improving are: political stability, EU integration and infrastructure improvements.; Source: South East Europe Investor Perceptions Survey,; http://www.worldbank.org/

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6. http://www.worldbank.org/
7. http://www.doingbusiness.org
8. http://www.cbbh.ba/
9. http://www.fdi.net/

GLOBAL CRISIS AND NATIONAL RESPONSES CASE OF CROATIA

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Abstract

In terms of its effects so far the global economic crisis is stronger and deeper than the economic disturbances at the time of the Great Depression. Additionally, it takes place under the conditions of a much higher level of connection and complexity of interrelations compared to the events in the period from 1929 to 1933. It started as a segmented phenomenon in two aspects: in one country – the USA and in one sector – financial industry. However, in less than a year it became global in terms of territorial coverage and universal in terms of its effects, which means that it entered the area of real economy. It has had a significant impact on the decrease of growth and employment rate and the decrease of production and exports.
However, even though this open crisis has become an evidently *global* phenomenon, it is also clear that, with all the discussions on the future global configuration of control and early detection of signals of economic disturbances, today and now every state is seeking, identifying and taking specific measures in the sphere of its national economic policy. This task lies ahead of the Republic of Croatia under the conditions that include an additional challenge: structural imbalances which, for various social and economic reasons, have been transferred from one term to the next term of office of the next legislative and executive branch of power, ever since mid-90s of the last century.

JEL classification: D41, F12

Keywords: global crisis, financial sector, real sector, European Union, national economy, structural reforms, tools for change.

I. INTRODUCTION

Regardless of the geographic position, current level of development or the level of attained and generally accepted democratic standards, every country is focused on the issue of economic growth and sustainable development.
The sudden onset of the financial crisis pushed, virtually *over night*, the issue of the overheated boom and consequently the issue of high and continuously growing inflation rates out of the agenda of the open issues of governments in Europe, Northern America or the Far East. All of these issues were replaced first by awareness and then by concern and responsibility of tackling the fact that extended economic crisis grew into the crisis of the real sector. This has

brought quite specific effects, first with regard to consumer confidence and their buying decisions, and then, consequently, the crisis moved to increasingly broad business sector segments. The utilization of production capacities, sustainability of the employment level, liquidity and deepened effects (multiplier) have also led to both some new views and new solution proposals in terms of the doctrine.

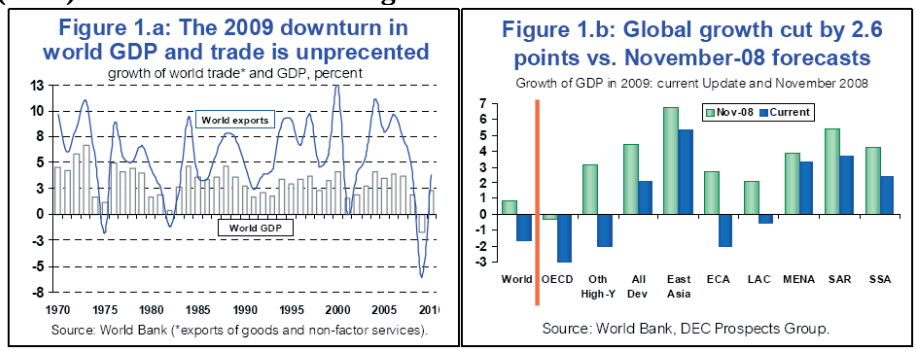
The role of government, state interventionism and protectionism of this or that type, ranging to interventions in the ownership structure in the financial and real sector have, again literally *over night*, become models of behaviour which seemed unthinkable and unfeasible even yesterday. However, this is a new reality which has become only a threshold for deliberating new measures and activities, depending on the overall developments, in particular when it comes to the interaction between the largest and most developed states that are gathered at this moment in the Group of Twenty. How to position itself under such circumstances is the question regarding the Republic of Croatia, with its economy in the process of transition undergoing intense structural changes and adjustments on its road to the EU accession, that all important players at the national scene are occupied with: starting from *decision makers* at the political scene, in the business sector and trade unions, to *opinion makers* and, ultimately, to every thinking citizen.

How to find a solution at the relation between transition – globalisation – EU adjustments – economic crisis, is a challenge requiring solutions to be found in times and under circumstances that increasingly reaffirm the syntagm – think globally, act locally. How to act externally and internally, how to find the right answers and identify the right actions, is the basic common responsibility for the executive branch of power and the economic science.

II. GLOBAL AND THE EU HORIZON

The economic growth forecasts for 2009 are subject to continuing review. The current assessment is included in the below stated values:

Charts 1 and 2. World GDP and trade growth rates – projected values (2009) and corrections with regard to the forecasts from November 2008.

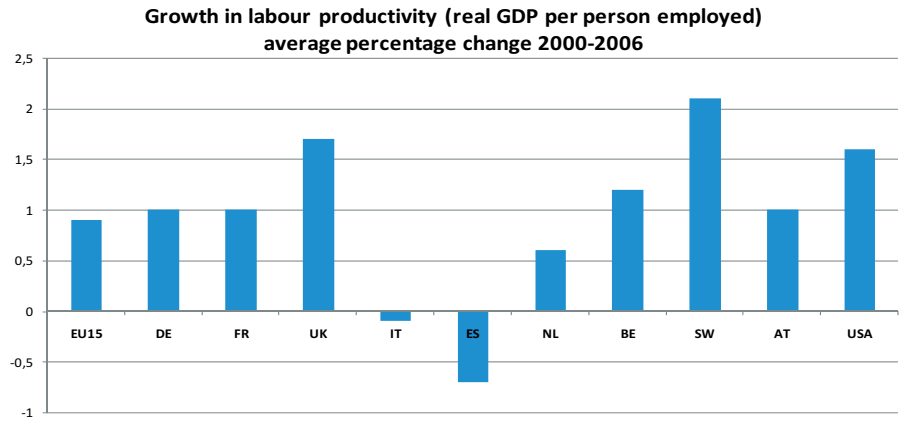


Source: World Bank: Global Economic Prospects 2009 – Forecast Update. March 30, 2009. p. 1 http://siteresources.worldbank.org/INTGEP2009/Resources/5530448-1238466339289/GEP-Update-March30.pdf

It is evident that, since the crisis originated in the USA, the financial sector downturn can and must first be stopped there, and then the same processes of stabilisation at first and then establishment of trust and the start of economic activities may be established in other parts of the world as well.

The position of the European Union was defined in 2000 as „... the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth with more better jobs and greater social cohesion". Successful implementation, including ups and downs, of such indicative and strategic position has started, and the results achieved in the area that describes the results achieved in the aggregate – growth in labour productivity – demonstrate that.

Chart 3. Growth in Labour productivity (real GDP per person employed) - average percentage change 2000 – 2006



Source: European Growth and Jobs Monitor, Allianz Dresdner Economic Research, The Lisbon Council, Frankfurt, 2009, str. 13

The results that are above the average have been achieved in Sweden and Great Britain; it should be noted that the EU-15 growth in the aggregate was substantially below the growth achieved in the USA in the same period of time; Italy and Spain considerably lag behind, and the results in the Netherlands are (unexpectedly) modest.

A more detailed analysis would show that the main reason for this lagging behind is to be found in the low productivity growth in services, which accounts for more than two thirds of the overall economic activity in this area. This segment, along with the (new) challenges on the EU scene (energy, environment, logistics...) constitutes one of the major strategic goals and lines of action for the term of office of the new European Commission (starting from the second half of 2009).

III. CROATIAN REALITY AND LINES OF ACTION

The Republic of Croatia has encountered the financial crisis under circumstances of cautious monetary policy and, consequently, of stable national banking system. The regulatory body and the commercial banking monitoring system received domestic and international awards for such policy. The state guarantee for deposits of citizens amounting up to HRK 400,000 (introduced in autumn 2008) ensured the stability of citizen deposits and, accordingly, it ensured a balance between deposits and placements of funds within the national financial system and framework.
It is a much more complex task to deal with structural challenges that have been present for more than a decade and may be summed up in the estimates for the fiscal years 2009-2012 (*according to: World Bank, Country Partnership Strategy for the Republic of Croatia for the Period FY09-FY12,* http://www.mfin.hr/adminmax/docs/hrva.%20verz.pdf).

1. Croatia's large public sector poses one of the main challenges to sustained growth.
Public expenditure accounts for nearly half of the GDP, some nine percentage points above the average for EU10, reducing the fiscal space to finance EU accession requirements. Further fiscal consolidation is required due to Croatia's relatively high tax burden: taxes-to-GDP ratio is above 40 percent, which puts it on
par with the EU15, but approximately 8 percentage points above the EU10.

2. *Prudent fiscal policies can help ease Croatia's large current account deficit and external debt.*

In the long term fiscal reforms aimed at reducing public expenditures will be critical to containing Croatia's vulnerability. Enhancing the efficiency of public expenditure management, in particular moving from input budgeting towards performance-based budgeting, could help the fiscal consolidation process.

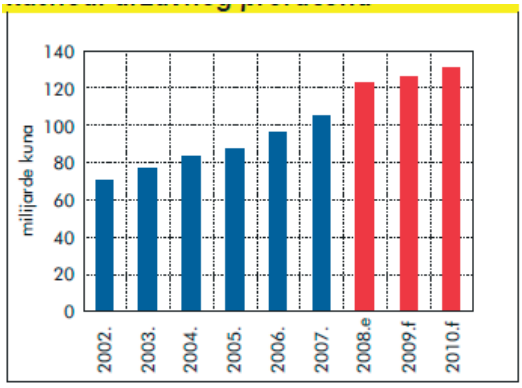
3. Rationalization of public expenditure will require serious efforts to reform Croatia's health sector, social systems and state aid policies.
The main challenge in the medium term will be to maintain and improve health outcomes while achieving a steady level of public spending under a sound fiscal policy framework. Similar issues face Croatia's social benefits system, which offers more than one hundred programs and is hindered by weak targeting efficiency, a complicated and costly administration, and disincentives for labour market participation — all of which have contributed to poverty and inequality in the country.

4. *Given the Croatian economy's high degree of euroization, its financial sector remains vulnerable to interest and exchange rate risks.*
Exposure to interest or exchange rate fluctuations could raise the cost of domestic lending, and in turn, constrain private debtors' ability to service their loans. With loans to firms and households denominated in or indexed to foreign currency and largely unhedged, credit risk stemming from foreign currency exposes Croatia's banking system to external financial shocks.

5. While macroeconomic sustainability is needed for growth, faster growth leading to higher future fiscal revenues is in turn needed for macroeconomic sustainability.
Hence, strengthening the microeconomic foundations of growth is of critical importance. There are "sources" of additional growth that key players of overall growth in Croatia could and must seek in factors such as: (a) increase labour participation by addressing the disincentives for workers' participation in the labour market while reducing restrictions to facilitate the adjustment of the labour force to the business cycle; contain the cost of labour and address skills mismatches through vocational education and training, and life-long learning; b) enhance total factor productivity by continuing enterprise restructuring, further reforming product market regulation, improving the corporate governance regime, streamlining bankruptcy conditions, and reducing the administrative obstacles to business; (c) deepen trade integration by promoting export-oriented FDI and developing the supply of exportable goods with expansion of trade related services (standards and quality, knowledge of foreign markets) and the reduction of logistics costs; and (d) foster technological progress by expanding private R&D, improving conditions for the collaboration between universities and industry, and enabling the start up of science-based companies.

The above stated factors in Croatia require immediate and systematically conducted and organized structural reforms. Each of the above stated points indicates that it is inevitable to change the status that, by inertia, has continued for more than a decade and a half, after the intervention Anti-Inflation Programme. Because the main goal of that document and the programme was a short-term goal: to stop hyperinflationary trends (in the first year) and then continuously open the way for the balanced economic growth. From a synthetic point of view, adjustment of public expenditure to real possibilities of the fiscal capacity of the national economy is essential and absolutely necessary, which is clearly confirmed by the data on the growth of the state budget expenditure in the previous period of time in the aggregate substantially above the achieved real GDP growth.

Chart 4. Government Budget Expenditures



Source: Ministry of Finance of the Republic of Croatia, Raiffeisen Research, based on RBA analysis, No. 32, January 2009, p. 10

Any turn for the better will have to be based on the basic commitments:

a) To drastically improve the efficiency in the spending of budgetary funds by restructuring the relevant sectors: pension system, healthcare system, education, social benefits, subsidies...

b) To start (in case of a major part of the public sector) or to continue (in case of the healthcare system) structural reforms that, with an increased level of prudence in spending, also open the possibilities to provide other sources of funding, including the participation of direct beneficiaries

c) To fast-track the adoption new know-how and to introduce organizational system making it possible to raise the level of system performance, alongside with financial cost-cutting.

IV. TOOLS FOR CHANGE

Any achievement of permanent development goals of a society such as stable and sustainable GDP growth, increase in the prosperity of a nation, higher employment rate, fair and equitable distribution of income is not possible without a successful economic policy in the areas such as complex incentives to economic growth, raising the level of productivity, improving the level of qualification structure of the labour force, establishment and operations of institutions promoting investments and exports and developing and maintaining the concept of sustainable public finance.

The current situation of the global economy and, consequently, of (individual) national economies again raises the issue of the selection and application of tools (incentives) that may in the aggregate apply the instruments serving the purpose of achieving the above stated goals. This set of instruments, the tool for change is (again, more than ever!) what the industrial policy has become. How to design it, which are its up-to-date principles, may be inferred from the ten principles for its successful design (*according to D. Rodrik: Industrial Policy for the Twenty-First Century, Harvard University, September 2004, str. 8.):*

1) Incentives should be provided only to „new" activities
2) There should be clear benchmarks/criteria for success and failure
3) There must be a built-in sunset clause
4) Public support must target activities, not sectors
5) Activities that are subsidized must have the clear potential of providing spillovers and demonstration effects
6) The authority for carrying out industrial policies must be vested in agencies with demonstrated competence
7) The implementing agencies must be monitored closely by a principal with a clear stake in the outcomes and who has political authority at the highest level
8) The agencies carrying out promotion must maintain channels of communication with the private sector
9) Optimally, mistakes that result in „picking the losers" will occur
10) Promotion activities need to have the capacity to renew themselves, so that the cycle of discovery becomes an ongoing one.

A specific case is given, which on the whole presents the necessity of synchronized implementation of industrial policy measures.[1]

[1] Source: *D. Rodrik: Industrial Policy for the Twenty-First Century, Harvard University,* September 2004, p. 8, 12,13

Box 1. Application of industrial policy,
specific case: Taiwan economy

„Consider a recent example taken from the pages of the New York Times. Taiwan has traditionally grown and exported sugar, an industry that has recently fallen into hard times due to low international prices and other reasons. What should now be grown in the fields to replace the sugarcane that is the source of income for many farmers? In many countries, the result would have been a depressed real sector, increasingly indebted farm households, and a drag on the economy. In Taiwan, the response has been a $65 million government investment program to develop a world-class orchid industry. The government pays for a genetics laboratory, quarantine site, shipping and packing areas, new roads, water and electrical hookups for privately-owned greenhouses, and an exposition hall – in fact everything except for the cost of the greenhouses. It also provides low-interest credit to farmers to help them build the greenhouses.“....
...„ Many projects require simultaneous, large-scale investment to be made in order to become profitable. Return, for example, to the orchid case in Taiwan. An individual producer contemplating whether to invest in a greenhouse needs to know that there is an electrical grid he can access nearby, irrigation is available, the logistics and transport networks are in place, quarantine and other public health measures have been taken to protect his plants from his neighbors' pests, and his country has been marketed abroad as a dependable supplier of high-quality orchids. All of these services have high fixed costs, and are unlikely to be provided by private entities unless they have an assurance that there will be enough greenhouses to demand their services in the first place. This is a classic coordination problem. Profitable new industries can fail to develop unless upstream and downstream investments are coaxed simultaneously. The Taiwanese government's investment upstream aim precisely to overcome this obstacle.”

Apart from the industrial policy as an important economic development tool and the driving force for changes, i.e. everything that needs to be done in order to form a new economic matrix, it is also necessary to establish social dialogue and partnerships in dealing with the current situation, thus providing the basic and necessary framework for managing future changes. Such concept of open communication, clear identification of goals and methods for their achievement is the only way to raise the degree of probability of attaining a broader consensus that in turn makes it possible to accomplish changes. This is evident when we look at the examples of economies of big countries, but it also applies as a general rule. The same applies to the Croatian circumstances under which it

is also possible to successfully implement structural reforms and to adapt to external crisis developments.

V. CONCLUSION

It is evident that today the world is faced with turbulent economic and geo-political developments, in which the speed and intensity of changes and interrelations are higher and stronger, deeper and more significant than ever before. The strong neoliberal wave of thinking and behaviour that was intensely launched in the early 80s of the past century (key players: R. Reagan, M. Thatcher) implied a weakening and marginalizing of the role of government in economic and overall development.

The globalization processes that were initiated by new technology and communication tools and that gained momentum put focus on the integration of the market of goods and service, labour and capital, along with an increasingly strong role and significance of global companies. The dominance of the financial sector over the real sector started in the same period of time and ceased drastically *over night* in the present. Social disparities on the one hand and *consumerism* as a philosophy of life on the other have substantially grown in strength, supported by all types of media services.

The key question has now become the following question: how to go on? How to create an intelligent role of government under the circumstances? How to determine the boundaries of its responsibility for the stability of the overall economic system? At the same time, how to efficiently take account of taxpayers' money that is made available in order to stabilize the weakened financial sector? How can an adequate regulatory framework be attained at the global level (G-20)? The present time also creates some new theoretical paradigms on the basis of the present (painful) experiences.

In this framework the Republic of Croatia is a *niche player* and has to find its place by using *best practices* from different sources and situations that are acceptable for the country in terms of its development and culture. Using the crisis as the right opportunity to implement reforms, forming its own industrial policy and consistency in achieving the set goals must become the backbone of its development strategy within the above mentioned rectangle: transition – EU membership – global crisis – national structural reforms. The challenge is an extremely tall order, and the time available is limited.

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Financial Economics

INFLUENCE OF LEASING COMPANY IMAGE ON THE LEASING PACKAGE SALES

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Abstract

The goal of the paper is to analyze the influence of leasing company image on the volume of sales of leasing service. The paper points to the significance of a company image in modern business, where image gains an extreme significance in buyer's final decision-making on accepting leasing services.
In general, leasing services have characteristics similar to other kinds of services. They are distinguished by providing a solution for financing problems when acquiring fixed assets. In the stage of shortage of ready monetary resources, companies can acquire the needed asset without major engagement of working capital. A sale of leasing service is typically made through an indirect sales channel. Buyers decide for one or another leasing type. The goal of the paper is to answer the question as to what extent the image of a company that offers leasing services influences sales of these services in using indirect or direct sales channel.
The study used primary research in leasing service users. A scientific analysis will establish which factors influence the growth of leasing service image and to what degree they do so.

JEL classification: G32, O16

Keywords: Leasing service, image, image factors, image management, leasing service sale

1. INTRODUCTION

"Image is a set of beliefs, ideas and impressions that a person has, and that are associated with a given object. People's views and activities toward a given object are greatly conditioned by this object's image" (Kotler; 2001, 607). The leasing service market is characterized by the increasing scope of offer and new players' entry into the market. Only the successful and high-quality offer will be transformed into sale. The paper establishes the influence of a company image on the sale of services on the example of a B-H leasing company.
Leasing service is the service associated with the provision of monetary resources in the acquisition of necessary equipment. Essentially, the leasing company buys the equipment and pays for it to the supplier. The lessee rents the purchased equipment from the leasing company, and pays monthly annuities to

the leasing company for the renting service. In B-H, leasing services are typically sold through the indirect sale channel, whereby individual buyers decide for one or another leasing type.
The subject of research itself provides the answer to the question as to what extent the image of the company providing leasing services affect these services sales when using direct and indirect sales channels. "Understanding image and significance for public opinion is important insomuch as it is through them that an organization communicates with all its stakeholders …" (Corley&Cohran&Comstoc;2000)

2. CONCEPT OF LEASING SERVICES AND LEASING SALES CHANNELS

Leasing service is the financing of a leasing arrangement user in purchasing equipment, which can include: various machines for manufacturing, trucks, cars, buses, passenger vehicles, IT equipment, machinery for construction, agriculture, forestry, etc. Leasing can be defined as a contractual relationship between two parties, the user (lessee) and the owner (lessor) of assets that are the subject of the leasing arrangement, whereby the user acquires the right to use the assets and takes on the obligation to make a series of periodical payments to the owner, i.e. the leasing company during the leasing period (Tvrtković;2002., 13).

Basic leasing services are (Vujić; 2006, 19):
1. Operational leasing – is developed through the: 'use, return and take a new one' motivation. In the operational leasing, there is no transfer of ownership over the object of the lease. Upon the termination of the agreed leasing term, the lessee returns the object to the lessor, which the latter can sell or re-lease.
2. Financial leasing - is based on the: 'Use it and keep it' motive. This form of leasing immediately provides for taking over the ownership of the leased property, but only upon the expiration of the agreed term.
3. Sell it and lease it back - In order to improve liquidity and obtain cash, companies frequently sell their capital asset to a leasing company and then lease the same asset for use. In this way the company obtains cash and keeps using the same asset.

Following participants appear in the leasing service sales channels:
a) Manufacturer of the leased property (cars, freight trucks, cranes, construction machinery, manufacturing machinery and equipment, etc.),
b) Merchants (dealers), who sell leased property,
c) Buyers – legal persons (registered companies) – lessees,
d) Buyers – natural persons (citizens, individuals) – lessees,
e) Leasing companies – lessors.

Sales or distribution channels can be formed as:
a) Direct sales channel, where the buyer turns to the manufacturer in order to purchase the equipment, include the leasing company only in the part of the purchase financing, while the buyers select the necessary equipment or machines or the asset themselves. This channel can mostly be used by larger manufacturers, when buying a greater number of machines or a higher value.
b) Indirect sales channel, when buyers – legal persons or buyers – natural persons address the dealers with the desire to purchase suitable machine, equipment or car. To finance the purchase, the buyer can use the leasing arrangement of any leasing company. The dealer has offers of various leasing companies, and the end buyer thus independently selects the leasing service of this or that leasing company.

3. INFLUENCE OF A LEASING COMPANY'S IMAGE ON LEASING SERVICE SALES

Image is a set of beliefs, attitudes and impressions that others have about us. We can speak of the image of a company, person, product, retail store, etc. In our case, we will discuss the image of a leasing company.
"Overall, a series of perceptions influences the creation of image. Image is a general perception of a product or enterprise, created based on information and experiences, and previous consumption. Image is a very important concept in the modern marketing, since the success of the entire company, new product, competitive relations, prices, etc. often depend on it"(Tihi&Čičić&Brkić; 2006, 169.) . "Enterprise image is the overall impression of an enterprise represented by its identity and all its other identifiers significant for the target audience. Enterprise image is an overall picture of an enterprise which encompasses attitudes, views, experiences, beliefs, prejudices and feelings that individual public groups (consumers, dealers, financers, suppliers and the broadest public) have about the enterprise. Enterprise image is a means which projects the picture of the enterprise, which communicates and transmits the enterprise values to the target segment. Enterprise image is essentially an impression of the enterprise based primarily on the enterprise identity. Based on its image, an enterprise is usually recognized and the whole organization, its operations and products are evaluated" (Kesić; 2003, 107).
"Corporation image as such has two major components: a functional and emotional one respectively. The functional component is associated with palpable characteristics that can be measured easily, while the emotional component is associated with the psychological dimension that is manifested through feelings"(Leblanc; 2001).
The supplier is constantly faced with the question as to what will stimulate a buyer to buy our product when numerous similar or same products are being

offered. Image is what will ultimately influence the buyer to buy a specific product. “Mr. David Ogilvy’s idea is that brands have their own personality and their own image that is reflected in that the sale itself is determine not only what is actually offered by products and services but rather what people or reference groups this about this product or service. In the marketing terminology, products and services offer both functional and psychological advantages of satisfaction”(Dowling; 2001, 17).

Leasing company image is the overall picture of a leasing company that encompasses attitudes, views, experiences, beliefs, prejudices and feelings that dealers, customers-legal persons, customers-natural persons, potential buyers (companies and citizens), suppliers, bankers and entire public have about the company. “Corporate image is a junction of beliefs and emotions about an organization”(Dowling; 2001, 19).

In its positioning strategy, a leasing company should use the criterion of distinguishing its offer from the others. In order to highlight the differences in the offer, a leasing company uses the type or manner of the service not offered by the competition. If the competition does offer the same kind of service, the leasing company offers it in a better and different way. Emphasizing the difference crates the impression of significant differences in the leasing offer, although they are basically minimum or even insignificant in creating convenience. It is generally believed that only one difference should be promoted. This is based on the fact that customers and prospects remember only “number one”.

Results of the research into the overall company image determined factors that are the most significant for the overall image of a leasing company. The significance of an individual factor for the overall company image was ranked according to the number of responses (as percentage) classified into two groups: the first group (important, very important, extremely important), and the second group (unimportant or slightly important). The first group consists of the first five factors that have the same significance for the overall image. All the respondents described these factors as important, while none claimed that it is unimportant or slightly important. The second group includes factors with a great number of responses describing them as important, very important, and extremely important. The third group is made up of the following factors: price of the service, innovation (product in step with time) and additional services.

The first group consists of the following five factors: speed in processing applications, public relations, simple procedures and forms, professionalism, and grace period. These five factors have an approximately equal influence on the overall leasing image, and it therefore makes no difference which one of them a leasing company will use in promotion as the “number one” in B-H. Other factors also lead to image increase and can be used for advertising purposes: longest payment period, smallest number of guarantors, highest-

quality service, simplest security, lowest price of the service, the greatest number of additional services.

Table 1. Order of significance of individual factors for the overall image of VB LEASING BH company is (Vujić; 2008, 161-171):

Rank	F A C T O R	FIRST GROUP	SECOND GROUP
		important, very important, extremely important	not important, slightly important
1.	Application processing speed	100%	0%
2.	Public relations	100%	0%
3.	Simple procedures and forms	100%	0%
4.	Professionalism	100%	0%
5.	Grace period	100%	0%
6.	Payment term	98,9%	1,1%
7.	Number of guarantors	98,9%	1,1%
8.	Service quality	98,6%	1,4%
9.	Marketing communication	97,8%	2,2%
10.	Type of collateral	97,8%	2,2%
11.	Service price	92,5%	7,5%
12.	Innovation (up-to-date product)	92,0%	8,0%
13.	Additional services	90,2%	9,8%

The good, quality and favourable image of a leasing company has effect on: increase in service value, accurate focus on the company, which cannot be confused with similar messages by competition. It also affects customers' awareness and perception that they will solve their problem by using the service provided by the particular leasing company. In this way, a leasing company presents itself to public and is distinguished from competition.

4. MANAGING LEASING COMPANY IMAGE

In modern world business trends, competition for customers in the field of non-price elements is increasing. If companies want to survive in the market and be successful, they must use the marketing strategies that are not easy to emulate. One of few things that competition cannot "take over" and emulate is the well-conceived image.

In modern world business trends, competition for customers in the field of non-price elements is increasing. If companies want to survive in the market and be successful, they must use the marketing strategies that are not easy to emulate. One of few things that competition cannot "take over" and emulate is the well-conceived image.

Management of leasing company image includes following activities:

a) Planning image (analysis of the existing image, setting image goals, defining measures and activities, determining alternatives, etc.),
b) Organization of activities in achieving image,
c) Defining human resources in conducting image-related activities,
d) Carrying out and implementation of planned activities, and
e) Control of carrying out the plan, particularly of achieving the set image goals.

In a leasing company, image is managed through following stages:

a. analysis of present image,
b. analysis of present conditions in actual operations,
c. establishing differences (if there are any),
d. setting goals in terms of the company's image,
e. setting alternative goals and assessments,
f. making the final decision about image goals,
g. conducting activities in actual operations,
h. conducting activities in communication,
i. control of carrying out the plan and planned image goals, and
j. possible corrections in carrying out the set plans and image goals of the leasing company.

Successful methods for analyzing the competitiveness of a leasing company image are SWOT analysis, and Benchmarking (Babić;2004,289). Through SWOT analysis, the leasing company learns about the strengths and weaknesses of its own image, as well as about opportunities for improving it and threats to the future image. Benchmarking is the analysis of competitiveness. It implies a continued process of comparing one's own products and procedures with best solutions by competition, aimed at improving one's own operations and increasing image.

Based on the comparison between the desired image goal and the actual image, controllers (typically top manager) undertakes appropriate activities:

a. If deviations are negative, i.e. if the planned tasks are not carried out, measures and actions are taken to turn the trend of carrying out the planned image goals towards the achievement of the planned goals, and

b. If the deviation is positive, and if the planned image goals are being achieved, they should support the activities in order to contribute to even better achievement of goals, i.e. to raise the leasing company image.

"A customer is mostly affected by the created perception of an enterprise image; it determines which enterprise he will select, and the loyalty to the selected enterprise. Owing to this, goals of the image strategy are **creating differentiating advantages** (emphasizing features by which a company is distinguished from others), **building desired reputation**, and **gaining and**

retaining customers' trust, which directly results in the company's survival in the market, and thus in its profitability"(Babić;2004,23).
"People create ties with companies and place them, in their perception, to given positions. Others may see the same companies in an entirely different light" (Spector; 1961). Through image, a leasing company communicates with public, i.e. public learns what the company is involved with, how it operates, what quality of products or services it offers, what its overall reputation is.

5. CONCLUSION

The paper points to the significance of a company image in modern business, where image gains an extreme significance in buyer's final decision-making on accepting leasing services. A leasing company's image is decisive in the supply and sales of leasing arrangements. It is therefore extremely important for a leasing company to improve its image. Existing customers and prospects can solve the problem of financing the purchase of cars, machinery, equipment, etc. through a leasing arrangement of a particular leasing company.

Using the collected data and results of the research, we can see that a company's image can be improved through:

- increasing the application processing speed,
- improving public relations,
- maximum simplicity of procedures and forms,
- increased professionalism,
- introducing the grace period,
- longer terms of payment,
- smaller number of guarantors or not requiring guarantors,
- increasing service quality,
- improving marketing communications,
- accurately determining of the type of collaterals and decrease thereof,
- adjusting the service price to its scope and quality,
- supporting innovation and constantly introducing new, up-to-date services, and
- providing additional services (free technical check-up, servicing, etc.)

Besides introducing actual services,, which will be provided fast and efficiently, it is necessary to continually develop marketing communication so that a broader circle of prospects could learn about our services in the field of leasing and create a favourable image of the leasing company. In improving our image, it is necessary for the messages to prospects and public correspond with the actual conditions in providing services so that the public and prospects could identify the messages with the actual conditions.

It can be concluded that a company's image affects the sales of leasing arrangements through factors with varying intensity of influencing the overall image of a leasing company. Based on this paper, it is possible to focus on specific areas of leasing company operations in order to improve the overall image. It should also be noted that the improvements must be made within individual factors, since the overall image is a sum of all the individual factors.

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MIT AKTIEN EFFEKTIV DIE ALTERSVORSOGE SICHERN

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Abstract:

For the past ten years the politicians have been advocating private pension plans and pushing a new system embodied in a range of models, e.g. pensions for the self-employed, for employees, as well as company pension plans. In such cases, the contributions are put into personal accounts and capitalized. Capital accumulation depends predominantly on two factors, namely the yield and the duration. The compound interest effect ensures that long-term saving will result in considerable accumulated capital, which is then paid out as pension. On the other hand, when the final amount has been accumulated, the mathematical effect of compound interest will result in a situation where there are degressive capital requirements for a pension if the duration is considerable.

JEL classification: G23, G32

Keywords: capital, interest, private pension plans, capital multipliers, capital requirements

Das deutsche Volk altert dreifach: Es gibt erstens immer mehr ältere Menschen, die zweitens im Verhältnis zu immer weniger Jüngeren drittens immer älter werden. Schon heute an die Zukunft denken ist überlebenswichtig, denn der Rente drohte der Kollaps. Nur durch schmerzhafte Korrekturen in der Rentenformel („Riester- und Nachhaltigkeitsfaktor“) und durch Staatssubventionen konnte das deutsche Umlagesystem gerettet werden. Selbst durch hohe Staatszuschüsse ist die gesetzliche Rentenversicherung für die allermeisten Beitragszahler ein sehr schlechtes Geschäft: Das einbezahlte Kapital wird weder kapitalisiert noch sind die Beiträge individuell geschützt. Die Beiträge werden in einen allgemeinen Topf verbucht und gehören somit der Gemeinschaft der Beitragszahler. Ein Kapitalstock wird nicht gebildet. Das sogenannte Umlagesystem lebt heute buchstäblich von der Hand in den Mund. Verwalter ist der Staat, der in regelmäßigen Abständen mittels Reformen das Notwendigste flickt. Demografische und soziale Entwicklungen verursachen seit Jahren eine Finanzierungslücke, die sich immer mehr verschärft. Arbeitslosigkeit, lange Ausbildungszeiten und Frühpensionierungen einerseits und die steigende Lebenserwartung andererseits drücken das Umlagesystem immer wieder an Grenzen. Wahrscheinlich ist, dass die gesetzliche Rente immer mehr nur eine Art Grundversorgung darstellen kann.

Das Kapitaldeckungsverfahren kommt also in besonderer Weise einer hohen Lebenserwartung entgegen. Dabei gelten folgende Besonderheiten: Je höher der Zinssatz desto besser und mit zunehmenden Jahren steigt der Effekt stark an. Beispiel: Bei 10 % Rendite braucht ein 65jähriger für eine 10jährige Rente das 6,1 fache einer Jahresrente (so genannter Rentenbarwert), also für 10 T€ Jahresrente etwa 61 T€. Für die doppelte Laufzeit wird nur noch etwa das 8,5 fache, für eine „ewige" Rentenbezugsdauer nur das 10 fache benötigt - das sind etwa 100 T€. Grund hierfür ist, dass der Rentner bei sehr langer Rentenbezugsdauer faktisch nur vom Zins lebt und der Kapitalstamm fast nicht angetastet wird (vgl. unten Rentenbarwertfaktor).

Kapitalmultiplikatoren und Rentenbarwerte:

Kapitalmultiplikatoren nach Jahren bei 8 % Rendite (gerundet) $1{,}08^{50\text{ Jahre}} = 50$ $1{,}08^{60\text{ Jahre}} = 100$ $1{,}08^{65\text{ Jahre}} = 150$ $1{,}08^{70\text{ Jahre}} = 220$				
Kapitalmultiplikatoren nach Jahren bei 10 % Rendite (gerundet) $1{,}10^{50\text{ Jahre}} = 120$ $1{,}10^{60\text{ Jahre}} = 300$ $1{,}10^{65\text{ Jahre}} = 490$ $1{,}10^{70\text{ Jahre}} = 790$				
Rentenbarwert bei 8 % Rendite (gerundet)	10 Jahre: 6,7	20 Jahre: 10	30 Jahre: 11	Ewig: 12,5
Rentenbarwert bei 10 % Rendite (gerundet)	10 Jahre: 6,1	20 Jahre: 8,5	30 Jahre: 9,5	Ewig : 10
Lesebeispiel: Bei Geburt eines Mädchens werden Standardaktien weltweit diversifiziert im Werte von 10.000 € angelegt, um für das Alter vorzusorgen. Sofern die Aktien jährlich durchschnittlich mit 10 % rentieren, werden in 60 Jahren daraus etwa 3 Mio. € (Multiplikator 300). Dieses Kapital kann bei 10 % Rendite eine ewige Jahresrente von etwa 300 T€, monatlich also etwa 25 T€ speisen (Rentenbarwert von 10).				

Der von der Politik zusätzlich eingeschlagene Weg in die Kapitaldeckung ist also richtig. Anzustreben sind also hohe Kapitalrenditen, weil sich dadurch das Rentenproblem überproportional entschärfen lässt. Zur Lösung dieses Renditeproblems haben viele Untersuchungen folgende Regeln bestätigt.

Regel 1: Langfristige Anlageformen erwirtschaften mehr Ertrag als kurzfristige.

Regel 2: Aktien versprechen gegenüber allen anderen gängigen Anlageformen einen Renditevorsprung.

Nach vielen Untersuchungen gehören Aktien – breit gestreut – zu den rentabelsten Anlageformen.[1] Je nach Ein- und Ausstiegszeitpunkt kann man damit langfristig nominal zwischen 6 und 12 % erzielen, in besonders guten Phasen - wie z. B. in den 50er oder 90er Jahren - sogar über 15 %. Die durchschnittliche Rendite von Rentenpapieren liegt mit 5 bis 8 % weit darunter. Der Renditevorsprung der Aktie gegenüber einer Anleihe ist nicht nur empirisch feststellbar, sondern auch aus der ökonomischen Theorie erklärbar: Die Aktienrendite enthält eine Risikoprämie für das übernommene unternehmerische Risiko.

Renditevergleich 1926-1999[2]	**Vor-Steuer-Rendite**
Deutsche Standardaktien	10,7
Bundesanleihen	6,6
Dt. Geldmarktpapiere (ab 1950)	4,5

Quelle: Kaiser/Claessen, Die Bank 3/2001, S. 221

Aktien schlagen aber Renten nicht zu jeder Zeit. Das Deutsche Aktieninstitut DAI wertet laufend Studien zu Renditedifferenzen aus. Deren Ergebnis:[3] Entscheidend für abweichende Renditeergebnisse von Aktien und Renten sind

[1] Vgl. ***Siegel***, Langfristig Investieren, Finanzbuchverlag, München 2006, S. 24 ff , ***Bacher***, Bankmanagement kompakt, Konstanz 2007, S. 121. Zur Entwicklung und Rendite des DAX vgl. ***Deutsches Aktieninstitut DAI***, DAI-Factbook 2008 – Statistiken, Analysen und Graphiken zu Aktionären, Aktiengesellschaften und Börsen, Frankfurt 2008, 09.1; zur Aktien vs. Rentenrendite vgl. ***Deutsches Aktieninstitut DAI/Kachel, u.a.,*** Aktie versus Rente – aktuelle Renditevergleiche, Studien des DAI, Heft 26, Frankfurt 2004; ***Deutsches Aktieninstitut DAI/Kachel,*** Aktie versus Rente – langfristige Renditevergleiche, Studien des DAI, Heft 6, Frankfurt 1999; ***Deutsches Aktieninstitut DAI***, Rendite und Risiko von Aktiendepots aus DAX-Aktien – empirische Ergebnisse, Studien des DAI, Heft 3, Frankfurt 1998; ***Deutsches Aktieninstitut DAI***, DAI-Factbook 2008 – Statistiken, Analysen und Graphiken zu Aktionären, Aktiengesellschaften und Börsen, Frankfurt 2008, 09.4. Vgl. ebenso ***Dichtl/Schlenger,*** Aktien oder Renten?, in: Die Bank 12/2003, S. 809-813; ***Kaiser/Claessen,*** Aktien schlagen Renten, in: Die Bank 3/2001, S. 220-226; ***Kachel/Leven,*** 20 Jahre Dax, in: Kreditwesen 13/2008, S. 600-601; ***Wüst/Bacher***, Saisonalitätseffekte im deutschen Aktienindex DAX, in: FINANZ BETRIEB FB 11/2008, S. 748 ff.

[2] ***Kaiser/Claessen,*** Aktien schlagen Renten, in: Die Bank 3/2001, S. 221.

[3] Vgl. ***Deutsches Aktieninstitut DAI/Kache,,*** Aktie versus Rente – aktuelle Renditevergleiche, Studien des DAI, Heft 26, Frankfurt 2004, S. 12; ***Deutsches Aktieninstitut DAI***, DAI-Factbook 2008 – Statistiken, Analysen und Graphiken zu Aktionären, Aktiengesellschaften und Börsen, Frankfurt 2008, 09.3; Vgl. auch ***Wüst/Bacher***, Saisonalitätseffekte im deutschen Aktienindex DAX, in: FINANZ BETRIEB FB 11/2008, S. 750 ff.

erstens Beginn und Ende des jeweiligen Untersuchungszeitraums, zweitens die Anlagedauer. Die Wahrscheinlichkeit einer signifikant höheren Aktienrendite steigt bei zunehmender Anlagedauer: Bei einem Anlagehorizont von 5 Jahren sind es 67 % und bei 15 Jahren schon 76 %. Bei einem Anlagehorizont von 40 Jahren schlägt die Aktienrendite mit Sicherheit (100 % Wahrscheinlichkeit) die Rendite von Renten.

Risiko von Aktien

Rendite ist die eine Seite der Medaille, das Risiko die andere. Aktien gelten gemeinhin als risikoreich, das Hauptrisiko besteht im Kursrisiko. Zur Berechnung des Risikos wird üblicherweise die Schwankungsbreite um ihren Durchschnitt ausgedrückt (Volatilität).[4] Dabei wird mit Hilfe der statistischen Messzahl „Standardabweichung" die Schwankung von Renditen eines Wertpapiers oder Portfolios um ihren langfristigen Durchschnitt gemessen. Die Abweichungen werden quadriert, so dass große Abweichungen überproportional gewichtet werden. Die Berechnung erfolgt vielfach durch die auf ein Jahr bezogene Standardabweichung der relativen Kursdifferenzen. Da die Standardabweichung sowohl positive als auch negative Abweichungen vom Durchschnitt misst, stellt sie ein Maß für die Unsicherheit der zu erwartenden Erträge dar (Chance und Risiko!).

Das Konzept der Standardabweichung lässt sich durch die Zwei-Drittel-Regel veranschaulichen: Wenn die Renditen normalverteilt sind, liegen etwa zwei Drittel der Renditen zwischen dem Erwartungswert (Durchschnittsrendite) plus/minus der Standardabweichung. Je ein Sechstel der Renditen liegen ober- bzw. unterhalb dieser Grenzen. Je höher die Standardabweichung, desto breiter streuen die Renditen in beide Richtungen um ihren Mittelwert. Beachte: Verlangt man eine höhere Trefferquote als Zwei-Drittel, so verbreitert sich die Bandbreite stark. Aller Voraussicht nach liegen etwa 95 % aller künftigen Werte im Bereich zwischen dem Durchschnitt plus/minus der doppelten Standardabweichung!

Beispiel: Beträgt die Rendite p. a. eines Aktienportfolios 10 % und liegt die jährliche Standardabweichung bei 30 %, so liegen 95 % aller künftigen Jahresrenditen zwischen -50 % und +70 %.

[4] Vgl. ***Wüst/Bacher***, Saisonalitätseffekte im deutschen Aktienindex DAX, in: FINANZ BETRIEB FB 11/2008, S. 748/749; ***Weber,*** Genial einfach investieren, Campus Verlag, Frankfurt und New York 2007, S. 108 ff und S. 147/148 und ***Deutsches Aktieninstitut DAI/Kachel,*** Aktie versus Rente – langfristige Renditevergleiche, Studien des DAI, Heft 6, Frankfurt 1999, S.27.

Mittlerweile existieren für die wichtigsten Aktienmärkte auch Volatilitätsindizes.[5] Sie geben eine durchschnittliche Volatilität der Aktien bzw. Optionen wieder und drücken somit die Erwartungen der Marktteilnehmer über Veränderungen des Kassamarktes aus. Für den deutschen Markt existiert seit 1994 der VDAX. Der VDAX misst für die nächsten 45 Tage die erwartete Schwankungsbreite des DAX. Er ist in Prozent angegeben und kann mit dem Faktor 0,3511 annualisiert werden.

Formel: Spanne = (% Volatilität * Wurzel (45 Tage / 365 Tage) * aktueller DAX)

Beispiel: Ein VDAX von 20 % sagt bei einem DAX-Stand von 6000 Punkten aus, dass mit Schwankungen im DAX zwischen 5580 und 6420 Zählern gerechnet wird. Berechnung der Obergrenze bzw. Untergrenze nach obiger Formel:
Spanne = Abweichung = 0,2 * 0,35 * 6000 = 420.

Erfolgskriterium Anlagedauer

Insgesamt ist das Risiko bei einem Korb von diversifizierten Standardaktien langfristig betrachtet eher gering. Damit sich zwischenzeitliche Wertschwankungen möglichst zuverlässig ausgleichen, sollte der Anlagehorizont besser in Jahrzehnten als in Jahren bemessen sein. Gerade Aktien spielen bei einem langen Anlagehorizont ihre Überlegenheit aus! Entscheidend für den Anlageerfolg ist der Faktor Zeit, erst danach kommt der Zeitpunkt („Time" ist wichtiger als „Timing").
Wie dargestellt, sind Aktien gegenüber Anleihen bezüglich der Rendite überlegen. Sie weisen im Durchschnitt aber ein viel höheres Kursschwankungsrisiko (Volatilität) aus. Grund: Aktienkrisen gibt es alle drei bis fünf Jahre. Sie sind Teil des Systems. Dieses systemimmanente Risiko lässt sich durch Diversifikation abmildern und durch einen langfristigen Anlagehorizont entscheidend vermindern.
Erweitert ein Anleger seinen Anlagehorizont von einem auf zehn Jahre, so vermindert er sein Risiko um 80 %, erweitert er seine Anlagedauer auf 20 Jahre so vermindert sich die Schwankungsbreite um etwa 90 %.

[5] Vgl. ***Wüst/Bacher***, Saisonalitätseffekte im deutschen Aktienindex DAX, in: FINANZ BETRIEB FB 11/2008, S. 749; zum VIX-Index vgl. ***Siegel***, Langfristig Investieren, Finanzbuchverlag, München 2006, S. 307 ff.

Aktien- und Rentenrenditen nach Halteperioden (1972 bis 1997):[6]

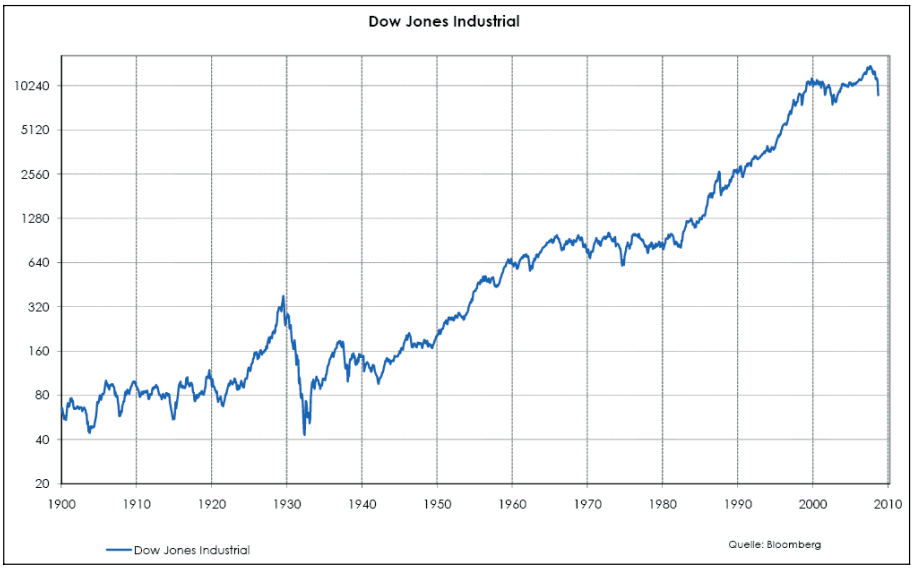
Halteperioden	DAX	Deutsche Renten
1 Jahr	Rendite 14 %, Risiko 25 %	Rendite 9 %, Risiko 7 %
10 Jahre	Rendite 11 %, Risiko 4 %	Rendite 8 %, Risiko 1 %
20 Jahre	Rendite 11 %, Risiko 1 %	Rendite 8 %, Risiko 0,5 %

Quelle: Dresdner Bank nach DAI/Kachel, 1999, S. 51

In anderen Worten: Das Risiko nimmt mit der Haltedauer stark ab. Wer den Aktienkorb über 10 Jahre lang hält, schützt nach bisheriger Erfahrung seinen Kapitalstamm vor Marktverlusten. Auf Krisenphasen der letzten Jahre angewandt bedeutet dies: Wer kurz vor dem Crash in 1987 einstieg, verlor sehr schnell ein Drittel seines Vermögens. Nach vier Jahren Durchhalten war der Verlust wieder wett gemacht.
Weiteres Beispiel: Wer den deutschen Aktienindex Dax Anfang 2000 zum damals höchsten Punkt kaufte, erreichte 7 Jahre später in 2007 - nach einer Jahrhundertbaisse - wieder seinen Einstand, verlor aber durch die Bankenkrise in 2008 wieder davon fast die Hälfte.
Viel besser sieht die Rechnung freilich aus, wenn der Einstieg in die Aktienwelt besser gelingt. Gut ist es, sich antizyklisch zu verhalten und am Ende einer Krise zu investieren. Der Dax wurde nach dem Crash Ende 1987 aufgelegt, er startete bei 1000 Punkten. Wer damals in die deutschen Blue Chips investierte, kann mitten im Börsencrash Ende 2008 bei einem DAX-Stand von 5000 – etwa 21 Jahre danach - trotz des 11. September-Shocks in 2001 und der derzeitigen Bankenkrise - eine Verfünffachung seines Vermögens verbuchen. Aus 1.000 € wurden etwa 5.000 €. Das entspricht einer Durchschnittsrendite von etwa 8 % pro Jahr. Wer in den MDAX investierte, konnte seither sein Vermögen sogar noch mehr vermehren.
Der bekannteste und älteste Aktienindex ist der Dow Jones Industrial Average.[7] Es ist preisgewichtet und repräsentiert 30 der größten US-Unternehmen. Der Dow Jones wurde 1896, also vor 112 Jahren mit 41 Indexpunkten aufgelegt. Wer damals $ 41 investierte, kann heute über etwa $ 9.000 verfügen zuzüglich pro Jahr über 2 % Ausschüttungen. Angesichts von zwei Weltkriegen, Krisen und Spannungen ein unglaublicher Erfolg! Ergo: Diversifikation in die Hauptmärkte und Geduld sind also bei erfolgreichen Aktienengagements die wichtigsten Voraussetzungen.

[6] Vgl. ***Deutsches Aktieninstitut DAI/Kachel,*** Aktie versus Rente – langfristige Renditevergleiche, Studien des DAI, Heft 6, Frankfurt 1999.
[7] Zu den einzelnen Indizes vgl. ***Klein/Grimm***, Der große Index-Guide, Finanzbuchverlag, München 2006.

Dow-Jones-Kursindex seit 1900:



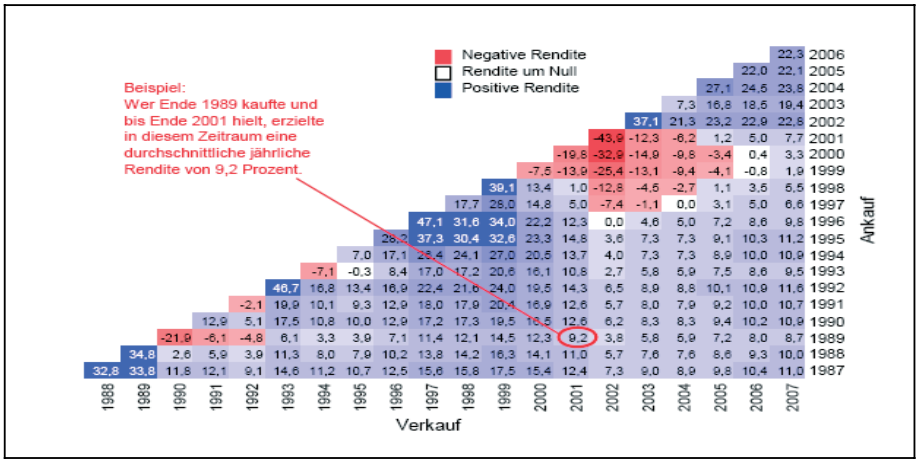
Cost-Average-Effekt

Unter Rendite-Risiko-Gesichtspunkten besonders clever ist es, regelmäßig mit Aktien zu sparen. Hierbei profitiert man vom Cost-Average-Effekt.[8] Dessen Vorteil entsteht dadurch, dass bei gleichbleibendem Anlagebetrag bei hohen Kursen weniger Anteile, bei niedrigen Kursen mehr Anteile gekauft werden.

DAI-Rendite-Dreieck

Besonders anschaulich zeigt sich das Rendite-Risiko-Verhältnis von deutschen Aktien[9] an folgender Grafik des Deutschen Aktieninstituts (DAX-Rendite-Dreieck), dargestellt hier am deutschen Aktienindex DAX seit 1988 (zum DAX ab 1948 und zum EuroStoxx seit 1986 vgl. http//:www.dai.de). Es enthält eine grafische Darstellung der jährlichen Durchschnittsrenditen in Abhängigkeit der Anlagezeiträume.

[8] Vgl. ***Bacher***, Bankmanagement kompakt, Konstanz 2007, S. 180.
[9] Zur Entwicklung und Rendite des DAX vgl. ***Deutsches Aktieninstitut DAI***, DAI-Factbook 2008 – Statistiken, Analysen und Graphiken zu Aktionären, Aktiengesellschaften und Börsen, Frankfurt 2008, 09.1 und 09.3 und ***Wüst/Bacher***, Saisonalitätseffekte im deutschen Aktienindex DAX, in: FINANZ BETRIEB FB 11/2008, S. 748 ff. Zu Renditestudien an Aktienmärkten vgl. auch ***Siegel***, Langfristig Investieren, Finanzbuchverlag, München 2006, S. 24 ff.



Quelle: Kachel/Leven, Kreditwesen 13/2008, S. 601

Positive Renditen werden im Original des DAI-Rendite-Dreiecks blau, negative Renditen rot dargestellt.

Was auffällt, ist dreierlei:[10]

1. Die positiven Renditen sind häufiger als die negativen.
2. Die Renditeergebnisse schwanken erheblich (für den DAX im Beispiel zwischen - 44 % (2002) und + 47 % (1997).
3. Je länger die Haltedauer des Aktienkorbes, desto geringer die Wahrscheinlichkeit eines Wertverlustes. Nach etwa 8 Jahren ist die Wahrscheinlichkeit einer negativen Gesamtrendite gering, nach etwa 15 Jahren Haltedauer ist je nach Einstiegszeitpunkt eine Jahresrendite von 8 bis 11 % p. a. wahrscheinlich.

Damit bilden Aktien nicht nur den besten Inflationsschutz, sondern auch den höchsten Gesamtertrag aller Anlageklassen. Freilich kann die nahe Zukunft etwas anders verlaufen als die Vergangenheit, eine Renditegarantie für die Zukunft besteht also nicht!

Vorsorge mit Aktien

Jedermann sollte also frühzeitig mit Aktien für sein Alter vorsorgen. Finanziell eine sehr gute Entscheidung treffen Eltern, wenn sie ihren Kindern zur Geburt einen globalen Aktienkorb schenken.

[10] Vgl. hierzu auch ***Wüst/Bacher***, Saisonalitätseffekte im deutschen Aktienindex DAX, in: FINANZ BETRIEB FB 11/2008, S. 751.

Beispiel: Ein schwäbischer Unternehmer setzt seit Jahrzehnten auf diese Idee und stattete jeweils kurz nach Geburt seine Nachkommen mit einem Aktienkorb aus. Sein Sohn ist heute 48, seine Enkelkinder 20 Jahre. Aus einem ursprünglichen Kapitaleinsatz von 10.000 DM haben sich beim Sohn bis heute etwa 200 T€, bei den Enkeln über 30 T€ angesammelt.
Bei einer geplanten Rendite von 8 % entsteht so bei einem Renteneintritt von 65 Jahren ein Multiplikator von 150, bei 10 % Rendite ein Multiplikator von 490 (vgl. Kapitalmultiplikatoren der Tabelle oben). Ergo: Aus 10.000 € werden damit 1,5 bzw. 4,9 Mio. €. Daraus kann man leicht eine ewige Rente konstruieren.
Rechnerisch erhält man die Jahresrente wenn man das angesammelte Kapital mit dem Rentenbarwert teilt. Beispiel: Wie gesehen werden aus 10 T€ bei 8 % Rendite in 65 Jahren 1,5 Mio. €. Davon kann man 20 Jahre lang eine Jahresrente von 150 T€ bedienen, monatlich sind das etwa 12.500 €. Eine ewige Rente würde sich jährlich auf 120 T€ oder monatlich 10.000 € errechnen.
Rentiert der Aktienkorb mit 10 %, so sieht das Beispiel noch wesentlich besser aus: Es sammeln sich in 65 Jahren 4,9 Mio. € Kapital. Bei gleicher Rendite würde sich hieraus eine ewige Rente von 490 T€ pro Jahr ableiten lassen. Eine Renditedifferenz von 2 % p. a. wirkt sich wertmäßig auf lange Sicht enorm aus und entspricht in etwa dem langfristigen Durchschnitt der Inflation in Deutschland. In anderen Wörtern: 2 % Inflation sind für ein Jahr gesehen relativ harmlos, in 65 Jahren wirken 2 % Renditenachteil wie ein dreifacher Hebel! Dieser mathematische Effekt zeigt auch, dass man nicht der Geldillusion unterliegen und langfristig den Kaufkraftverlust unterschätzen darf.
Aus Risikogesichtspunkten sollte man nach etwa 50 Jahre Laufzeit, die 100%ige-Aktienquote sukzessive vermindern, z. B. jedes Jahr um 2 bis 3 Prozentpunkte. Damit nimmt man dem Kursrisiko der Aktien noch rechtzeitig den Wind aus den Segeln, zumal bei Rentenbeginn die Auszahlung nicht auf einmal fällig wird, sondern sich gewöhnlich auf etwa zwei Jahrzehnte erstreckt.
Wer bis Ende 2008 in seinen Aktienkorb investiert, unterliegt mit den Kursgewinnen nicht der neuen Abgeltungssteuer. Seine Strategie ist damit bis auf die Dividenden fast steuerfrei. Wichtig sind zudem Kosten zu vermeiden. Voraussetzung hierfür ist in der renditestarken Anlageklasse „Aktien“ voll investiert zu bleiben.
Verfügungen sind möglichst zu unterlassen. Rechtlich empfehlen sich hierbei Rückfallklauseln an den Schenker z. B. beim Vorversterben, bei unerlaubten Verfügungen, für den Fall der Insolvenz, etc. Indirekt lässt sich damit sogar der Zugewinnausgleich aus diesem Vorsorgekapital bei einer Scheidung des Kindes umgehen (vgl. Vertragsmuster unten - Eckpfeiler einer Schenkung mit Rückfallklauseln).

Muster einer Schenkung mit Rückfallklauseln: Die Eheleute x und y Muster („Schenker“) schenken Ihrer Enkeltochter z („Beschenkte“ vertreten durch …) zum Aufbau einer privaten Altersvorsorge 5.000 €. Damit sollen alsbald … Stück Investmentanteile … gekauft und erworben werden („Anteil“).

Vorbehaltene Rechte, Gegenleistungen: Der Beschenkte ist verpflichtet, den jeweils geschenkten bzw. erworbenen Anteil auf Verlangen an den Schenker zurück zu übertragen

- bei einer Verfügung über den Anteil inklusive des Wertzuwachses ohne vorherige Zustimmung des Schenkers vor dem 60. Geburtstags des Beschenkten;
- bei Zwangsvollstreckung in den Anteil;
- falls ein Insolvenzverfahren über das Vermögen des Beschenkten eröffnet wird oder
- Mangels Masse nicht eröffnet wird; falls der Beschenkte vor dem Schenker verstirbt; falls eine Ehe des Beschenkten geschieden wird.

Das Verlangen auf Rückübertragung ist schriftlich per Einschreiben mit Rückschein an den Beschenkten zu erklären. Durch das formwirksame Stellen des Rückübertragungsverlangens ist die in dieser Urkunde Schenkung bzw. Übertragung auflösend bedingt.

Staatlicher Aktienfonds

Was für Eltern ratsam ist, kann dem Staat nicht schaden. Vorgeschlagen wird Folgendes:

1. Der Staat sollte jedem Neugeborenen ein Geburtsgeld in Höhe von 5.000 € in einen deutschen (noch besser: europäischen) Aktienkorb investieren und für 65 Jahre vor Verfügungen sichern und verwahren.
2. Um den Einstieg besser zu treffen, könnte die Einzahlung in 10 (aufgezinste) Jahresraten gestreckt werden (Cost-Average-Effekt).
3. Um dem Kaufkraftschwund entgegenzutreten, sollte das Geburtsgeld indexiert werden.
4. Nach 50 Jahren Laufzeit, sollte die Aktienquote sukzessive vermindert werden, jährlich z. B. um 3-Prozentpunkte.
5. Bei Tod - egal zu welchem Zeitpunkt - sollte das Kapital an den Staat zurückfallen.

Im Ergebnis hätte dadurch jeder Staatsbürger im Alter relativ sicher ein Millionenvermögen. Damit ließe sich relativ einfach und sicher eine monatliche Rente von über 5.000 € darstellen.

Wenn unser Staat diese Idee sofort aufgreifen würde und finanzieren könnte, würde die deutsche Aktienkultur in sehr kurzer Zeit eine internationale Spitzenposition einnehmen. Der „Deutschlandfonds“ würde leben, Risikokapital würde entstehen und die Generationen 2009+ könnten der Rentenfrage relativ gelassen entgegen sehen. Das Rentenproblem wäre langfristig gelöst!
Freilich wird es zu Gerechtigkeitsfragen kommen. Weil die Börsen starken Schwankungen unterliegen, ist es unvermeidlich, dass der Kapitalstock je nach Einstiegsphase unterschiedlich hoch ist und Verteilungsfragen auf sehr hohem Niveau zu klären wären. So kann es durchaus sein, dass ein Jahrgang einen Kapitalstock nur in Höhe von 500 T€ erzielt, ein anderer hingegen sogar mehr als 2 Mio. €. Hier könnte man ausgleichen und eine Kappungsgrenze einführen. Im Gegensatz zu den heutigen Rentenproblemen wäre das eine sehr angenehme Aufgabe.

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CHALLENGES IN INSURANCE INDUSTRY

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Abstract:

How is possible to manage many numerous risks, in order to achieve human as well as environmental wellbeing, and to form modern insurance industry? This issue is very modern and it requires rational answers. Also, this is field of scientific research. Research results are commonly used by law regulative as row model for the profession and practice. Is mentioned line we can identify challenges in insurance sector. What are the characteristics of these challenges in developed and developing countries? What is the behavior of countries that are liders and those that are not? What are financial components, and what are social and personal effects of the modern insurance industry development?

Insurance sector always has its own clear mission: to achieve as high as possible level of spiritual and material safety of the person insured. The vision should be achieving as high as possible level of spiritual and material safety of the person insured in real environment. Mission and vision of the insurance continuously transformed industry from everyday human activity to modern industry. This trend can not be stopped, because we are able to identify more and more risks every day and their identification, processing and management is more challenging. Two components are very important: financial and social.

Developed countries formed the insurance industry as powerful and respectful sector that is important part of financial market. Its users are hundreds of millions of citizens and companies. Financial effects of life insurance are much higher that those of non-life. Developing countries has no alternative than to follow, as quickly as they can, the developed countries path. That should make easier building own insurance industry. Globalization, controlled liberalization and all migration movements are additional and unavoidable factors that support insurance challenges. What is the suggestion for small, not enough developed countries as Bosnia and Herzegovina or all countries of ex-Yugoslavia?

Basic scientific truths in this field are continuous: probability theory and great numbers law, actuarial calculus based on relevant empiric research.

Insurance challenges start with actuarial calculus and data needed. That follows portfolio formulation and investment of temporarily available funds. That means participation of insurance companies at financial markets as financial intermediates. How these challenges are present and how is possible to manage them in insurance sector of developed and developing countries as Bosnia and Herzegovina?

JEL Classification: G22

Key words: insurance, risks, developed countries, developing countries

1. INTRODUCTION

The Insurance, in unlimited number of contents and shapes, is a part of every physical and legal entity and all other alive on the planet Earth. It is in human nature to seek continuously different contents and forms of risk management and that is the purpose of insurance. Therefore, men have permanent need for ordinary and professional challenge to maximize managing of the risk within and around him. Because of that, the completely new modern industry is built. That industry has a permanent growth and developing rate. The challenges are both the reasons and the consequences of series of direct and indirect facts. That is a field of scientific and research work, legal and other regulative, professional and practical achievements. Those challenges has their own common, special and unique characteristics, depending on time, geographic area, social and economic development level, entities, observations objects, goals and motives, social and economic outputs.
Modern insurance industry is a scientific product that is theoretically upgraded all the times, which offers different forms of practical usage in present and near future. Modern practice directly helps scientific research through its empiricism, problems and questions, put upon by everyday life. Based on mentioned, we have a need for a legal regulation of insurance portfolio like one of the main challenges in insurance industry. Legal regulations should be stimulating, not aggravating factor in development and growth of insurance industry. Quality level of legal regulation directly contributes to problem solving and permanent challenges in insurance industry and this so called cost-benefit analysis.

2. KEY CHALLENGES IN INSURANCE INDUSTRY – TEORETICAL AND PRACTICAL APROACH

Insurance industry has a numerous challenges. Its basic activity, mission and vision, and its business environment generate need for efficiency. Challenges create a numerous questions, which need exact answers. What are inputs and outputs in insurance industry and what are the challenges they impose?
In general, we can say, if there were no risk, there would not be an insurance or insurance industry. So, first thing to do is define a risk, then define relating characteristics and after that create an insurance product and thus fulfill multiple synergetic positive effects for both individuals and legal entities as well as for local community and state. This is a complex and responsible task, full of challenges and therefore requires maximum attention. Beside identification and risk management in a way of insurance industry, what else we can consider as key challenges in insurance industry? Answer to this question follows in text bellow.

a) Database relevance as an input in modern insurance industry

The science has found methods of forming, updating and application of relative database, needed in modern insurance industry (both life and non-life insurance), starting from appropriate a posteriori probability, statistical methods and models of database creation, to evaluation level usage. This puts many questions, the following being of special significance:

a) Representative quality of the sample applied in empirical research,
b) Way of statistical processing for applied representative sample,
c) Arranged database application

Representative quality of a sample in empirical research is a basic challenge in insurance industry. In a current trend of globalization, liberalization and migration of people as well as objects, making a representative sample for research is very complicated and responsible task. Theoretical and practical definition and sample characteristics related with a posteriori probability theory is presented in a starting model:

$$P(D) = \frac{m}{n}$$

and

$$f(D) = \frac{m}{n}$$

$$P(D) = \lim_{n \to \infty} \frac{m}{n}$$

where P(D)=0 does not necessarily mean that m=0, and also P(D)=1 does not necessarily mean that m=n. Obviously this is necessary but not enough for representative quality of a model. The way of statistical processing for applied representative sample has important elements from which final database validity depends but also for a final insurance industry outputs. In all of this, actuarial part of processing deserve attention particularly in determination of discount rate level which is a key element for starting and all other calculus analysis regarding an insurance products and with all this competitive and business success of insurance industry and full mission accomplishment in community. Actuarial processing in general and in determination of discount rate level can be considered a key clip in the chain of processing applied representative sample.

Usage of arranged databases is not only a matter of routine technique but also of continuous insight of current issues in present and future time. Dogmatic

approach to database it is not scientific approach. Therefore, it is necessary to question content and the way of usage of database.

b) Insurance portfolio structuring (undertaking and transfer of covered risks)
Stability and success of insurance industry business directly depends upon portfolio structuring when risks are assumed and are transferred further. There are scientific, legal and practical criterions of portfolio structuring and risk dispersion. All mentioned activities should be accomplished in defined filed, what is real professional challenge in insurance industry. Whole set of questions is permanently posed in accordance with defined legal and business frame of each insurer. The questions need actual responses and they are related to inputs (what needs to be insured and how, which techniques to use, is there a need for reinsurance and coinsurance) and outputs (which financial functions will be present with desired level of liquidity and profitability). Answers to these questions must not be without valid arguments, which should be based at scientific and practical permanent analysis (both ex ante and ex post). Insurance industry long life and success could not be based upon shortly short run pragmatism, upon potential short-term profitability and liquidity. Each good proficient of the modern insurance industry praxis knows its regulations and rules.
Level of country development, level of working and living standards and common habits, level of institutional and other specific individuals' and companies' motivations, directly influence extent and aspects of insurer portfolio structuring. Countries like Bosnia and Herzegovina and most of other countries (at similar stage of development) established after ex SFR Yugoslavia dissolution, have portfolio structure that is primarily based at short-term pragmatism. It means, with lower extent of insurance contracts and with second-rate portfolio structure, which is not in accordance with modern insurance industry actual situation.
Agency for insurance in Bosnia and Herzegovina official data for 2007 show that in total gross written premium, life insurance premium participates with 13,55%, and non-life insurance with 86,45%. Third part liability insurance share was 52,12%. In addition we can add that motor hull insurance participates with 11,98% and classic property insurance share is 11,27% (fire insurance, storm insurance, …). It implies that all other insurance contracts are 11,08% of total premium what is not enough for modern insurance industry existing criterions. Data presented significantly show the level of professional challenges in Bosnia and Herzegovina insurance industry. In mentioned consideration we did not analytically observed the characteristics of numerous products in mentioned insurance businesses. It is fact that number of products in classes of insurance in Bosnia and Herzegovina is small, and it underlines the assumption related to insurance industry huge needs and high challenges.

Dispersions' important categories are in classes of coinsurance and reinsurance. There are scientific and legal definitions how and to what extent to coinsure and reinsure. But, it is not the end of the whole spectrum of risks dispersion creations. It should use as well, the creation in strategic management of the insurance companies, what is challenge, not just for the relevant insurer, but for the insurance industry in a whole, as well. It is important issue whether to use coinsurance and reinsurance forms in concrete business scenarios. Without appropriate cost – benefit analysis and other relevant prerequisites for arbitrage and final decision, insurer should not make important decisions.

c) Premiums (levels and structure)

Premium is multilayer category with numerous synthesized characteristics and outputs. That is why its appropriate specification is important. Premium calculation is a challenge for insurance industry because it is main part of financial function and financial and monetary flow.

Correct calculation of net premium, loss prevention and risk premium is a challenge for each actuary. Expense loading, and gross premium level is also important not only for an actuary, but also for other personnel responsible for insurer financial function. Level of insurance products gross premium and aggregate premium is important issue not only for participants in obligation but also for other relevant subjects of state and community. The level of gross premium is not the only important issue. Its structure is important, as well. Insurer competitiveness is measured by level of gross premium and by its structure. Premium level management and management of each part of its total structure is extremely complicated professional job. This job should be based at unquestionable facts that are relevant for defined country and period.

The insurer strength lies in level of written premium. It is base without we cannot consider insurer strength.

In 2007, world gross written premium is 4.152.210.000.000 USD (or 4.152,21 billion USD). Individual countries' shares are: USA 29,64%, Western Europe 40,43%, Great Britain 12,99%, Japan 10,23%, … Bosnia and Herzegovina 0,007%. Total world gross written premium in 2007 is 7,64% of world GDP. In Bosnia and Herzegovina it is 1,85%. Average premium per capita was 621 USD, in developed countries it was 2.219 USD, in developing countries, it was 74 USD and in Bosnia and Herzegovina, it was 65 USD. Considering this, what is a goal and what is a challenge? Both goal and challenge is increasing the premium level. Increasing the premium has synergetic effects and wellbeing for all subjects relevant for insurance industry.

d) Structuring of temporarily available amounts of money investment portfolio – appropriate cost – benefit analysis

It is scientific truth that insurance companies should irrevocably invest temporarily available funds, which are collected through insurance premiums.

Those funds are invested in financial markets and goods market. This is much demanded activity with personal knowledge and law regulations limits. The basic question is how to invest funds and how to increase the level of invested funds with minimum risk and high efficiency, without endangering necessary level of liquidity and solvency. Structuring of this portfolio is one of the most sensitive financial activity. Markets dynamics and numerous other factors, which influence those investments, require expert knowledge, limited by law regulations; need to produce the fund's portfolio structure that will gratify insurers portfolio needs. Trying to avoid all inconsistencies, law regulations in all organized countries usually define the possibilities (quantitative and qualitative) of those funds investments. In Federation of Bosnia and Herzegovina (and the same situation is in other B&H entity – Republic of Srpska) Insurance Supervisory Agency of Federation of Bosnia and Herzegovina defined in 2006 the Bylaw for investments' levels and instruments. The Bylaw defined in which instrument and to what extent it is possible to invest temporarily available funds. This could be seen in further table:

Table 1. Insurance companies funds investments

Investments in:	**Type of funds (investment in %)**		
	Technical reserves	Mathematical reserves	Guarantee fund
Securities issued by B&H, entities, district Brčko, Central bank of B&H or by country that is state member of EU or their central bank	50	50	-
Bonds and other this type of securities which are traded in organized stock exchanges in B&H and EU countries	35 but up to 5% from one issuer	35 but up to 5% from one issuer	up to 5% from one issuer
Bonds and other this type of securities which are traded in organized stock exchanges in B&H and EU countries, if they are issued by legal entity based in B&H or EU country	5 but up to 1% from one issuer	-	up to 1% from one issuer
Shares which are traded in organized stock exchanges in B&H or in EU country	30 but up to 5% from one issuer	25 but up to 5% from one issuer	up to 10% from one issuer
Shares which are traded in organized stock exchanges if they are issued by legal entity based in B&H or EU country and if they are issued as securities	5 but up to 1% from one issuer	-	up to 5% from one issuer
Shares of legal entities which are based in B&H and which businesses are profitable	5 but up to 1% from one issuer	-	-
Loans secured with hypothecs, if loan is not higher that 40% of the immovable estate valued by authorized estimator	10 but up to 2% from one owner	-	-

Loans secured by securities (which are issued by B&H, bonds and shares which are traded in organized stocks)	20	-	-
Loans secured by banks guarantees (banks based in B&H or in EU country)	20	20	-
Loans not higher that surrender value of insurance based on life insurance (from mathematical reserves)	20	30	-
Immovable estates and other immovable estates' rights	20	30 but up to 10% in one estate	20
Deposits and loans for banks in B&H or EU country	30 but up to 10% in one bank	30 but up to 10% in one bank	up to 20% in one bank
Funds at company accounts	no limits	no limits	no limits

Source: authors made the table from the Bylaw Insurance Supervisory Agency of Federation of Bosnia and Herzegovina defined in 2006 the Bylaw for investments' levels and instruments (Službene novine Federacije BiH - Federation of BiH Official Gazette Number 80/06)

Based on the review, it is obvious what are the challenges for the insurance industry in Bosnia and Herzegovina. This approbates all lately mentioned facts regarding the sophistication and expert treatment of these insurers' business operations.

e) Financial function sui generis and integral insurer financial management
Insurance companies' financial function has its own characteristics particularly regarding the insurance industry distinctions. That is why we can consider it as: financial function sui generis. Integral financial management implies management with all parts and with commonality of the funds flow of the insurer. What is the content, and what could be the content of the insurers' funds incomes and outcomes? What are the revenues and what are the expenditures; which are the factors relevant for flows that are financial function. What are the sources of financing basic and additional businesses of the insurers? How financial funds are used in insurance companies; how are they increasing, distributing and finalizing the obligations between persons insured and insurers? How these processes are realized in one insurance company? How are they realized in-group of the companies? How are they realized in insurance industry as a whole? Those are tremendous challenges, interdisciplinary ones.

One thing is important: not to jeopardize necessary level of liquidity and to realize maximum of profitability in defined obligations periods.

3. INSTEAD OF CONCLUSION: insurance industry institutions

When you try to define what is an insurance industry and what challenges are related with we come to necessity conclusions: main institution in insurance industry is company for insurance (preliminary: insurance company) likewise "insurance factory". What kinds of challenges are related with it, is explained in this paper. The fact is that insurance company has its own products that they offer and sell on the market. That is how they fulfill their basic mission. However, beside the insurance company, other institutions are part of insurance industry that also have "their challenges" and they are complement with insurance companies. These institutions help to create "safety production" as better as possible. These are state institutions based on laws, professional institutions that are established by insurance companies and chambers of commerce. In this perspective of Bosnia and Herzegovina is very interesting. Regarding the complex state structure, which is also implicated on economic sector, insurance industry in Bosnia and Herzegovina is consisted of 26 insurance companies, 1 reinsurance company, 10 different institutions in this industry (1 State level agency, 2 agencies and 2 protection funds at entity level (Federation of B&H and Republic of Srpska), Green card bureau, Actuarial association, Insurers association at Foreign trade Chamber of Bosnia and Herzegovina and entity insurers associations). All these institutions "have their own challenges". Definitely, it is a big challenge how to downsize this number of institutions and how to rationalize and adapt to modern trends of European and World insurance industry, as well?

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THE EMPIRICAL STUDY OF EQUITY LONG ONLY HEDGE FUNDS PERFORMANCE IN 2007 - 2008

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Abstract

The purpose of the research is to measure the investment results of hedge funds in 2007 and 2008 that is during the bull and the bear market. The S&P500 index was used as a benchmark. It was shown that the majority of institutions whose aim is to generate absolute rates of return, and what refers to it, to generate better rates of return than traditional investments irrespective of the market situation, broke this rule. Such measures were taken into consideration as: rates of return, risk measured by standard deviation, risk measured by beta, the level of alpha, the correlation of the examined funds with traditional assets and the Sharpe ratio.
The research presented in the paper is a part of the wider research conducted by the author for over 200 hedge funds divided into different investment strategies. The paper deals with 20 hedge funds chosen at random from those which applied the equity long only strategy in the examined period.

JEL classification: G11, G15, G32

Keywords: hedge funds, investments

Introduction

Traditional investments (like stocks or bonds) results are compared to certain benchmarks that are usually stock or bond indexes. This kind of approach is not used by hedge funds managers. In this case, the aim of an investment is not to achieve the rate of income better than the market but an absolute and attractive rate of income no matter what the situation on the global financial market is. These institutions should be characterized by the risk directly deriving from the strategy used by them, not from the market situation. The factor that differentiates a hedge fund from other hedge funds is the level of alpha coefficient.
S.J. Brown, W.N. Goetzmann and R.G. Ibbotson examined the off-shore hedge fund industry over the period 1989 through 1995 using a database that includes both defunct and currently operating funds. They come to the conclusion that the industry is characterized by high attrition rates and low covariance with the U.S. stock market. Besides, offshore funds as a group have positive risk-adjusted performance when measured by Sharpe ratios and by Jensen's alpha.

They also point that little public information is available about the investment strategies and specialization of these mangers.[1] As it is shown beneath, the author's conclusions about hedge funds performance differ from this research. They let assume that hedge funds are no longer as good tools for making money as they used to be a few years ago.

1. The aim and the scope of the research

The research presented in the paper was done on the basis of 20 hedge funds that use equity long only strategies. They were chosen at random from the data base prepared by BarclayHedge and Global Fund Technologies which comprises about 2000 hedge funds applying different investment strategies. The aim of the research is to measure the investments results of hedge funds in 2007 and 2008 that is during the bull and the bear market. The S&P500 index was used as a benchmark. It was shown that the majority of institutions whose aim is to generate absolute rates of return, and what refers to it, generating better rates of return than traditional investments irrespective of the market situation, thus also during the bear market, broke this rule. Such measures were taken into consideration as: rates of return, risk measured by standard deviation, risk measured by beta, the level of alpha, the correlation of the examined funds with traditional assets and the Sharpe ratio.
Given the fact that the paper was prepared at the end of 2008, data from January 2007 until November 2008 were taken into consideration. It let examine the results of hedge funds both during favorable market conditions and during the bear market on global financial markets. In the first part of the paper the author gives the detailed characteristics of investment strategies used by the examined hedge funds.

2. Hedge funds investment results measurement – focus on theory

All hedge funds claim to do something highly exclusive and proprietary and anxiously guard their trading secrets. Although transparency has improved with the arrival of institutional investors, hedge fund investors are seldom told what exactly goes on inside the black box. As a result, it can sometimes be very hard to properly assess the risk-return characteristics of a fund.[2] Apart from standard characteristics like rates of return, standard deviation, correlation, hedge funds' performance is usually measured by beta and alpha. The overall measure used in this industry is the Sharpe ratio which covers both risk and rates of return. The paper does not concentrate on the idea of these measures, however the

[1] For details see: S.J. Brown, W.N. Goetzmann, R.G. Ibbotson, Offshore Hedge Funds: Survival & Performance 1989 – 1995, p. 1 – 20.
[2] H.M. Kat, H.P. Palaro, Who needs hedge funds? A Copula-Based Approach to Hedge Fund Return Replication, Cass Business School, City of London, November 23, 2005, p. 7.

author will give a brief point on the most important things concerning beta and alpha, so as to make the empirical results more understandable.
In a nutshell, beta is a measure of a fund's amount of dependence on the return of the market. The concept is rooted in portfolio theory pioneered by Harry Markowitz in the 1950s, which has evolved to express the relationship between risky assets, such as stocks, and the market (Tran; 2006, 51). Hedge funds offer three types of beta benefits: (Gregoriou et al.; 2005, 33)

- Traditional beta benefits emanating from exposure to stock and bond returns
- Beta benefits emanating from exposure to other risk factors in equity markets, such as small-cap versus large-cap spread, value versus growth spread, or implied volatility, and in bond markets, such as term spread, credit spread, or bond returns volatility
- Other alternate beta benefits, such as commodity price levels or currency rates.

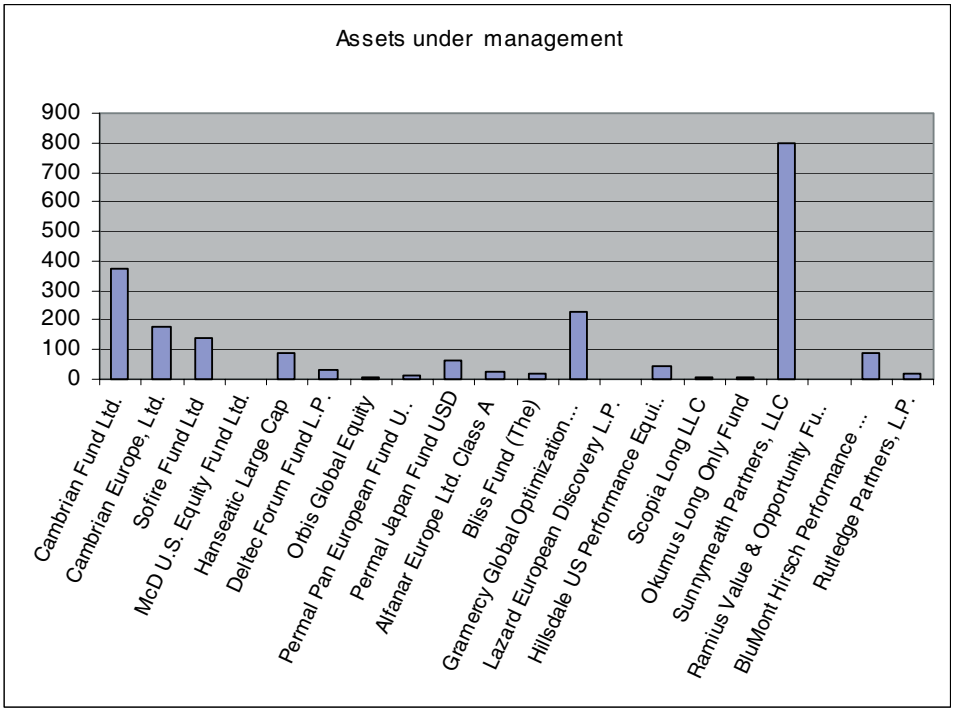
The beta measure is connected with a risk premium that is a part of the CAPM.[3] Hedge funds are supposed to be free from the market, free from its vagaries and fluctuations and risks. The values of their beta are supposed to be very low or near zero. For a fund manager to achieve such a feat, he or she must have exceptional skills or talent. That is why alpha is often claimed to be synonymous with a portfolio manager's talent or skills.[4]

3. Hedge funds assets and investment strategies

The examined hedge funds have various amount of assets under management (see chart 1). It is worth emphasizing at the beginning that one of the funds, i.e. Ramius Value & Opportunity Fund Ltd., does not reveal the amount of assets under its management, so it can not be taken into consideration in this analysis. The biggest assets out of the 19 hedge funds left have: Sunnymeath Partners, LLC (800 thousand dollars), Cambrian Fund Ltd.(377 thousand dollars) and Gramercy Global Optimization Fund Ltd.(231 thousand dollars). The three funds with the smallest assets are: Lazard European Discovery L.P.(with its assets of 2,49 thousand dollars), McD U.S. Equity Fund Ltd.(having assets equal to 3 thousand dollars), Okumus Long Only Fund (managing assets of 4,5 thousand dollars). Such diversified amount of assets proves additionally that funds were chosen at random.

Chart 1. Assets under management of the examined funds [thousands of dollars]

[3] See further: W.F. Sharpe, Capital Asset Prices: A Theory of Basset Equilibrium under Conditions of Risk, Journal of Finance, 1964, Vol. 19, No. 3, p. 425 – 442.
[4] V.Q. Tran, Evaluating Hedge Fund Performance, John Wiley & Sons, Inc., Hoboken 2006, p. 52.



Source: prepared by the author on the basis of data provided by BarclayHedge and Global Fund Technologies.

The investment strategies applied by the examined hedge funds are varied. Although every fund has its own investment policy, they have something in common. These are investments in equity with long positions only. This is why they were classified as equity long only funds by data providers. Details concerning investment rules of each of the examined funds are gathered in table 1.

Table 1. The spectrum of investments of the examined hedge funds.

The name of the fund	**The spectrum of investments**
Cambrian Fund Ltd.	Invests only in U.S. publicly-traded equity securities, concentrating capital and research on five to six investments at any given time, with a twelve to twenty-four month holding period. Focus on quality, mid-cap, medium-to-low tech industrial products and services companies which are temporarily out-of-favor and candidates for earnings turnaround, restructuring and/or takeover. Research approach: bottom-up, value, fundamental and hands-on. Uses constructive shareholder activism, where appropriate. Due to high degree of concentration, correlation with the U.S. equity market is relatively low. Monthly volatility may be above equity market volatility. Selective use of leverage. No use of

	futures, options or short sales. Typical equity market exposure range of 60%-140% of net assets. AUM (assets under management) reflects total assets of the strategy.
Cambrian Europe, Ltd.	The Fund invests only in European publicly-traded equity securities, concentrating capital and research on five to six investments at any given time, with a twelve to twenty-four month holding period. The focus is on quality, mid-cap, medium-to-low tech industrial products and services companies which are temporarily out-of-favor and candidates for earnings turnaround, restructuring and/or takeover. Research approach: bottom-up, value, fundamental and hands-on. The Fund uses constructive shareholder activism, where appropriate. Due to a high degree of concentration, correlation with the non-U.S. equity market is relatively low. Monthly volatility may be above equity market volatility. Selective use of leverage. No use of futures, options or short sales. Typical equity market exposure range of 60%-140% of net assets. AUM (assets under management) reflects total assets of the strategy.
Sofire Fund Ltd	By extensive fundamental bottom-up research, we identify companies with quality businesses selling at a significant discount to their intrinsic value. These securities often are identified in the following categories: 1) Small market capitalization, 2) Hidden earnings, 3) Hidden assets, 4) Long busines cycles, 5) Complicated capital structure, and 6) Special situations. The Fund invests globally. Security selection is value-driven. The Fund, which has the ability to short, is typically a long-only fund.
McD U.S. Equity Fund Ltd.	The Fund's investment objective is to achieve long-term capital growth by investing in equity securities of companies which the Investment Advisor believes are sound but undervalued. Securities of a company may be undervalued for a variety of reasons including: over-reaction by investors to unfavourable news about a company, industry, or the stock market in general, or as a result of a market decline, poor economic conditions, tax-loss selling, or actual or anticipated unfavourable developments affecting the company. The Fund will invest primarily in common stock of larger, listed companies with a record of earnings and dividends, low price-earnings ratios, reasonable returns on equity, and sound finances which, in the opinion of the Investment Advisor, have intrinsic value. It is anticipated that most stocks purchased will be listed on the New York Stock Exchange, but the Fund may also purchase securities listed on other securities exchanges and in the over-the-counter market. The Fund may also buy and sell securities index futures and options thereon.
Hanseatic Large Cap	Hanseatic's investment process is the combination of proprietary buy/sell disciplines, bottom-up portfolio construction and risk management methodology. The objective of the investment process is to create positive risk-adjusted alpha in a consistent way. The buy disciplines entail a proprietary trend measurement which takes into account three operative time dimensions - monthly, weekly and daily. The purpose of the buy disciplines is to identify stock price trends which in aggregate have the potential to persist into our target holding period (6-36 months). Our research has shown that there are time boundaries in the relevant time dimensions which also play an important role. It is the intersection of multi-time dimensional trend

	measurement and time boundaries that is the foundation of our buy disciplines. The sell disciplines are designed to identify points in time when the risk-reward relationship over an intermediate time frame becomes unfavorable. Changes in the risk-reward relationship may follow a period of objectively-measured underperformance relative to the benchmark or coincide with various gauges of excess volatility. The purpose of the sell disciplines is to control individual security risk in a consistent manner while allowing individual stocks with positive intermediate-term alpha to remain in the portfolio. Each stock is subject to defined, albeit dynamic, risk management. Portfolio construction is a bottom-up process which manages overall portfolio risk by way of position-sizing and diversification. The buy disciplines over and underweight market sectors and industries by adapting to relative market leadership in a dynamic way. However the weightings have guidelines defined for sectors and industries, +/- 10% and +/- 5% respectively. Initial position sizing ranges from 0.5-1% of the portfolio. Intelligent diversification is a cornerstone of our investment process. The cumulative investment process enables portfolios that are adaptive to changing market environments and achieve positive alpha in a consistent manner. Through ongoing research the company endeavors to improve its alpha-generation capabilities and its ability to manage the portfolio risk-reward relationship. The company has evolved with the experience and development of its investment professionals. This will remain a key goal. Mgmt. Fee: 0-10MM - 80bps; 11-25MM - 60bps; 26+MM - 40bps.
Deltec Forum Fund L.P.	The investment objective of the Partnership is to seek long-term capital appreciation through investment primarily in the equity securities of undervalued domestic and foreign companies and domestic and foreign corporate and governmental high yield debt instruments which the Investment Manager (as defined below) believes have a significant potential for price appreciation. Current income is a secondary objective. In particular, the Partnership's investment focus is on common stocks and high yield, lower-rated bonds with various maturities. There can be no assurance that the Partnership will achieve its investment objective.
Orbis Global Equity	The Fund invests in equities globally on a long-only basis using a value-oriented approach.
Permal Pan European Fund USD Class A	Invests primarily in equity securities of large and small companies domiciled or with primary operations in Europe. Stock selection reflects a value and growth style. The Fund seeks to capitalize on mispriced companies due to investor emotions or neglected opportunities. The Fund seeks to take advantage of opportunities arising from privatization, the reduction of trade barriers and progress towards economic and monetary union in Europe. Focus will primarily be on Western European countries but may invest up to 15% in Eastern Europe. Active hedging of current risk employed for US$ and EUR class shares. Management fee may be up to 5.5%. AUM reflects both currency classes. The Investment Advisor to the Fund is State Street Global Advisors United Kingdom Limited. AUM combines all currency and share classes.
Permal Japan Fund USD	Invests primarily in equity securities and ADRs of large and small companies domiciled or with primary operations in Japan.

	Diversification of assets across a wide range of industries and companies with a good level of liquidity and strong fundamentals (cash flows, management, market position) in the opinion of the advisor (State Street Global Advisors United Kingdom Limited). Advisor employs both top-down and bottom-up research and evaluation. Management fee can be up to 5.5%. AUM reflects both currency classes.
Alfanar Europe Ltd. Class A	The objective of the Fund is to invest in the equities of publicly traded European stocks that comply with Islamic investment criteria. The Investment Manager, TT International Investment Management, pursues an investment strategy which combines detailed stock selection with an awareness of geopolitical conditions. To implement its strategy, the Investment Manager uses a three part stock selection process to: 1) Identify companies that display value in the form of assets or earnings. 2) Verify valuations through the use of various models and information obtained from academic or industrial experts. 3) Look for a catalyst to unlock the value that it has identified.
Bliss Fund (The)	Bliss Fund employs a proprietary quantitative trading system that seeks to identify and exploit trends in the price movements of securities. The system attempts to obtain extraordinary returns by switching between securities and cash (or cash equivalents) on the basis of the buy or sell signals generated.
Gramercy Global Optimization Fund Ltd.	The Fund is a long-only equity fund that invests in underlying closed-end equity funds. It can use leverage (but hasn't), and does not go short. It has a management fee and a performance fee charged on excess performance above a global equity index. The Fund uses a mean-variance optimization process to select a global portfolio of closed-end funds and exchange traded funds (ETFs).
Lazard European Discovery L.P.	The investment strategy of Lazard European Discovery is to seek to achieve long-term capital appreciation by investing in up to 40 equity securities focusing primarily on companies located in Europe that have a market capitalization of approximately EUR 1 billion or less. The Fund utilizes an active bottom-up approach to stock selection and seeks to invest in under-valued companies with improving or sustainable financial productivity and superior business attributes such as high barriers to entry, superior products or services, and/or excellent management. Companies are evaluated according to the appropriate measures for financial productivity and valuation for their respective industries. The Portfolio Management Team focuses on metrics that have successfully predicted performance in the past. The Team believes that understanding a company's operating model and the sustainability of its franchise is key to understanding the valuation drivers. Country or regional allocations are an outcome of the stock selection process. The investment universe consists of approximately 1,400 European companies with a market capitalization between EUR 150 million and 1 billion. The European small cap market can be relatively inefficient and offers attractive investment opportunities. Through detailed analysis, the Team identifies catalysts and opportunities to generate attractive returns. The asset class advantages are: 1) Compelling opportunities - Numerous companies with attractive risk/reward tradeoffs remain under-invested as a result of low liquidity. 2) Limited coverage - Limited sell-side coverage provides the opportunity to

	invest in undiscovered companies. 3) Attractive ownership structure - Many family-owned/limited free-float companies are increasingly willing to access the capital markets. 4) Growth potential - Significant upside and potential for valuation re-rating.
Hillsdale US Performance Equity A	The investment objective of the strategy is to provide a three year rate of return on capital in excess of the Russell 2000 Index with volatility equal to or less than the Index. The Fund invests a minimum of 75% of its assets in a diversified selection of small to medium capitalization United States corporations trading on major US stock exchanges. No equity holding of a single corporation, either through direct holdings or indirectly though an investment in another investment fund, will exceed 5% of the Fund's assets.
Scopia Long LLC	The Fund's investment objective is to achieve attractive rates of return primarily by investing in the publicly traded equities of companies. The investment strategy utilized by the investment member is a long only value-oriented approach which seeks to identify and purchase stocks that will appreciate over a several year period, although returns will be affected by the performance of the overall market. Redemptions - Quarterly - 60 days' prior written notice / Monthly - 125 days' prior written notice
Okumus Long Only Fund	The Fund, which has a domestic and offshore version, aims to give professional investors a total return vehicle comprising of long equities. Okumus Long Only Fund will invest in securities of companies by employing a deep value-oriented investment process and selecting securities based on bottom-up analysis that focuses on the specific fundamentals of individual companies. The Fund's portfolio will comprise mainly of US equities with to mid to large market capitalization across various industries bought at prices that are tremendously discounted to the companies' intrinsic value. The Fund will not place bets on the market direction. The Fund will not deploy any leverage and will not use any derivatives.
Sunnymeath Partners, LLC	The principal objective of the Fund is to realize consistently superior long-term growth of capital while mitigating risk. Utilization of bottom-up fundamental analysis with an emphasis on cash flow guides investment discipline. The Fund de-emphasizes technology and financial service sectors and over-emphasizes materials, industrials, consumer discretionary and health care sectors relative to benchmark. The General Partner believes that significant alpha can be achieved by capitalizing on market opportunities in companies large and small, which it believes are significantly undervalued relative to their growth potential. By concentrating on a relatively small number of companies at any one time, the General Partner believes he can trade opportunistically around these value-oriented investments with thorough and reliable information about each company through intensive research, contacts with company management and industry seminars. The General Partner has over 25 years experience analyzing and managing assets and has been following a core group of 200 companies as possible purchase or short candidates for over 20 years.
Ramius Value & Opportunity Fund Ltd	Ramius Value & Opportunity Fund Ltd invests primarily in the securities of U.S. public companies that the Fund believes are deeply undervalued by the marketplace. Typically, these companies trade at a discount to their intrinsic value due to management or capital structure-

	related issues, and have been identified through traditional, fundamental value analysis as well as through industry knowledge and corporate relationships. Realization of value may occur through a change in ownership, corporate direction or management, or from operational improvements. The Fund may make investments alone or together with one or more other investors or investment managers, acting as a group in order to maximize resources and influence the desired outcome. The Fund (either alone or together with other members of the group) may take significant minority stakes or acquire a "control" position in the portfolio companies' securities. The Fund will target net annualized returns over a complete market cycle of approximately 20%.
BluMont Hirsch Performance Fund	The BluMont Hirsch Performance Fund's objective is to achieve above average long-term capital growth by investing primarily in Canadian corporations with superior fundamentals and growth profiles, encompassing companies with a range of capitalizations.
Rutledge Partners, L.P.	Rutledge Partners is a long-biased U.S. equities program. Our trading discipline is basic and straight forward. We look for the best execution on our holdings. Initial positions are small, as fundamental and technical aspects of the stock improve, we will buy up. We look for continuous validation that the company is on target fundamentally. We do not have a hedging strategy other than increasing or decreasing our cash position. Our approach is to own a collection of businesses that are best in class or are on the cutting edge of their respective product life. Each company must have exceptional growth potential. Please note that returns are provided net of management fees only.

Source: prepared by the author on the basis of data provided by BarclayHedge and Global Fund Technologies.

4. Rates of return and risk generated by hedge funds in the examined period

In 2007 three funds only generated minus rates of return. It was Permal Japan Fund USD with its rate of return equal to -29,71%, Okumus Long Only Fund with the rate of return – 14,68% and Lazard European Discovery L.P. having the rate of return – 4,86% (see table 2). The rest of funds had positive interest rates. The best result was achieved by Bliss Fund (28,10%), the second best by Alfanar Europe Ltd. Class A (25,37%), whereas the third best by Cambrian Fund Ltd. (25,36%). In 2008 the situation was dramatically worse. All examined hedge funds generated minus rates of return. The worst was Permal Japan Fund USD (-64,72%), the second one was Cambrian Fund Ltd. (-56,91%) and the third one was Gramercy Global Optimization Fund Ltd. (-51,48%). Thus the results for 2008 show that hedge funds were not able to generate positive rates of return during the bear market, as it is usually assumed theoretically.

As far as alpha coefficients are concerned, in 2007, 6 funds had the alpha coefficient below zero. The rest of them achieved positive alphas among which

the highest one was generated by Bliss Fund (1,82), the second best by Alfanar Europe Ltd. Class A (1,53) and the third best by Cambrian Fund Ltd. (1,50). In 2008 more than a half (exactly 11) of the examined funds achieved alphas below zero, which was a worse result than the previous year. The best result had Okumus Long Only Fund (1,89), the second best was Sunnymeath Partners, LLC (1,87) and the third best was Scopia Long LLC (1,11). It is worth emphasizing however that the average alpha of the three best funds in 2007 and 2008 is the same and equal to about 1,62. However if one takes into consideration all examined hedge funds, the average alpha generated in 2008 is much lower than the one generated in 2007, which is a result of the fact that the majority of hedge funds did not manage to beat up the market.
The analysis of risk measured by beta shows that 14 funds increased their betas. Only 6 hedge funds managed to decrease them. If one takes into consideration poor rates of income, it is another proof that hedge funds did not perform well.

Table 2. Rates of return as well as alpha and beta coefficients for the examined hedge funds.

		Rate of return		**Alpha**		**Beta**	
		2007	**2008**	**2007**	**2008**	**2007**	**2008**
1	**Cambrian Fund Ltd.**	25,36	-56,91	1,50	0,57	1,00	1,81
2	**Cambrian Europe, Ltd.**	0,83	-50,69	-0,22	0,95	0,72	1,63
3	**Sofire Fund Ltd**	6,07	-24,96	0,28	0,25	0,45	0,68
4	**McD U.S. Equity Fund Ltd.**	5,98	-30,69	0,02	-0,30	0,56	0,81
5	**Hanseatic Large Cap**	23,00	-41,54	1,23	-0,09	1,18	1,09
6	**Deltec Forum Fund L.P.**	7,57	-53,50	0,10	0,57	1,23	1,67
7	**Orbis Global Equity**	12,62	-40,45	0,71	-1,01	0,64	0,85
8	**Permal Pan European Fund USD Class A**	12,98	-39,64	0,60	-1,72	0,96	0,63
9	**Permal Japan Fund USD**	-29,71	-64,72	-2,84	-5,41	0,49	0,82
10	**Alfanar Europe Ltd. Class A**	25,37	-42,87	1,53	0,75	0,90	1,30
11	**Bliss Fund (The)**	28,10	-13,22	1,82	0,42	0,66	0,40
12	**Gramercy Global Optimization Fund Ltd.**	10,11	-51,48	0,40	-1,15	0,93	1,21
13	**Lazard European Discovery L.P.**	-4,86	-45,66	-0,72	-0,58	0,81	1,11
14	**Hillsdale US Performance Equity A**	12,70	-42,52	0,55	-0,18	1,06	1,11
15	**Scopia Long LLC**	2,01	-32,51	-0,34	1,11	1,23	1,08
16	**Okumus Long Only Fund**	-14,68	-13,91	-1,59	1,89	0,66	0,86
17	**Sunnymeath Partners, LLC**	3,27	-26,99	-0,03	1,87	0,67	1,10
18	**Ramius Value & Opportunity Fund Ltd**	6,33	-17,22	0,23	-0,08	0,68	0,45
19	**BluMont Hirsch Performance Fund**	12,92	-33,69	0,82	-1,30	0,49	0,54
20	**Rutledge Partners, L.P.**	18,17	-28,63	1,40	-0,93	1,26	0,42

Source: prepared by the author on the basis of data provided by BarclayHedge and Global Fund Technologies.

Risk measured with standard deviation of monthly rates of return, generated by the examined hedge funds increased dramatically in 2008 in comparison to 2007 (see table 3). There was just one fund that decreased its risk (-22,95%) in the mentioned period. It was Rutledge Partners, L.P. Other 19 hedge funds raised their risk by 31,23% (in the case of Bliss Fund) to 221,48% (in the case of Sofire Fund Ltd.). The highest rises were generated by the earlier mentioned Sofire Fund Ltd. (221,48%), McD U.S. Equity Fund Ltd. (209,55%) and Sunnymeath Partners, LLC (208,44%).

Table 3. Standard deviations of the examined hedge funds and their changes (data in %).

	Fund's name	**Standard deviation of monthly rates of return**		**Standard deviation change**
		2007	**2008**	
1	**Cambrian Fund Ltd.**	4,05	11,00	171,60
2	**Cambrian Europe, Ltd.**	3,39	10,40	206,78
3	**Sofire Fund Ltd.**	1,35	4,34	221,48
4	**McD U.S. Equity Fund Ltd.**	1,57	4,86	209,55
5	**Hanseatic Large Cap**	3,51	7,21	105,41
6	**Deltec Forum Fund L.P.**	4,09	10,27	151,10
7	**Orbis Global Equity**	2,44	5,62	130,33
8	**Permal Pan European Fund USD Class A**	2,98	6,31	111,74
9	**Permal Japan Fund USD**	4,17	7,74	85,61
10	**Alfanar Europe Ltd. Class A**	3,66	9,62	162,84
11	**Bliss Fund (The)**	3,17	4,16	31,23
12	**Gramercy Global Optimization Fund Ltd.**	2,91	7,90	171,48
13	**Lazard European Discovery L.P.**	4,13	8,07	95,40
14	**Hillsdale US Performance Equity A**	3,54	6,84	93,22
15	**Scopia Long LLC**	4,18	7,09	69,62
16	**Okumus Long Only Fund**	2,97	6,00	102,02
17	**Sunnymeath Partners, LLC**	2,25	6,94	208,44
18	**Ramius Value & Opportunity Fund Ltd**	2,93	4,72	61,09
19	**BluMont Hirsch Performance Fund**	2,91	5,81	99,66
20	**Rutledge Partners, L.P.**	11,37	8,76	-22,95

Source: prepared by the author on the basis of own calculations and data provided by BarclayHedge and Global Fund Technologies.

In 2007 six funds' Sharpe ratios were negative, whereas in 2008 all hedge funds had negative Sharpe ratios (see table 4). If one looks at Sharpe ratios from the 2008 perspective in comparison to 2007, 19 funds have lower Sharpe ratios in 2008 than the previous year. It was just Okumus Long Only

Fund whose Sharpe ratio increased, however it was below zero both in 2007 and in 2008.

As for the correlation ratio, it increased for the majority of funds (exactly for 16) in 2008 compared with 2007. Four funds only diminished their correlation ratios value. These were Hanseatic Large Cap (from0,90 to 0,89), Permal Pan European Fund USD Class A (from 0,86 to 0,59), Ramius Value & Opportunity Fund Ltd (from 0,62 to 0,58) and Rutledge Partners, L.P (from 0,30 to 0,28). It is also worth emphasizing that correlation ratios for the vast majority of the examined funds are high or moderate. Only two funds in 2007 have week correlation ratio (Permal Japan Fund USD and Rutledge Partners, L.P.) and just one hedge fund has a weak correlation with the S&P500 index in 2008 (Rutledge Partners, L.P.).

Table 4. Sharpe and correlation ratios for the examined hedge funds.

	Fund's name	**Sharpe ratio**		**Correlation ratio**	
		2007	**2008**	**2007**	**2008**
1	**Cambrian Fund Ltd.**	1,49	-1,61	0,66	0,97
2	**Cambrian Europe, Ltd.**	-0,31	-1,53	0,57	0,92
3	**Sofire Fund Ltd**	0,34	-1,88	0,90	0,92
4	**McD U.S. Equity Fund Ltd.**	0,27	-2,04	0,95	0,98
5	**Hanseatic Large Cap**	1,52	-1,83	0,90	0,89
6	**Deltec Forum Fund L.P.**	0,22	-1,63	0,80	0,96
7	**Orbis Global Equity**	0,96	-2,29	0,70	0,89
8	**Permal Pan European Fund USD Class A**	0,82	-2,00	0,86	0,59
9	**Permal Japan Fund USD**	-2,24	-2,58	0,31	0,62
10	**Alfanar Europe Ltd. Class A**	1,65	-1,41	0,66	0,80
11	**Bliss Fund (The)**	2,15	-1,09	0,55	0,57
12	**Gramercy Global Optimization Fund Ltd.**	0,56	-2,04	0,85	0,90
13	**Lazard European Discovery L.P.**	-0,65	-1,79	0,53	0,81
14	**Hillsdale US Performance Equity A**	0,67	-1,97	0,80	0,96
15	**Scopia Long LLC**	-0,17	-1,48	0,79	0,90
16	**Okumus Long Only Fund**	-1,86	-0,86	0,59	0,87
17	**Sunnymeath Partners, LLC**	-0,16	-1,27	0,80	0,93
18	**Ramius Value & Opportunity Fund Ltd**	0,18	-1,33	0,62	0,58
19	**BluMont Hirsch Performance Fund**	0,84	-1,86	0,45	0,55
20	**Rutledge Partners, L.P.**	0,35	-1,06	0,30	0,28

Source: prepared by the author on the basis of data provided by BarclayHedge and Global Fund Technologies.

Final findings

As it was shown in the paper equity long only hedge funds did not perform well during the bear market. It means that theoretical assumptions on the activity of hedge funds were not fulfilled in the examined period. The similar results were achieved for emerging markets funds, as well as for equity long bias funds so far. The rest of the strategies will be examined in the nearest future by the author, which will let draw conclusions on the industry as a whole.
In December 2006, the ECB voiced „unease" at the distribution of credit risk to „opaque" players such as hedge funds in its twice-yearly Financial Stability Forum. The UK's Financial Services Authority has also raised concerns about over-reliance on historical data, call in for a reassessment of some players' pricing assumptions for risk and greater stress testing. (Gore; 2007, 13.)
Thus, if one additionally takes into consideration recent discussions on the influence of hedge funds on the global financial stability[5], it raises the question what hedge funds really are.

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Public Economics

PUBLIC INVESTMENTS AND BORROWING: NEW CHALLENGES FOR THE LOCAL GOVERNMETNS IN EASTERN CROATIA

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Abstract

In Croatia there is recognized growing interest and effort gain by authorities to give all areas equal opportunities to gain economic and social resources above all needed for EU accession. Allocation of budget which can ensure expected quick economic growth of eastern parts of Croatia justifies budget deficit. The paper shows necessity to accept a challenge of change the mainstream of financing capital investments because conventional patterns slow down and make difficult to run development projects. There is a great extend of opportunities of financial sources but not used in enough scale. The goal is to answer on questions: what kind of sources of financing are suitable to use in public sector, and is their current way of borrowing fit efficiently enough to be adequate for quick economic development?
This paper contributes in attempt to present some solutions to problem of areas legged behind in Eastern Croatia which plead for strengthening development and economic prosperity because nominated projects for public goods exceed their budgets possibilities. Many factors depend about financial productivity of local units. For that purpose the current mainstream of public debts will be considered. The potential of different pattern of public debt will be foreseen and at the same time identify the possibilities which could bring new patters of financing public investments like involvement of private sector in projects of public interest like public-private partnership.

JEL classification: E61, E62, H10

Keywords: public investment, debt, means of finance, local development.

1. Introduction

The structure of public sector financing is usually the most important and the greatest challenge for government officials on all levels of management. The way it is managed has great effect on financial stability and independence, and they, in turn, affect the possibility of economic disturbances in the country. Problems of excessive indebtedness of the state or its inability to pay debts are often emphasized, and the need for refinancing emerges. The sense of

instability that can sometimes be noticed in the public sector has a direct influence on the state of private sector, the growth of interest rates, the stagnation in investments etc. On the other hand, if the government uses efficient models of capital investments financing, under sensible ratio of risk and refund, different results are to be expected.

This paper will be examining the current state of public borrowing and capital investments in some of the counties and cities in Eastern Croatia. Its goal is to suggest some measures that could bring faster and more efficient development of the region to the local public sector. The purpose is to introduce modern models of public services provision for a better satisfaction of the needs of citizens, with contractual relation between public and private partners. New challenges lie in changes on the local level that should be suggested to the government officials, in order to make public sector more supportive to the development of the private sector. This includes developed infrastructure, better health care, greater and more diverse possibilities for education etc. The partnership between the public and the private sector, in regard to the development projects execution and the use of the final product is considered an important factor in the advancement of the local development.

Due to the extremely difficult circumstances that occurred as a result of the war, this region's economic development, when comparing growth rates with the other parts of Croatia where such circumstances were not as present, was delayed. Restoration of the devastated, and at the same time modernization of the outdated infrastructure, development of the educational, cultural and social potential, require greater funds and means of financing of the capital budget than the current ones that rely on the income from the local budget, state funds and bank credits.

2. Financing of public investments on the local level

In the macroeconomic and theoretical sense, the governing structure must, in its annual budget, provide similar conditions for the development of all the regions of the country. According to Bajo and Jurlina Alibegović (2008, 99) such distribution is achieved by fiscal balancing that starts with the reduction of the differences in the fiscal capacities of the local governments. However, natural, demographic, historical, political and other circumstances have created different conditions in certain parts of Croatia. Inequality of income sources in each of the local and regional part requires income distribution and the donations from central governing body, but only with the purpose of maintaining the minimum level of public service.

In private, as well as in public sector, regular income can just partially, or not at all support the investment decision, we have to focus on the external sources of financing, in which case we have to consider a number of leasing factors. According to Bratić (2008, 155), the power of making decisions concerning financial aspects of the local self-government focuses on the central level of government, so that those local units were, or for the most part still are, financially dependent on these transfers (grants) of the central level of government. Thus the capital investments, often financed by planned capital tranfers and state funds, are unable to yield sufficient results for the stimulation of the healthier development due to weak fiscal capacity of such sources.

"The golden rule of public sector borrowing" claims that a budget deficit is justified if it is a consequence of some new public investments, and all that with the purpose of preserving the public goods in a good state (Kellerman; 2007, 1089). If current expenditure is financed through taxation and investment is financed through borrowing, current taxpayers pay for current spending but future generations bear the costs of borrowing, as it will be they who gain from investment. It does not greatly matter whether the government invests in public consumption durables such as operas or parks or in productive projects that generate growth and improve the private factor productivity. If the government uses borrowing to finance public investment, the golden rule states that tax revenue covers public interest payments plus depreciation, so that net investment equals net borrowing.

Kellerman (2007, 1101) concludes that borrowing and investment quotas of EMU countries provide evidence in which high public borrowing does not particularly cause a high level of public investment. "Golden rule" accepted by the countries of the EMU zone, should also be applied in Croatia, because borrowing by the local and regional governments is not always motivated by financing capital investments, but also by the financing of short term budget deficits which were not the result of the investment. For the financing of the planned public investments (non-financial asset) through borrowing from banks or the issuing of securities, local and regional governing bodies in Croatia have to ask for an approval from the Government. They can borrow only for the purpose of the investment in the capital projects, in such a way that the yearly installment of the credit, including previous borrowing does not exceed 20% of the income in the previous year[1]. Furthermore, borrowing will not be granted to

[1] Finance Act (Narodne novine, No. 92/94, 96/03 i 87/08), The Republic of Croatia Budget Receipts and Expenses Act (Narodne novine, No. 171/04, 148/05, 137/06, 28/08) and Encumbering Procedure JP(R)S and warranty granting JP(R)S Protocol (Narodne novine, No. 55/04).

the units whose business income in the previous year exceeded the business expenditure. So, the units which do not meet the criteria have to resort to some other efficient solutions in financing the capital investments.

Most economic studies focus on public investment in infrastructure such as highways and other transportation facilities or communication systems owned by the public sector. In recent empirical analysis, different methodologies have been followed to investigate the impact of public investment on economic activities. In most of this research, measures of public investment are found to increase aggregate output. Yet there are exceptions (Romp and de Haan; 2005, 72). However, if certain public investment is assumed to be growth enhancing, the question remains whether governments choose the right projects and the right level of investment or the appropriate means of finance, and whether public investment decisions are efficient.

3. Financial status of regional and local units in Eastern Croatia

Three counties, out of five that geographically make up the region of Eastern Croatia, occupy the lowest positions on the scale of Gross Domestic Product (GDP *per capita*) in 2004[2]. This should motivate the search for the causes of this state and introduction of changes.

Bratić (2008, 155) concludes that the most common differences in the development of local self-governing units are related to the structure of the local self-governments, the way that local administrations are structured and different solutions for fiscal activities of a local self-government. Reforms often turn out not to be the best for problem solving on the local level. The ones that should be mentioned are the existence of extremely small municipalities, the problem of insufficient fiscal capacity of lower governing levels, uneven distribution of power among local bodies or the bodies of the central government, as well as the problem of local ownership.

Fiscal decentralization and grants from the central government can help to solve the problem of current expenditure in the local budgets, however, it is obvious that values of such transfers are unable to keep up with the continuous pace of the capital investments. The set pace is expected to meet the development needs of those parts of Croatia that have been war-stricken.

Table 1. The level of borrowing and capital investments in non-financial assets and the investing share in the overall budget expenditure in the counties and the

[2] Županija u brojkama, 2006. Publication of State statistical office in Osijek-baranya County, Osijek, 2006.

larger cities on the territory of Eastern Croatia in the period from 2004 to 2007 and the plan for 2008

in 000 kn

Local or Regional Public Unit	2004.		2005.		2006.		2007.		Plan 2008.	
	Borrowing*	Investment **	Borrowing*	Investment **	Borrowing*	Investment **	Borrowing*	Investment **	Borrowing*	Investment **
Osječko-baranjska	-	29.120	14.500	52.878	10.000	46.560	20.000	35.578	-	58.884
Share in total expenditures		15%		21%		18%		12%		17%
Vukovarsko-srijemska	2.577	6.848	2.000	9.732	230	12.980	44.311	23.811	37.500	63.812
Share in total expenditures		6%		7%		8%		13%		28%
Brodsko-posavska	-	13.235	-	15.711	-	16.629	-	20.128	10.000	20.964
Share in total expenditures		14%		15%		16%		16%		13%
Požeško-slavonska	-	10.093	-	10.562	35.525	3.386	-	4.035	-	13.426
Share in total expenditures		18%		17%		9%		12%		14%
Osijek	50.789	50.057	5.510	58.845	1.319	48.437	24.879	55.234	25.000	96.945
Share in total expenditures		15%		16%		12%		13%		20%
Beli Manastir	2.620	7.581	-	6.086	-	9.472	-	4.947	-	13.472
Share in total expenditures		22%		21%		28%		14%		30%
Našice	-	4.270	-	2.842	-	7.241	-	7.746	3.675	9.483
Share in total expenditures		17%		11%		24%		23%		25%
Vinkovci	542	9.289	-	6.767	-	4.938	41.927	10.893	-	114.663
Share in total expenditures		14%		10%		7%		12%		55%
Vukovar	-	3.768	-	6.499	-	23.628	-	23.922	-	46.898
Share in total expenditures		6%		9%		28%		26%		30%
Županja	-	4.397	-	1.736	-	4.993	-	7.530	12.000	7.315
Share in total expenditures		21%		9%		18%		22%		17%
Brod	7.733	22.525	9.806	12.287	2.741	15.895	-	23.779	72.444	87.270
Share in total expenditures		20%		11%		13%		17%		39%
Požega	-	10.233	-	4.778	5.000	5.807	10.000	7.609	-	15.285
Share in total expenditures		18%		8%		10%		11%		17%

* Position 82 in the Budget - Revenues originated from selling securities and including position 84 - Borrowing receipts.

** Position 42 in the Budget - Expenditures on account of purchase of produced long-term assets

Source: Author's calculation, data provided by the Ministry of Finances, Republic of Croatia, Local budgets – archive 2002 – 2008, (http://www.mfin.hr/hr/lokalni-proracun-2002, access 12-2-2009

In this section we set out the empirical context of the problem by showing budgeting data for four of five counties in Eastern Croatia and eight belonging cities. Table 1 shows encumbering amounts by the county, i.e. the belonging cities in the period between 2004 and 2007, including a planned amount of borrowing in 2008. In the same manner, alongside with these data, the table also shows the value of capital investments and their share in the overall expenditure in the belonging local budget. The share of the executed capital investments of the units showed here goes up to no more than 22% of the overall expenditure. Quota of data correlation on the value of borrowing and investment in the counties is 0.21 which indicates that the variables are virtually unrelated. Therefore, the public investment financing is not connected to borrowing, at least not for the most part. Furthermore, regarding the correlation

of the data on the value of borrowing and the investment of all the counties and the cities from the Table 1 we come to the correlation quota of 0.16. If we include smaller towns in the result, the connection of the borrowing for the purpose of capital investment financing is even weaker.
The overall value of planned investments in public investments for the year 2008 from the Table 1, in the majority of cases significantly exceeds the value of the executed investments in the period from 2004 to 2007. That indicates the great demands which the budgets of these units have to face and are obviously too high for the units to meet.

The insight into the income of the local and regional units from the Table 1 shows the structure of the long term borrowing in conventional ways, that is to say, through business banks credits, and, on rare occasions, by giving bonds, which tells us that these units have a similar structure of the public debts, and similar ways of capital investments funding. We can conclude that the common ways of managing and funding of the public investment projects have, to a certain extent, influenced the current state of affairs in the public sector and obsolescence of the infrastructure in the Eastern parts of Croatia, in comparison to the rest of the country. Although the borrowing, above all, depends on the decision of the local authorities, the continuation of managing the capital investments in the public sector in the current fashion obstructs the development and regional balancing.

4. Modern ways of making use of public investments by including a private partner

4.1. The effects of public sector funding

When local units borrow from the banking sector, according to Bajo and Jurlina Alibegović (2008, 147) it can trigger the growth of interest rates and can lead to less favorable conditions in terms of economic subjects' encumbering. On the other hand, the increase of deficit can influence the inflation growth, which, again, can trigger the growth of interest rates. The central governing body grants the long-term leasing to the local and regional units in the form of credits, or bonds, and all that for the purpose of construction, restoration or adaptation of certain objects, as well as for purchasing of necessary equipment.
The advantages of the public investment funding through the long-term loans are numerous, which is not the case with funding through the financial means gained from the current income. Thus Kellerman (2007, 1089) claims that long-term borrowing justifies long-term amortization of assets, reduces the dependence on the current income whose direction is determined by anomalies and the state of affairs in the economy. The costs of borrowing can be overcome by the benefits of the accelerated economic development which is triggered by new public investments etc.

When we talk about the effectiveness of borrowing, we talk about the introduction of some new, alternative sources of funding which would yield better results than the previous ones, and which the local units have at their disposal. We should take into account that the final goal is to offer a quality and universally accessible public service which can be achieved by either efficient borrowing and capital investments, or by the utilization of the model of renting specific assets from the private sector, in that the assets have the capacity for provision of public services. Such public investments can be obtained in several ways (Bajo; 2004; Bajo and Jurlina Alibegović; 2008; Bratić; 2008; Kellerman; 2007):

- Budget
- Borrowing
- Privatisation
- European Union Access funds
- Private financial initiative
- Public – private partnership

Based on the results of the analysis of the data from Table 1, it can be concluded that the budget and borrowing have not, so far, proved themselves sufficient sources of funding that can provide efficient and quality development of the public sector in the Eastern Croatia, which would generally facilitate the faster growth and development of local economy. European Union Access funds have considerable special purpose financial means at their disposal, and they often play a significant role in terms of decision-making concerning capital investments. However, their purpose is, to a large extent, restricted to specific areas in the public sector. Privatization of trade associations under the ownership of local units, can serve as a base for funding, on condition that they attract the interest of entrepreneurs. Furthermore, the financial means gained from previous privatizations have often ended up in pension, health and other state funds, so the local units did not directly benefit from them. It is important to point out that the assets belonging to a number of business subjects were destroyed during the war on the territory of Eastern Croatia.

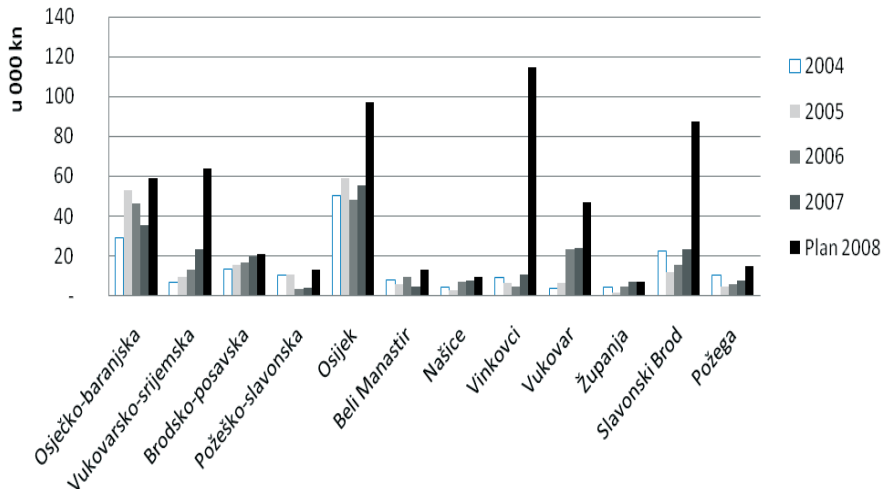
4.2. The needs for new challenges on the local level

The decision on the execution of the efficient public investments is an important challenge for a local self-government which is manifested in the fact that local governments have begun with the more frequent establishing of

regional development agencies[3] whose task is to mediate as well as to promote the needs of local governments, with the purpose of the best possible accumulation and distribution of financial means to the appropriate projects which have a public and economic significance, especially when it comes to EU access funds. Technological centres play an important role in that they connect the same needs with scientific research institutions.

It is only natural to expect that budget propositions which refer to the development projects with public significance exceed budget possibilities. However, it is just as justified for the government officials to ask for the possibility that these projects be accepted and executed. Management ability and the insight into different sources of financing play an important role in this process.
Graph 1 shows considerable discrepancies with the majority of the analyzed units between the executed (from 2004 to 2007) and expected values of capital investments in the non-financial assets (plan for the year 2008) within the budget. Thus, we can conclude that there are ever greater needs for public investments through which the quality of public service provisions would increase, aiming at making them more accessible to a larger number of citizens in this part of the country.

Graph 1. ***The overview of the executed (2004 - 2007) and planned (2008) capital investments in the counties and cities of Eastern Croatia***



Source: Table 1.

[3] Local Development Agency of Slavonija and Baranya d.o.o_ in Osijek, Local Development Agency Vallis Aurea, d.o.o in Pozega, Local Development Agencies – LEDA with branches in Vinkovci and Sisak.

According to Allen (2001; 14) it is necessary to examine the ways to expand the scope for private financing of capital projects. Obviously, the interests of the taxpayer have to be protected, but it also needs to be ensured that sensible investment decisions are made whenever the opportunity arises. Central and local governments should allow greater use of leasing where it offers good value for money. As long as it can be shown that the risk stays with the private sector, public organisations will be able to enter into operating lease agreements, with only the lease payments counting as expenditure and without their capital budgets being cut.
Taking into account the indicators and the structure of borrowing by the local units, it is necessary to observe a broader picture, search for more beneficial and more effective ways of public services provision, or in other words, for alternative solutions concerning the problem of the public sector development, which will be based on the provision of the public services related to the assets not owned by the local self-government, but instead, the provision of the services ensured by a private partner and arranged by a long-term contract. There are a few modern models which were created based on this assumption and some counties and cities have already put them into practice. However, this was performed in a very poor manner, and based on the experience from other European countries.

4.3. Modern models for provision of public services by the introduction of a private partner

The modern models which rule out the conventional methods of public funding as a prerequisite for initiation of public investments are encompassed by one common term - Public-Private Partnership (PPP). A number of different subtypes of partnership fall into this category, depending on their characteristics, however the primary goal is to introduce business subject from a private sector into the process of the provision of public services, in which case, in exchange, the buyer from the public sector would pay the compensation to a private partner over a long period of time. Bajo and Jurlina Alibegović (2008; 203-204) present these models as appropriate sources of the development projects funding in Croatia.
According to data from local budgets, there is no official evidence of budget expenditure related to the payment of the compensation as proposed by these models, which indicates that the units of regional and local self-government in Eastern Croatia have not yet adopted this type of contractual relations, even though the PPP models have been regulated in Croatia[4]. The government has,

[4] There are "Guidelines on the implementation of signatory public-private partnership forms – PPP" ("Smjernice o primjeni ugovornih oblika javno-privatnog partnerstva – JPP") (Narodne

with the support from the institutions of the European Union, brought about a regulation, thus showing its interest in the matter and drawing the attention to the necessity of the implementation of these models, in order to strengthen the funding structure, as well as to facilitate, in general, the execution of the development projects proposed by the development programmes. It is up to the local governments whether these models will be followed. The models should serve as channels for the flow of major infrastructural and some other projects that satisfy certain public needs from the domain of the public government (schools, hospitals, sports facilities, airports, prisons, public utility services, transportation infrastructure).

The golden rule is not broken by funding projects through the PPP, as the capital cost of the project is allocated to the private sector. However, it is worth noting that supporting a project using conventional methods of public funding does not break the golden rule either, as the borrowing for such a project could count as capital investment and not as funding for current spending.

The private sector already builds most public facilities but the PPP also enables the design, financing and operation of public services to be carried out by the private sector. For example, under the PPP, the public sector does not own an asset, such as a hospital or school but pays the contractor a stream of committed revenue payments for the use of the facilities over the contract period. Once the contract has expired, ownership of the asset either remains with the private sector contractor, or is returned to the public sector, depending on the terms of the original contract.

Allen (2001; 20) has shown that from the very start of the implementation, it is clear that the capital costs of the public sector have been compensated for by the capital costs related to PPP, however, the results of the resarch also show that the later implementation of the PPP increases the overall expenditure related to the public investments within the budget. The most obvious effect of the PPP on the public finances is the immediate reduction of spending and its replacement with a stream of future liabilities. This can be explained by the fact that the compensation paid to a private partner is not, in fact, a part of the capital expenditure, but a current liability related to the capital investment that stretches over a long period of time.

novine 98/06), and The Directive on prior compliance with a conclusion of a public-private partnership agreement based on the private financial iniciative model (Uredba o davanju prethodne suglasnosti za sklapanje ugovora o javno-privatnom partnerstvu po modelu privatne financijske inicijative) (Narodne novine 20/07), as well as the Act on public-private partnership which has been passed (Narodne novine 129/08).

5. Conclusion

In Croatia private sector finance should be the main source of growth in public investment projects and the Government would not approve capital projects unless private finance options had been explored. Wide application and numerous positive experiences with PPP in the countries of the European union should encourage representatives of the counties, cities and municipalities of Eastern Croatia, the same way it has been done in other parts of the country.
The analyses of data on public borrowing and the capital investments from local budgets of the counties and the bigger cities on the territory of Eastern Croatia has led to the conclusion that the borrowing structure uses only the conventional models of funding, which is insufficient, and that the borrowing and long-term investments were not connected over the period of time that has been surveyed. Another conclusion is that the needs for public investments have considerably exceeded the capacity that the present model of investment managing can ensure.
The main reason for the initiation of the radical changes in the management of the public investments lies in the fact that the previous practice of public borrowing and capital investments on the local level does not follow the conventional rules of borrowing, and thus, does not yield the expected results in terms of economic development, which has been especially pointed out in this paper through analyses of data concerning some local budgets. Furthermore, the conventional ways of funding are not efficient enough to meet the ever greater needs for public services by both the population and the economy. Apart from that, we have to bear in mind that the capital expenditures structure should be more complex and more efficiently managed.

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LEGAL, ECONOMIC AND POLITICAL ASPECTS OF ESTABLISHING FISCAL AND MONETARY SOVEREIGNTY OF THE REPUBLIC OF CROATIA

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Abstract

Croatian fiscal and monetary system stayed without one part of its income because of no fiscal and monetary sovereignty over the occupied territories. This would be of great importance especially after the war when Croatia claims the war compensation from Serbia and Montenegro, so it will be necessary to estimate the amount of public income which was collected on the territory of Republika Srpska Krajina in order to have an accurate amount once when Croatia claims its war and collateral compensation form these two states. The estimated public income is extremely important fiscal subject which was not transferred into the state budget and the budgets of the local communities since these financial means are usually ignored when Croatian war compensation is discussed publicly, scientifically and among scholars.

JEL classification: E42, E52, E62, H30, O23

Keywords: fiscal sovereignty, monetary sovereignty

Introduction

The Republic of Croatia belongs to the circle of countries founded after the dissolution of the Socialist Federative Republic of Yugoslavia. Along with establishing a new social, political and economic system, Croatia was waging a defensive war. On the 8th October 1991, due to constantly increasing war of aggression waged by the rebel Serb and the former Yugoslav National Army, as well as due to the violation of the international laws of war, the Parliament of the Republic of Croatia adopted the Resolution to break all the state-forming bonds based on which it used to form SFRY with other republics and provinces. Not long afterwards, i.e. on the 16th December 1991, the Council of the European Union published a paper titled „The Directives for the recognition of new states in Eastern Europe and the Soviet Union" that set criteria regarding respect for human rights, non-changing borders and peaceful policy and the conditions for the recognition of new states. Based upon these criteria the

Republic of Croatia was internationally recognized on the 15th January 1992. During the Homeland War as well as after the cease of war activities a certain part of Croatian territory was found not to be within the jurisdiction of Croatian authorities. In the occupied parts of Croatia the rebel Serbs who were politically and logistically supported by the Yugoslav Army, founded a quasistate formation known as the Republic of Srpska Krajina.[1]

The founding of autonomous provinces, as so called "Republic of Srpska Krajina", were illegally formed by the rebel Serbs according to the legal regulations of Socialist Republic Croatia (SRC) and Socialist Federative Republic of Yugoslavia (SFRY) The same qualification of this act can be found within the international law and therefore the so called Republic of Srpska Krajina never got a status of an international legal subject. Furthermore the provisional law of rebel Serbs which was used as a background for the founding of Serbian autonomous provinces and Republic of Srpska Krajina in Croatia was illegal. This process started back then during the existence of Socialist Federative Republic of Yugoslavia and Socialist Republic of Croatia, although according to the law regulation and national and republic constitutions existing then, it could not be justified, nor this very process could become legal according to Republic Croatia's so called "Christmas Constitution " in Dec 1990. As it was clearly put down in the constitution of SFRY, the republic territory could not be changed without the republic's consent, the republic borders cannot be changed without the international consent. It was further known that SFRY according to its Constitution was defined as a united state, consisting of willingly joined nations, socialist republics and autonomous provinces, meaning that there could not be any other form of autonomy within its borders, like Serbian autonomous province or Republic of Srpska Krajina. We should mention that the national constitution of SFRY and the constitution of Republic of Croatia within its regulation granted the possibility of self-determination and the right to separate, since the constitution of Republic of Croatia defines Socialist republic of Croatia as a national state of Croats, a state of Serbs in Croatia and a state of other nationalities living in Croatia. It is obvious that the national and republic law regulation tolerated the possibility of the republics to separate, but not of some separatist groups like rebel Serbs on the occupied territories of Croatia.[2] This constitutional right was recognized by the international community as it was clearly stated at the Peace Conference of Yugoslavia (Arbitration Commission), opinion no. 3, dated 11 January 1992

[1] Compare: Brekalo, M.: *Suverenitet Republike Hrvatske 1990-1998.*, SVJETLA GRADA, Osijek, 2009., p. 129-165, 197-215, 219-225, 251-333.

[2] Compare: Babac, B.: *Upravno pravo – Odabrana poglavlja iz teorije i praxisa*, Pravni fakultet Sveučilišta J. J. Strossmayer u Osijeku, Osijek, 2004., p. 172-181, 432-435; Babić, M.: *Kako ishod upravnog prijepora o konvalidaciji može biti prethodnim pitanjem za odlučivanje prijepora parbenoa*, Pravni vjesnik, br. 3-4, Osijek, 2003., p. 123-150.

(on international borders of new states).[3] On the other side, the illegitimate actions of rebel Serbs on the territory of Republic of Croatia can be clearly seen through the role which Slobodan Milošević played, since he was "*spritus movens*" of all the Serbian actions. Therefore he was according to the Regulation of the International criminal law, individually responsible for the war crimes described in the indictment of the International Tribune on ex.-Yugoslavia. As it is known Milošević was prosecuted for crimes against humanity by the International Tribunal on ex-Yugoslavia, for the severe violations of Genève conventions and violations of war conduct. It is well documented in the indictment that he participated in the joined criminal actions that are punishable according to the Regulation of the International criminal law. The purpose of Milošević's masterminded criminal actions was to forcefully displace most of the Croats and non-Serbs from the third of Croatian territory, which he planned to put under Serbian authority. The public prosecutor of the International War Tribunal on ex-Yugoslavia explicitly accused Milošević and his associates for trying to amputate one part of the territory of Republic of Croatia and for trying to found a quasigovernmental state Republic of Srpska Krajina and most of them were indicted by the same tribunal. It is obvious that Republic Srpska Krajina was not only illegal according to Croatian positive law, but also the international law was of the same opinion.

The above mentioned describes quasigovernmental Republic of Srpska Krajina as: non constitutional entity created on the territory of republic of Croatia with no democratic legitimacy with no legal continuity of any state, responsible for ethnic cleansing of all non Serb population on the occupied territories of Croatia and creation of ethnic cleansed Serbian state consisting of every Serb living on the territory of Republic of Croatia who was according to the records the citizen of SFRY and automatically a citizen of this quasigovernmental state, the direct financing of the semi declared government on the occupied territories of Republic of Croatia by the Republic of Serbia, the permanent goods supply, military help together with trained soldiers and paramilitary groups, so called "volunteers" coming from Serbia and Montenegro. This quasigovernmental entity was never recognized, neither *de facto* nor *de iure* by any state and it did not have a status of an independent state as the international law prescribes it, meaning it was never in the international law terms a legal subject. Besides the mentioned, we must add that the concept of the status of Republic of Srpska Krajina constantly changed, as it was the case with the previous autonomous provinces. The very first option was to join the self proclaimed autonomous territories to the Republic of Serbia, the second was to proclaim these entities the federative states of remaining SFRY, consisting of Serbia and Montenegro,

[3] Compare: Degan, V. Đ.: *Hrvatska država u međunarodnoj zajednici*, Nakladni zavod Globus, Zagreb, 2002. p. 334-379.

the third option was an integral concept of creating a Serbian united states and the fourth to create a new federation of all Serbian states. All these options and ideas of so called "Serbian nation-builders" are well presented in the legal documents written by self proclaimed governments on the occupied territories of Republic of Croatia.

If we accurately analyze all the legal regulations of these entities regarding the fiscal and monetary politics of Republic of Srpska Krajina, we could easily see that most of the legal acts were taken from the positive law regulations of Republic of Serbia or SFRY what proves together with all other information about the war, that the occupation of the territory of Republic of Croatia was planned and masterminded by Milošević's military regime.[4]

The occupying forces abolished the fiscal system of Republic of Croatia on the occupied territories and introduced fake fiscal system in order to enforce different payments. It must be pointed out that this quasigovernment of Srpska Krajina did not enforce accurately the payments, so that the smuggling of the different goods was widely spread, enabling some individuals to get enormously rich and enjoy their wealth now living in Republic of Serbia, Montenegro and Republic of Srpska Krajina. This quasigovernment introduced its quasi monetary system which was a normative compilation of monetary system of SFRY, therefore in some period, the National bank of Yugoslavia and Service of public account created the payroll accounting system on the territory of Republic of Srpska Krajina. All money transfer was done over the accounts of Service of public account in Vojvodina, in the towns of Sombor or Apatin and etc. We can only conclude based on this information that a lot of transferred money ended in the state budget of SFRY.

Due to the occupation, some territories of Republic of Croatia did not have their production or infrastructure developed, all social activities stopped, having a complete social situation distorted as a consequence. Nevertheless, the Republic of Croatia not controlling all its territory, experienced low economical growth, lower national income, as well as ill functioning of fiscal capacity of the national budget and small budgets of local communities. It was obvious that not

[4] Compare: Matić, B.: Neke specifičnosti uspostave hrvatskog monetarnog suvereniteta u segmentu gotovinskog novca, Numizmatičke vijesti, br. 1, Zagreb, 2006.Brekalo, M.: O strukturi i ostalim značajkama javnih prihoda ubranih na nekada zavojevanim područjima Republike Hrvatske, osvrt na ustroj zavojevačkih vlasti, Pravni vjesnik, br. 1-2, Osijek, 2006., p. 89-101.; Brekalo, M.: O nepropitljivosti monetarnog suvereniteta Republike Hrvatske nad nekada zavojevanim područjima (1991.-1997.), Pravni vjesnik, br. 1-2, Osijek, 2006., p. 215-239; Babić, N. – Geiger, V.: Prilog poznavanju monetarnog sustava Republike Srpske Krajine, 1992.-1995., Numizmatičke vijesti, br. 58, Zagreb, 2005., p. 58-73.; Pukanić, S. – Krasnov, Gj.: Pobunjeni Srbi u Republici Hrvatskoj osnovali Krajinu i izdali svoje novčanice, Numizmatičke vijesti, br. 51, Zagreb, 1998., p. 47-61.

having money transferred from the occupied territories, the Republic of Croatia witnessed lower quality and quantity of meeting its public needs. Once when these territories were liberated, Croatia had to regulate legally the problem of these territories by proclaiming them "territories under special state care" and having as its goals to rebuild them after the war, to see displaced people and refugees returning back, stimulation of demographic and economical growth and helping these territories to reach the same level of the development as the other parts. As well as in the case of fiscal sovereignty due to the occupation of some territories, the Croatian government did not have a unique monetary sovereignty. First few years after becoming independent, Croatia experienced significant inflationary changes since the National bank of Croatia could not regulate the quantity of the money which circulated in the standard means of the monetary-credit politics. On the other hand, there was no money market on the occupied territories, no money transactions and accurate inventory of money transfers, meaning the on these territories all money transactions did not have a strong institutional structure and formal organization, as we had in the other parts of Croatia. Therefore, a lot of people failed to have any savings and investing capacity, what affected the demand for the goods and the products on the Croatian market.

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THE PUBLIC HEALTHCARE SYSTEM IN THE TRANSITION COUNTRIES THE CASE STUDY OF SERBIA

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Abstract

The public healthcare system of Serbia, from the beginning of the past century, when more or less the unperceivable demolition of socialism, was faced with great problems. During the time, they became almost unsolvable due to servitude to old ideas and approaches to goals, organization and managing the state and public sector, political work and everday public and business managing. The application of ruling ideology, performed during the nineties of the last century and the restoration of capitalism expressed itself as unproductive, because everything else remained the same – methods of work, approach, values and standpoint. Its basic feature is institutional non-regulation being the consequence of unclear, foggy and manipulated transition. There are multiple reflexion to the public healtcare system. First the space for the wild privatisation of one part of the public healthcare system was open as well as for the development of irregular partnership between the public and private sector in the production of public goods and services. Second, the creation of a complex, to distribution oriented coalition was initiated that, within the framework of historical heritage, very skillfully using its political and any other influence intended to retain such a situation and stop necessary structural changes in the public healthcare system and the regular development of the private sector as well. Third, within of the framework of foggy and damped transition, arose the miracuous mixture of quasi-public, quasi-market and administrative mechanisms of regulation that nonsensenses necessity for the existence of the public healthcare system. Conseqently, Serbia needs the total reingeneering as a radical, qualitative and on inovations based methodology which, on the basis of development vision, should determine the direction of institutional changes and various reformatory operations in order to construct a radically new public healthcare system – oriented to prevention and preservation of health capacity (of the whole national population) on the basis of development of the relevant system of life and work while the medical treatmant of the mayor part of maladies, especially of those needing sofisticated and costly technologies, should be awarded to the private sector on the basis of personal participation. The key of implementation is in the new definition of the contents of paradigm “equity”. Paradigm that the public health insurance should provide the best healthcare for everybody is false and financially untenable even for much more wealtheir societies. On the other side, equity means necessity to provide the health care in the framework of public, transparent and precise minimum standards for everbody (meaning that nobody will die because he is not insured, because he has not money for cure or, simply, as often happens in Serbia, because he do not know relevant people).

JEL classification: H51, H61, I12, I18

Keywords: Public healthcare system, Unclear, foggy and manipulated transition, Institutional non-regulated environment, Total reingeenering, “Equity”

1. INTRODUCTION

This paper explores the problem of management of a public healthcare system in the transition countries, through case study of Serbia. The fundamental motive for this research is a difficult situation in the healthcare system in Serbia, and at the same time it is an attempt to explore a realistic model for improvement of its performances in the sense of providing necessary (health) services of adequate quality without financial barriers for the entire population in very limited (general) public institutional and material limits. Majority of politicians, researchers and experts, including the foreign factor, too, see a solution for improvement of performances of public healthcare system, on one hand in revitalization of existing capacities on basis of reconstruction of the existing premises, supply of new equipment, sale or rental of surplus space and rationalization of the staff, and defining a new model of payment to the providers of the services of healthcare, on the other hand [14].

The basic characteristics of the official strategy are: (1) An attempt to, following certain models of reform of the system of public healthcare realized in other (post) socialist countries, members of the European Union, open a space for reduction of public expenditure for health protection in the gross social product (from 6.6% in 2006 to 5% in 2009) and (2) Exclusion of the private sector from the public program for providing healthcare. Belief in a quick and efficient realization of this reform results from the fact that within the preparatory work for European integration in those countries a radical reconstruction and rationalization of public healthcare system has been made on basis of formal implementation of so-called European norms. However, on the other hand, there is no information how much those reforms really influenced the quality of public health services and fulfilled expectations of beneficiaries (the sick, users who are deprived of super specialized services and the most vulnerable segments of the society – the elderly, persons with disabilities, Gypsy population). No doubt those so-called European public healthcare norms have real and scientific foundations and that the reforms in the public healthcare system in Serbia are necessary, however there is no guarantee that its implementation will radically improve the performances in a short term period. In fact, the process of the social and economic development of Serbia so far have indicate that much better (scientifically determined and empirically confirmed) models of management of production (of public goods – author's remark) have not been accepted by (national) practice, in other words, there is a question “Why the practice does not use much bigger possibilities that have been offered?”. Before a more detailed elaboration, a short review of the situation in the healthcare system in Serbia and open questions in theirs work.

2. ESSENCE AND CAUSES OF CRISIS OF THE HEALTHCARE SYSTEM IN SERBIA

Serbia entered in the transition with a developed model of a "welfare state", which, in the limits of existing material possibilities, provided a high level of social and healthcare to the entire population. The national version of the "welfare state" was marked by socialist character of political and economy system, but its foundations reach back far in the past and are linked with the results of the revolution that took place at the beginning of the 19th century. Within the national liberation from the Ottoman rule, a social revolution took place by which a feudal system was repealed and foundation institutions of so-called "peasant economy" were established. In order to maintain and advance the national independence, the political elite gradually developed institutional and physical infrastructure, which, even in the environment of general poverty due to underdeveloped economic basis, managed to provide a minimum of healthcare for the majority of Serbia's population[1]. Very early Serbia accepted the so-called "Bismarck's model", too. In the period after the Second World War, the system of healthcare went through several phases in its development[2], so that in 1970, an equal scope of healthcare for all citizens with very wide range of rights and under general conditions guaranteed by the state by compensation of lacking funds from the budget.

Deterioration of the healthcare system began at the beginning of the eighties of the last century, in the process of more or less invisible deterioration of socialist started. Due to the ways, in which public expenditure was financed, the healthcare continued with illusionary development, but as soon as the end of

[1] In Serbia for a long time there was no explicitly defined healthcare policy with clearly and precisely defined obligations of individual, state and healthcare services (the first explicit healthcare policy was formulated as late as 1968!). The development of public healthcare service went an elemental manner, and in most cases above real economic possibilities (mostly because of dominant culture of egalitarism and incapability of the social – economic elite to replace it by a culture of economic freedoms in a propulsive developmental environment, and also very strong individual and group initiatives for advancement of public healthcare, because many of the key actors of the political stage of Serbia until 1914 were medical doctors by profession). It often resulted in development of too big and inefficient infrastructure, neglect of primary and overstressed secondary and tertiary healthcare, irrational usage of capacities, hyper production of cadre, etc. On the other hand, frequent changes of normative regulation were made causing from time to time confusion and acceptance of temporary solutions. Thus, seen as a whole, until the beginning of the eighties of the twentieth century, the development of the healthcare was moving, except in war periods, along a rising path and the population believed in a continual growth of its efficiency and rise in quality, following models of much more developed countries.

[2] In former Yugoslavia in forty years (from 1950 to 1990) there were 8 reforms of the healthcare system and healthcare insurance.

that period a gap between normed rights to healthcare and capability of their financing from public sources became visible[3].

Political and economic fall of socialism in the beginning of the nineties of the twentieth century brought about the falling apart of Yugoslavia, civil wars, various international political and economic sanctions, NATO aggression and restoration of capitalism, causing: (1) Aggravation of health state of the population due to living under great stress, expansion of economic and social hopelessness, a tide of risky behavior and generally social and personal carelessness about health and (2) Decline of scope and quality of public health services due to the lack of resources in the health insurance funds and devastation of curative and preventive infrastructure. Personal participation in financing costs of healthcare increased and a significant part of health services production was privatized. In order to improve their material position, employees in the public sector looked for additional sources of income by working illegally ("black market") in private offices and hospitals or they illegally privatized public resources. A widespread opinion of corruption in the public system of healthcare exists in general public; however it has never been proved.

In essence, in period of the (post) socialism transition, a threefold healthcare system was created. The first, private, financed directly by the users, in which, after seventeen years, a high quality of health services is provided; the second, in which users provide health services on irregular basis within the public curative infrastructure (for example: by purchasing medicines, medical care, hygiene and other materials and by paying privately to the medical staff) and the third, the public one, coping with periodical breaks in supply of necessary medicines, medical care and other materials and inability of timely performing complex diagnostically examinations and urgent operations.

The paralysis of the public healthcare system hit the socially most vulnerable segments of population in particular: children, the old, and persons with disabilities, women, and the Gypsy population being absolutely excluded from it. In the circumstances of mass unemployment and poverty, expansions of contagious and noncontiguous diseases occur, especially in children. Those diseases were believed to be extinct, but recur as consequence of bad quality and structure of food, personal hygiene, housing, water supply, improper drinking water quality and, of course, worsened conditions of medical treatment.

In the period after 2000 a number of documents were imposed and numerous proposals and drafts of documents formulated as an attempt to define a health policy and development strategy of public healthcare system. Among other

[3] In the period from 1980 to 1990 in Serbia (without territory of Kosovo and Metohija) gross social product was reduced for -3%, while participation of expenses of healthcare in the gross social product increased from 4,2 to 6,4% or really for 47,8%, i.e. around 352 US$ per capita according to the current value domestic purchasing power of the national currency.

things, in 2002 the Law on Healthcare of 1992, passed within institutional reform for demontage of institutions of the social system, was thoroughly innovated, and in 2005 a totally new law was passed, for which it has been claimed that it has been mostly adjusted to the currently valid instructions and positive practice in the European Union. However, little has been done in their implementation, even less on improving the situation, and almost nothing has been achieved in reaching the European standards of health services. All the time, it has been pointed out that the main reason for poor functioning of the healthcare system is the lack of financial resources[4].

The presented research shows that institutional reforms and partial privatization and commercialization in the last 17 years have not resulted in revitalization of the healthcare system. It means that great expert zeal and scientific thorough approach should be devoted to a deeper analysis of the structural disorders and problems related with the role of the public sector in managing the system of healthcare. Otherwise, sooner or later a question will impose itself: "What is the use of institutional reforms, privatization and deregulation in production of healthcare services according to the European Union, if they do not result in advanced health of the entire population and their education to face the problems and stresses of restoring capitalism, accepting individual responsibility for creation of decent conditions for life and work and challenges of the integration to Europe?". In that way three key problems of the historical heritage and vague, nontransparent and manipulative transition have been introduced and placed in the center of healthcare system reforms. The first is a consequence of socialization of economic risks of illnesses at work. In spite of nominally high ethical standards of protection of life and health, a large number of work posts and the micro-environment in which work processes took place, were created in such a way that they did not in the least contribute to maintaining health at work place. In fact, the system of health and social care did not contain realistic economic motives and administrative force, which would force economic subjects and employers to reduce healthcare risks at work places into socially acceptable limits by application of technically advanced equipment and specialized education, especially according to the very exact standards and norms from the relevant environment from which ideals

[4] Regression of the healthcare system in Serbia is result of a disproportionate increase of participation of expenses for those purposes in gross-social product. According to official data, expenditures for healthcare in Serbia have been significantly increased after 2000. In 2004 they were around 300 US$ (209 US$ in public and 91 US$ in private sector) per capita according to actual foreign currency rate and participated with around 10% in gross-social product of Serbia. Preliminary research shows that those relations have remained in 2005 and 2006. According to estimation, gross-social product in 2006 reached 65% of the scope realized in 1990, and the number of population has somewhat reduced, so a conclusion can be drawn that in 2006 the level of expenditure for healthcare per capita is bigger than the one in 1990. Therefore there is a justified doubt that the basic reason of (ill) functioning of the national health system is only of financial nature.

were taken for designing the healthcare system (Scandinavian countries in particular, which often were, explicitly and implicitly, pointed out as a model to be followed in the process of creating the national version of the "welfare state"!)

Analyzing the current reforms of the healthcare system, this problem should be dealt with in three contexts.

The first one is the moral and institutional obligation of a modern state to protect the right of each individual to work under the conditions which will not ruin their health and life in the environment of great disbalance of power between the employer and employee at the labor market. The second, integration into the European Union implies, among other things, implementation of very rigorous standards of protection of employees' right to a healthy and safe work place, as well as the right of users to receive a healthy safe product. The third and the most essential one is the existence of needs that demand creation of adequate work conditions in industry, construction industry and agriculture (where the work conditions are the hardest) for engaging workers from fifty to seventy years of age. Due to demographic regression, young labor power will not be interested in sufficient measure, nor will the system of individual life preferences and labor movement freedoms offered by the European model of market economy direct them to seek their prospects in those work fields within Serbia.

The second has come as a result of development of super specialized secondary and tertiary (meaning very expensive) infrastructure for healthcare in the public sector[5]. The division into sectors shows in practice a whole range of defects: (1) Fragmentation of the healthcare service and too wide introduction of clinical specialty, (2) Nonexistence of continuity of production of healthcare services (3) Very no equalized quality of services, (4) Overuse of higher levels of healthcare (5) Formal approach to health promotion and illness prevention, especially alcoholism, suicide, food related illnesses, smoking related illnesses, drug abuse and AIDS, (6) Neglecting family as a significant factor in health prevention, (7) Extremely low level of doctors working in primary healthcare from the aspect of internal and external reputation of the medical profession and so on.

The third is a consequence of an unclear, foggy and manipulated transition, that is to say, lack of state support to the public healthcare privatization. The growth of private practice in Serbia is going on in the environment of the so-called "passive privatization", demanded by the needs for higher quality of services

[5] Hospital and stationary healthcare in the public sector in Serbia is provided by 42 general hospitals, 15 specialized hospitals, 23 independent clinics and institutes, 5 clinic-hospital centers and three clinical centers and 59 institutes. Those stationary institutions had at disposal in 2002 46,547 beds or 6.2 beds per 1,000 inhabitants. Less than 40% beds are in general hospitals and almost as many (38%) in highly specialized institutions – clinics and clinic-hospital centers.

than the ones provided by the public sector. Strengthening of the private practice has been induced, first of all, by budget limitations in providing services defined by law. A wish to make a fortune quickly and poor control of work and income of the private sector has resulted in rise of number of private out patient clinics, dental and pharmaceutical institutions and super specialized clinics. There is very little relevant information about their effects on the healthcare, but it is undoubtedly clear that accessibility and equality in healthcare have been endangered by that situation, especially because of the mass phenomenon that medical doctors and other medical staff, while working within the system of obligatory insurance, identify and redirect patients into their own private practice, although it is evident that they could be served equally well and with lower expenses in the official working hours.

On the whole, a conclusion can be made that the change of the currently present ideology that took place in the beginning of the nineties years of the last century as well as the restoration of capitalism in case of overcoming the crisis of the healthcare system in Serbia has proven themselves as nonproductive, as everything else has remained the same – working methods, approach, values and attitudes. Its main feature is institutional non-regulated environment – consequence of unclear, foggy and manipulated transition. Reflections onto the public healthcare system are multifold. First, a space has been opened for a wild privatization of a part of the public healthcare system and development of an irregular system of partnership between the public and private sector in production. Second, a favorable milieu has been created for forming a distribution-oriented coalitions[6], which, by skillfully using their political and any other influence, in the limits of the historical heritage, tends to have this situation maintained, thus blocking the necessary structural changes in the public healthcare system and regular development of the private sector. Third, within of the framework of foggy and damped transition, arose the miracuous mixture of quasi-public, quasi-market and administrative mechanisms of regulation that nonsensenses necessity for the existence of the public healthcare system. However, prior to a detailed interpretation of the essence of the

[6] This term means a group of special interest – which, by means of joint activities, ensure their better position in the distribution of gross-social product and wealth without adequate their personal contribution to its maintenance and enlargement. The elementary social – economic features of distribution – oriented coalitions are: (1) a tendency towards creation of monopolistic political, social and economic structures, (2) weakening of interest in adapting to social, economic, and cultural changes in the environment, (3) inclination towards (ab)use of administrative- hierarchy evaluation and allocation mechanisms, instead of implementing market oriented ones, (4) inclination towards stimulating development of distribution-oriented coalitions on lower levels of social-economic organization, in order to cover up in that way real intentions of actors of key special interest groups. Basic causes of existence and development of distribution-oriented coalitions in Serbia and their role in blocking social reforms have been discussed in detail in: Adžić, S. and Popović, D. (2005). Fiscal system and fiscal policy – their contribution to advancement of competitiveness in economy: Case study Serbia**.** *Ekonomija/Economics*, br 1/2005, 173 – 200.

institutional non-regulated environment in Serbia, an attempt will be made to put more light on some crucial aspects in relation to the management of production of public goods, which have not been accepted nor implemented in national practice, because the public infrastructure for providing healthcare services, formally and de facto belongs to the regime of public administration, and not the public service, as it should be in the light of globalization and introducing market mechanisms in the management of public goods production.

3. BASIC ELEMENTS OF MANAGEMENT OF THE HEALTHCARE SYSTEM AS A PUBLIC SERVICE

Management of the healthcare system as a public service, like in any other human organization, is based on knowledge and beliefs about its way of functioning and what and how should be done in order to get from it the very thing that is the reason of its existence, in this case those are concrete healthcare services, in whose reproduction system, parallel with a system of economic criteria, exist also some wider, human and social and political factors which determine scope, quality, prices and production costs as well as dynamics of investment. Therefore, an institution producing (public) healthcare services is characterized by a specific in relation with the alternative production in the private sector. The problem of visioning and making a strategy as an essential statement about the future and the consequences of that choice has been dislocated out of the healthcare system, as in the modern society the decision whether a healthcare service is a public goods or not is in the first place a result of political fight among interest groups, not a result of an optimal process of social decision making. However, independent from this fact whose meaning has been neglected both in theory and practice, for efficient management of production of healthcare services in a regime of a public service, there must be a clear social vision, which explicitly defines: (1) Basic values (leading principles and rules, culture of life and work), which are unchangeable and are expression of the basic beliefs set through a consensus of all relevant options, (2) Purpose expressing clearly the basic reasons of existence of a certain socio-economic system and (3) Mission which is a statement of a clear and motivating goal the majority of the population tries to achieve. Naturally, it must be accepted that the science, at least in the dominating perception of its substance, cannot successfully develop methods and mechanisms for solving problems in the sphere of determining a social vision. Thereby, in fact, in the last consequence, some essential existential issues of production of healthcare services in a regime of the public service, no matter if we want it or not, have been left to voluntarism of politicians. That voluntarism is far from something that could be called the best achievable result (“best practice” principle) even in societies with a developed democratic decision-making in the sense of ensuring righteousness in approaching concrete healthcare services and high level of

political competence. On the other hand, possession and utilization of: (1) Specific knowledge and skills, (2) Ability of genuine understanding of problems and coping with complex and unstable circumstances and in particular (3) Specific abilities of producing solutions and persistence in their realization, can lead to a successful solution of this problem. That is the reason two facts must be stated. The first one is that there is neither direct nor final answer to the question: "How to management of the production of healthcare services in a regime of the public service?". And the second one is that the failure of the public healthcare system is, above all, result of incompetent (political) management.

When seeking an answer to the above stated question, one should understand the essence of the purpose of managing production of healthcare services in regime of the public service, such as: (1) Achievement of the outer mission (not only providing healthcare services in a certain structure, scope and price, but also a great number of other phenomena, such as: employment, reduction of public expenditure, technological development, protection and advancement of the environment, etc.) and (2) Own survival and development (which are not in linear connection, but are based on interaction between (healthcare) institutions, as organizations formed by the people bringing in their individual contributions and needs on one hand, and social preferences which determine, through a process of political competition, if a healthcare service has a status of public goods on the other hand). One of the solutions is that management, besides actions on solving problems, should create an adequate ambiance for achieving the purpose of management. In accordance with the above, the author's believes that a well structures management of production of healthcare goods in regime of the public service should contain the following elements: (1) Efficient planning and decision making, (2) Good organization, (3) Good motivation of employees, (4) Efficient control of the work process and (5) Development of positive culture and image in public. Let us see what should be scientifically recommended contents of those elements in structuring a public healthcare system as a public service.

Planning means matching the resources (material, financial, human, time and so on) which ensures: (1) Desired (optimal) efficiency which is in our case measured by realization of the scope and quality of healthcare services within the demanded dynamics and (2) Effectiveness in using limited resources, and they are in the first place, prices of healthcare services and the degree of engagement of public finances for participation in expenditures of their production and expended reproduction. Planning is in its essence an attempt to introduce determinism in a development process (healthcare system in this case – author's remark). However, as it is never possible to have access to all data which can influence the realization of the set plan, its realization has elements of a chaos. In this context, decision making can be observed in two ways. According to the classical approach, decision making is a choice between in

advance known and rival planned projected alternatives, and at that point an issue is opened, of course, who makes the decision on which of the alternatives is going to be selected. However, today in the practice of management of healthcare services production, another approach should have priority, and that priority should be analysis of decision making as a process of creation of solution to the problem. According to this concept, planning is seen above all as an attempt to set a goal to which our efforts will be directed, and which has both the past and the present as a starting point. However, interpretation of the past and present is burdened by subjectivity and can be interpreted in different ways, that is to say, it is relative. In that sense, planned setting of each goal must be taken as fluid, and the path towards its realization as a process subject to corrections in which determinism and stochastic are interwoven.

Organization of production of healthcare services in regime of the public service is analyzed in this paper, first of all, in a context of a phenomenon that the organizational structure which is formed with an intention to serve in realization of a strategy of healthcare, always stays away more or less from a normative regulation and starts producing its own strategy. This phenomenon is a result of the fact that in production of all public goods, including healthcare services, only two generic organizations are used: (1) Voluntarism bureaucratic organization and (2) Professional bureaucratic organization. Both these organizational structures are marked by hierarchy as result of work division and the need for their coordination, but also behavior in accordance with the axioms of so-called bureaucracy of economy, according to which it acts as organizational structure, which: (1) Obtains income from sources which are in no way connected with the sale of results of their activity, (2) Acts as a maximize of the state budget and (3) Tends to make money by using its position and role in the process of realization of functions of production healthcare services. In this context it is essential to keep in mind that it is impossible to imagine and realize perfect health institutions. Therefore it is necessary to reduce the number of hierarchy levels in order to minimize those phenomena, but also develop a new configuration of organizations for production of healthcare services, founded on so-called missionary organizational structure, whose main point is, in the first place, in the phenomena of culture development and adequate image.

Good motivation of employees in process of public goods production is connected by various authors, first of all, for its management. In accordance with mostly noncommercial features of public goods production, a concept “new public management” has been developed, meaning a mixture made from theoretical achievements of constitutional economy and usage of theory and practice of creating conditions for rise of motivation. Its basic characteristics are: (1) Introduction of a principle of contract management in practice of management, (2) Application of marketing mechanism in public sector and (3) Making a relation between employees' salaries with results of their work and

business. However, in case of healthcare services production, the issue of employees' motivation, medical staff in particular, must be brought onto the same level, if realistic advancement of their efficiency is desired. There are no ready-made recipes for solving this problem, but it is in relying of the environment that each healthcare institution should look for answers to the following questions: (1) "What is the main purpose of management of production of healthcare services in regime of the public service?" and (2) "What does success in actual contents of managing production of healthcare services depend on in order to advance efficiency?".

Control should ensure that achievement of aims, tasks, decisions etc are measured. The purpose of control is to find out what stimulates and what limits realization of set norms in order to make corrections in case it is needed – so that they would be realized, or, if it is necessary and acceptable, changes in their contents made. By that we come to one of the most controversy topics in management of production of healthcare services in regime of the public service. Norms for evaluation of success of their production depend, above all, on the relation of power among the leading socio-economic groups. According to that, assessing of success in healthcare services production is most of all a subjective and comparative procedure. Subjectivity of assessment comes from the fact that any of the marks can be rejected, if the norm it is based on is given up. The norms can be posted also in form of an ideal standard (based on an optimal theoretical calculation) or on the basis of a fixed empirically established alternative. On the other hand, application of the concept of total quality and orientation towards meeting the needs of patients and other users, in case of adequate implementation, they provide a more objective and active way for turning the control results into a required managerial or other action.

Culture of an organization is connected, first of all, for the contents of the strategy and policy of structuring of organization of healthcare services production. These figures can be in various relations – from agreement to antagonism, when functions of production of healthcare services are organized with the help of corruption, threats, and other socially unacceptable instruments. That is why forming of the culture of an organization must be the basic infrastructure of management of production of healthcare services in regime of the public service. In accordance with that, the culture of an organization should include: (1) A way of communication with the outer environment, especially patients and other users, (2) Ways of communication with the center or commanding body, (3) Level of knowledge and expertise of the employees and the attitude towards patients and other users, (4) The main symbols. The measure of success of the communication with the environment and the center or the commanding body is the image, that is the picture or perception the public has about the concrete organization for production of healthcare services.

At the end, it is important to present the circumstances in which it is very difficult to ensure in wider scope conditions for satisfactory management in production of healthcare services in regime of the public service. From the point of the goal of this paper, the following factors should be taken out: (1) Social-economic environment in which the following elements dominate: subjectively discount rates of makers of central managerial decisions, a short time horizon of decision making and the evaluation system of success which stimulates deceit or fraud, (2) Absence of altruism and antagonistic relation between the cultural values and ethical norms of the economic-political elite and the real social-economic reality in which the majority of population live and (3) Domination of interest of the distribution – oriented coalitions in formation of the structure of public income and expenses. Thereby we enter in the domain of the problem of institutional non-regularity, as the key factor for (in) efficiency of the healthcare system.

4. WHAT IS ESSENCE OF THE INSTITUTIONALLY NON-REGULATED ENVIRONMENT IN SERBIA?

In order to precisely assess the influence of the (current) institutional non-regulated environment on the structural adjustment of the healthcare system, it is necessary to understand the basic social – economic challenges which its functioning in Serbia has to cope with. They are: (1) Changes in demographic structure of population, which have caused certain movements in the structure and scope of individual and public expenditure and demand. A stressed tendency of aging of the population has as consequence a dynamic increase of demand for specific goods in the health and social care, which cannot be distinctly and precisely distinguished between those two sectors; (2) Changes in the pattern of living and consuming, a bigger stress is put on the issue of quality and contents of healthcare services in accordance with specific needs of individuals and their possibilities of individual participation, so the communication, in the sense of recognizing the real needs and possibilities of an individual and specific social-economic groups has become one of the key factors for efficient production of heath services; (3) Deregulation has removed administrative barriers for entrance of the private sector into the system of healthcare and opened space for partnership of the public and private sector, as well as for increase of personal participation in financing the costs of production and extended reproduction; (4) Rising innovational and software contents, as well as the problem of complex connection between causes of bad healthcare condition due to no synchronicity between new healthcare needs and challenges and public and market regulation of healthcare, educational and social sphere are in great extent narrowed the possibility to provide healthcare services on the principle “equal rights for all”; (5) Strict functional and territorial division of work in production of healthcare services is replaced by

their integration and specific forms of horizontal and vertical decentralization; (6) Great social-economic changes, chaos and absence of ethical norms have opened space for expansion of "shadow" economy, corruption and various misuses and deceits; (7) In order to respond to the challenges from (1) to (6), organization and management of the institutions of public care, modeled for long ruling economy and uniform contents of corresponding healthcare service, should be replaced by organization and management for the economy of flexibility, scope, time and innovation. Because of that, the barriers between certain functions of strongly structured organizations of healthcare have become less and less sharp and clear, so that creative way of performing work and introduction of multidisciplinary connections with educational and social sphere become basic criteria for measuring efficiency, and development of strategic, technological and other alliances on local, sub-regional and regional level on foundations of cooperation of public and private sector has become a necessity.

Since a reform creates something new, (in this case a change of the healthcare system with the aim to adjust itself to the demands stated earlier), a certain wider social-economic and technical ideal should be established as a system we aim at and which should represent a focal point of the goals, On the other hand, achievable reform activities should be performed by competent expert services on a principle of projecting technically feasible alternatives. From the point of view of other participants in the healthcare system, their initiatives become object of expert study and evaluation only after they have been totally defined. However, it is not the case with ideally established goals of a reform. First, each ideal goal is defined neither entirely precisely, nor clearly. Second, each decision maker defines for himself ideal definition of contents of goals of a reform, meaning that they contain many meanings. In fact, by this we come to the essence of the decision making issue. Reforms are the problem with more criteria, so the choice (decision making) is comparison of real alternatives and the ideal, that is, between something that is achievable at present and possibilities which are only vaguely achievable, but are very much desirable for decision makers. Although it is probable that, due to a specific situation in Serbia, not a single existing model of a healthcare system can be fully realized, we believe that some of the existing models from the European territory should be accepted as an ideal and as such taken as a starting point (of reforms). At the same time we must be aware that the goals established in that way will be realized only partially, never in total extent, and that there is a permanent threat of cosmetic actions, which do not touch actual essence of functioning of the system of healthcare.

In this context it is possible to make a comparison between ideally structural models of regulation of institutional infrastructure necessary for efficient functioning of the system of healthcare and real current situation in Serbia (TABLE 1). The presented taxonomy resulting from an analysis of the official

concept of Serbia's preparations for European integration [13, 14] shows that the problem of the reform of the healthcare system is possible to be solved only within a total social – economic reform in the sense of building democratic society in which citizens are free, competent and responsible. In the presented context a question is asked: "What should be a starting point in determining the role of the state in the sphere of healthcare in Serbia?".

Table 1 Ideal versus real institutional non-regulated environment

Ideal model of regularity of institutional infrastructure:	**Existing state of regularity of institutional infrastructure in Serbia:**
Legal state based on respect of human, social and economic freedoms	Undeveloped legal state
Clear political and economic concept of development of modern market economy based on the concept of economic freedoms and creation of real conditions for everyone who wishes and can work to get a job with income sufficient for at least physical reproduction	Unclear political and economic concept loaded by interest of broker-oriented entrepreneurship elite and numerous distribution-oriented coalitions
Clear political, economic, social and administrative concept of the role of the state in the sphere of production of public goods based on the general consensus of all relevant social, economic and political options and confirmed through all-inclusive citizens' opinion on its contents, and goals, on basis of precise, clear and transparent standards, defined on basis of the concept: "minimal rights for all, the rest according to the needs and abilities of an individual to finance them"	Great gap between by norms regulated and existing rights to usage of public goods Irregular relations between public and private sector in production of public goods Significant presence of "shadow" economy element, corruption, misuse and fraud in public sector Domination of monopoly interest and distribution- oriented coalitions on the bidders' side
Clear political and administrative concept of horizontal and vertical decentralization of resources for production of public goods in state (public) ownership regime, adapted to specific regional, sub regional, and local healthcare, social, cultural and ethnical characteristics	Unevenly distributed production of public goods in the regions, sub regional and local units
Efficient and professional public administration system and services management, oriented to users (individuals, their families and specific social – economic groups)	Politics driven, inefficient and bureaucratic system of public administration and services management

[1] In the presented methodological approach – the notion of institutional infrastructure is defined as a collection of active elements of the outer environment in which subjects of the healthcare system act.

5. TOTAL REINGENEERING OF THE PUBLIC HEALTHCARE SYSTEM IN SERBIA

5.1. To define a new contens of the paradigm "equity" as the key for decided of problem of the institutional non-regularity in Serbia

In the presented contents of the institutional non-regularity shows that in order to increase effectiveness of the healthcare system it is necessary to make relatively radical changes in the power structure and society without delay. The key of those changes is establishing a consensus between the political and economic elite and the majority of population of Serbia about the role of the state in the sphere of healthcare. Potential interest of the political and economic elite is, by increase of efficiency of healthcare, to ensure political and economic stability needed for their legal stratification. On the other hand, interest of the majority of the population of Serbia is, in the given material context, to ensure the best possible conditions for healthcare. However, the real situation shows that within the economic and political elite, those who do not see their interest in establishing a precise and transparent concept of reform of the healthcare system in Serbia prevail. Without going deeper at this point in the structure of interest standing behind this constellation, a hypothesis can be made that for realization of a successful reform of the healthcare system in Serbia, a total reengineering - an ambitious, radical, quality and innovation based methodology is necessary, which would, on the basis of a development vision, determine the direction of institutional changes and various reformatory actions with an aim to set up a radically new public healthcare system – oriented towards prevention and maintenance of healthcare capabilities (of the total national population) based on the development of adequate life and work, while treatment of diseases asking for sophisticated and expensive technologies should be left to the private sector with personal participation. The key of the implementation is in a new definition of contents of the paradigm "Equity". A paradigm that public healthcare insurance should provide the best healthcare is false and financially unsustainable even for societies much wealthier than Serbia. On the other hand, righteousness means a need to provide healthcare in the framework of public, transparent and precise minimal standards for all (meaning that nobody will die because he is not insured, because he has not money for cure or, simply, as often happens in Serbia, because he do not know relevant people) In this sense, according to the opinion of the author's, in order to create conditions for liberal structure of the contents of division of expenses of production of healthcare services between the public and private sector, and which would be accepted by the population as a legal replacement for their existence according to the concept of the state of prosperity, it is necessary to substitute the factor of institutional non-regularity – by a more intelligent

action of the public factor in function of advancement of micro efficiency in their production.
At first sight, the idea of total reengineering of the healthcare system in Serbia and the policy for its operationalization may seem pretentious. However, the (cruel) reality shows that the problems in the healthcare system are consequences of the slave like following the old ideas and attitudes in the public sector and society in general, in the managing the state, political work and everyday public and business management. In that sense, lessons can be learned from the past. In the last two centuries in Serbia, radical changes of the actors in the political power, that were nor followed by freedom of individual creativity, has already several time proved to be nonproductive, because everything else stayed the same – work methods, attitudes, values and beliefs. On the contrary, each liberation in the field of creativity and initiative, even with no big political changes, yielded a dynamic modernization. That is why Serbia needs a total reengineering as an ambitious, radical, quality and innovations based methodology, which will on the basis of a vision of development as well as the increase of the degree of creative freedom determine the direction of the institutional changes, and a more productive concept of goals and actions of the adequate policy, which would wake up the healthcare system from the dead, on the basis of a platform of a macro environment that guarantees equal chances for all as well as consistent strategy of integration of Serbia in the desired European environment. In that sense, we are going to define more closely what of the reengineering techniques should be used in the reform of the healthcare system in Serbia. In this context, he needs contents of the basic elements of the reengineering.

5.2. Reengineering – some basic concepts

Generally speaking, the term reengineering stands for such actions in the organization and design of the system (in our case in the healthcare system in Serbia, and in the policy for its operationalization) which result in essential and quality changes in its functioning. In that sense, reengineering should consist of actions towards improvement of the basic processes, as well as an attempt to adequately define real needs for engaging leading staff and other employees in realization of the process on basis of the criteria of maximal satisfaction of the users of a certain healthcare service. So, the basic elements of reengineering are the processes and the employees who are required to identify easily and quickly introduced changes that will enable them and the entire service or function to be more efficient. Three basic factors are essential for a successful reengineering: staff, planning and results.
Success of each reform depends on cadre potential. Systems, tools, techniques and standards of organization of a system of healthcare, that is, forming contents of goals and actions of a healthcare policy, for example according to

the criteria of the European Union, can be very useful, but only actors of public regulation and management are capable of their implementation and form an adequate institution, that is to say, carry out efficient realization of the set goals (of healthcare policy). Thereby the importance of two factors is put forth.

The first one is that processes in a public institution are as good as their actors (implementers) with the least enthusiasm in them. Well, let us see what potentials are at our disposal in this sphere. For realization of changes a fresh motivation is necessary. The radical change of the economy system and two essential changes of actors on the political scene of Serbia in the last seventeen years have created excellent predispositions for development of new and more efficient methods of public regulation, and thereby opening of space for reengineering of the system of healthcare and policy for its operationalization. However, it seems that those predispositions had been used up before essential changes in the model of functioning of national capitalism were made, so others should bee looked for. One of potential areas for development of fresh motivation for changes is, indeed, the program of integration of Serbia in the European integration flows. But, certain precaution is needed here also. Optimism about quick integration has been, partially though and influenced by a foreign factor, replaced by (more realistic) views about a long and hard way which the society and economy of Serbia must pass in order to be integrated into the European Union. In accordance with that, what Serbia really needs is a clear, public and precise determination for integration into European flows that should be the foundation for creation and implementation of exact, transparent, precise, public norms for measuring the effectiveness of certain political options, institutional adjustment and public regulation, and only after their promotion and establishing a social consensus for their implementation, the dynamics of realization and deadlines can be taken into consideration.

Another, a more important factor is the fact that for opening a space for changes, there must be a wish for learning, meaning a positive attitude to adequate implementation of other people's experiences, interest in foreign languages and cultures of life and work, as well as a wish to learn from the best foreign examples, all accompanied by a good information flow. Activation of a wish for learning depends on two factors – systems of continual education and a wide spread culture of management. As a matter of fact, current situation in these two areas suggests being cautious when determining a real wish for learning in function of radical social–economic changes. It is certain that Serbia has a quantum of cadres with adequate of education and certain managerial abilities, however, their number is insufficient to initiate a mass wish for learning in accordance with the above stated motto – saying that success of each reform change depends on those who have least enthusiasm.

In the beginning of the eighties of the last century macro and micro-planning in Serbia became a ritual with no substance, and practically it was forgotten at the beginning of restoration of capitalism. It is clear that modern planning has

nothing in common with total or self management style of planning from an earlier period. The character of this paper requires us to interpret only two models of planning that should find their place in the system of healthcare in Serbia. Since the beginning of 2001, a program of revitalization of the public healthcare system in Serbia has been going on partially financed by donations from abroad and long term credits. However, six year later its expenditures and results are not clear to the users and population. It is evident that the whole program was approached without public, precise and transparent concept and without planning by which key health, social, personnel and technical problems and time frame dynamics for its implementation would be analyzed. Looking from a time distance it is clear that those actions should not have been undertaken without adequate plans. On the other hand, planning of the reforms of the healthcare system and the healthcare policy demands certain space in which institutional foundation, practice of public regulation and behavior of subjects in the healthcare system could develop, change and adjust both to each other and to changeable circumstances. It was the talent for improvisation, as majority of actors learned to use the moment and employ creative improvisation in the chronically undeveloped infrastructure and poor normative and organizational institutional frame of life and work, and those are the key values of reengineering.

In order to decide in favor of radical reforms of the healthcare system, some results must be achieved as soon as possible. Actors of the political and economic changes of 2000 were aware of that, so some results soon became visible – material situation of the staff in the public system of healthcare improved, supply of medicines, sanitary and other materials also became better, also hygiene, and food in hospitals, waiting time for operations became shorter, and revitalization of the existing equipment and procurement of the new one have improved the conditions for timely diagnostics of complex illnesses. However, it soon became cleat that it was not enough to keep the reform enthusiasm up neither in the staff nor in users. A rational explanation for quick lessening of (the total) enthusiasm for reform should be sought in a fact that the majority of population of Serbia very soon found out that they had lost much more than they gained by the reform actions that had taken place. In fact, the increase of unemployment and social instability and thereby automatic limitation of access to healthcare services as well as absence of activates aimed at elimination of corruption and illegal mixture of public and private factor in the healthcare system influenced the change of the attitude towards reforms.

5.3. What is essence of total reengineering in this case?

In the presented taxonomy, reengineering should be treated as a technique whose aim is to improve the processes with bad outcome by the principle step by step, in order to make the advancement and results visible almost on daily

basis. No doubt that reengineering must rely on radical visions and be a component of big, long term projects, but its application should ensure that continual improvements of smaller scope are achieved. Thereby we come to the very essence of reengineering – it is not the technique that ensures radical changes in a long term, but a technique that seeks radically new solutions in a short term, which cannot be solved by application of some of the known techniques. The main idea is to direct the whole system to the inner restructuring by initiating macro projects for verification of the public healthcare system according to the standard of quality management according to ISO 9000:2000. This idea is based on the standpoint that restructuring of the public healthcare system must be initiated from "bottom to the top" and not from "top to the bottom" as it has been in the current reform. In this context the project of reengineering is divided into four levels:

The first, initial and the lowest level is, of course, ***business reengineering,*** whose activities are located on the micro level and oriented towards rationalization and redesigning of business and similar processes.

The second level is ***managerial reengineering*** which means introduction of new approaches in management of business and other processes.

The third level is ***mental*** or ***educational reengineering*** whose basic function is education and change of attitudes of participants in any business or similar process.

On the fourth, the highest level is the ***total reengineering***, as a synthesis of all previous ones, which enables functioning of the whole, (in our case it is the system of healthcare and policy for its operationalization)

In order to realize this project, it is necessary to define a vision, what is desired to be achieved by reengineering in form of a clear, precise and public list of wishes and goals for whose realization the majority of participants do their best, as much as they can.

5.4. Reengineering and vision of development of the healtcare system in Serbia

The vision naturally must be based on solutions of the problems of development of the healthcare system in Serbia copes with. Here are the most important ones: (1) How to create conditions to stop the process of deterioration of healthcare status of the population? (2) How to ensure the balance in public income and expenditure for healthcare within so-called "Bismarck model" and make redistribution of the public expenditure funds for the benefit of healthcare in the environment with strong interior and exterior pressures for lesser participation of the state in redistribution of the gross social product? (3) How to continue the process of revitalization and modernization of the healthcare system in a more effective way? (4) How to start up and realize a process of partial privatization and transformation of ownership in order to use up one part

of the existing resources? (5) How to improve management and rational functioning of the public system of healthcare? (6) How to include personal funds of the population into the public healthcare system in a regular way? (7) How to realize the partnership between the public and private sector in the framework of the system of primary, secondary and tertiary healthcare? (8) How to attract fresh capital and know how for a partial privatization of the development of the healthcare system in the domain of high technologies? (9) How to get and use international help? (10) How to make a rationalization and improvement of the cadre education system (for example, Serbian's system of high education is too big in relation to its needs) – those are only a few of the urgent issues of the current (Serbian) reality.

If there was a clear and precise (developmental) vision of the healthcare system in Serbia, then determining the structure of actions in reengineering on each of the said levels would be only a matter of technique. In that case, for example, partial transformation of ownership would not be a goal per se, but a means of revitalization, modernization and development of a corresponding component of the healthcare system. At the same time we must be aware that a privatization, carried out in various ways, automatically leads to a concrete goal (for example, although privatization of the healthcare system in Serbia in the previous period was not clearly, precisely and transparently defined in social and economic sense, in practice it was going on in a form of a wild privatization of public resources, work on a "black market", corruption, irregular public – private partnership, so that the final result it had the consequence that the basic capacities and employment in the public sector formally more or less preserved, of course, the price being (real) perception of users that this kind of system is unnecessary , but also a negative perception about existence of private sector). The situation with other mentioned problems is similar. The structure of actions in reengineering for overcoming each of them can be labeled as good, bad, desirable, and unacceptable, only if it is measured in relation with contribution to the realization of the goals contained in the (development) vision. Well, what is really the goal of the transition of the healthcare system in Serbia?

This question has been waiting for an answer for the last seventeen years. In the meantime the initial premises about transition as a way towards an "ideal" vision of capitalism adapted to poor circumstances (illustrated by the initial paradigm "Serbia as Sweden") has been transformed into a new one "Serbia in the European Union". However, this one, like the initial one, in its essence was fruitless and idle. European integration for Serbia is, above all, a goal, not the means for its realization. What Serbia really needs is finding the answers to the questions in what kind of society, in respect of economic and social issues, shall we live in ten or twenty years and how shall we survive a year after a year until the minimal economic and social conditions are created before we reach the goal. As the (development) vision is missing, many elements of political, economy and social reality seem elemental, poorly designed, wrong, premature.

Means are proclaimed goals, and the goals means. Only that which in a certain moment suits the dominant political and/or economic option, but not the entire nation – is good. It seems that we are not able to determine (development) vision, because too much energy is being used for maintaining or conquering pure power and the tantieme coming from it. And its basic result is general fall of motivation, apathy, fatalism, a dynamic "brain drainage" and young population, demographic regression, and turning Serbia in to a country of hopeless old people. In this context another question can be asked - if the healthcare system is actor or victim of the current state. However, in harmony with ahead to lead contents of paradigm "Equity", to attempt to explain of the methodolgy of theirs implementation.

5.5. As one should a technique of the reengineering in to exceed of crisis of the healthcare system in Serbia?

However, in accordance with the above stated contents of the paradigm "Equity", we are going to try to explain methodology of its application. The presented methodology is not only an attempt of implementation of its technology, but it also relies on comprehensive analysis of historical experience, where explicit application of this technique, like in the developed European environment, on the basis of individual initiative and self learning, radical reforms of the system of healthcare have been realized even without a precise social vision. Actors of reengineering are divided into three basic groups according to their functions:

1. ***Management Committee*** - which should define the contents of the reengineering strategy and ensure supervision in realization. The main tasks of the Management Committee are: defining concrete processes which should be radically redesigned, starting the initiative for redesigning and provide support for redesigning.

2. ***Reengineering team*** which should consist of at least five, maximum ten persons with a mandate to realize reengineering of a certain process. The main task of the team is to define the meanings of the managing rules that will lead the process in a desired way. In order to avoid subjectivity in defining the rules, its output should be placed in the center of the process by defining concrete user (for example, procure preventive healthcare for children up to 6 years of age) and a degree of adequacy and the quality level of the health services that should be provided with detailed procedures about what activities should be undertaken further on, with corresponding pricelist and dynamics of settling public obligations. Adequacy of the contents and the quality level should be determined on the basis of good practice in the world and attempts to build own standards of functioning adapted to the economic abilities of users. In any case,

the process which is to be redesigned must be observed through the eyes of a user of a certain healthcare service. That is why members of the team for realization of the reengineering should be selected on the criterion: two to three members from within (from the process which is subject of redesigning) on one exterior member - in order to ensure objectivity and different views on the process which is being redesigned. The team for reengineering should manage itself and have independence in its work, while its work should be based on free communication, consensus and stimulation of innovative ways. In any case, the leader of the reengineering team should behave like the first among equals in accordance with premises that policy must be in slave of expertise and knowledge and not vice versa, as our current practice is.

3. ***Leader of reengineering*** is coordinator of the process being redesigned. Leader of the reengineering team can be but need not be leader of the reengineering of the concrete process. In fact, practice has proved that it is best to select natural leaders for leaders of reengineering who have already proved their qualities within the reengineering team because they are usually able to motivate other actors to act for change.

In this sense, according to the author's opinion, there are three elementary directions of the reform of functions of public factor in strategic management of the business and development of healthcare: (1) decentralization and deconcentration of functions of public administration in charge of realization of regulation of behavior of public and commercial organizations for production of healthcare services trying to get closer to users and ensure flexibility in work. The main challenge is how to organize central coordination and work control without violating work freedom of lower organization levels of power; (2) Introducing a system of continual advancement of quality of healthcare services in function of satisfying differentiated needs of users – taking over business techniques and orientation towards individual expectations and additional resources for their realization; (3) Advancement of regulative mechanisms – improvement of quality of legal regulation of the public and private sector, reduction of expenses of implementation and advancement of the monitoring and control system – by taking over adequate business techniques.

The following instruments should be used for realization: (1) Human resources management (based on scientifically established programs of cadre selection, introducing them to work, education, development of the cadres and improvement of motivation; (2) Modern information and telecommunication technologies – in order to provide better quality, faster access to (public) healthcare services as well as control of process of their reproduction; (3) Market mechanism – characteristic examples: (a) formation of internal markets (for example operationalization of the right of users to choose doctor, a group of doctors and healthcare organizations for certain services – which would introduce a direct competition among doctors and hospitals financed from

public funds, (b) existence of partnership between the public and private sector in providing healthcare services and (c) total privatization of providing some healthcare services.

5.7. Critical retrospective of the applied methodology for reingeneering of the public healthcare system in Serbia

The methodology for reingeneering of the public healthcare system in Serbia to base an application of the three paradigms: "Equity", "Learning" and "The intelligent and creative macro and micro-management as substitution for the institutionally non-regulated environment?", an one hand, and on of the multi-criterion compromise between of (science) concept for macro and micromanagement of the public healthcare system and the real goals and mechanisms of public policy, an other hand. The greates advantages of possible application of suggested methodology are indirect because of the variety of corrective actions and a wide circle of participiants, with their partial wiews and truths, is incorporated into the system oriented observation of "What is the best solution of the observed problematic situation". The real world in presented observation is problematic and process and methodology for improve the performances of public healthcare system is systematic. That approach is based on appropriate type of political and social culture and the principle of partitipation and proffesional management, and wider partitipation of all those involved in the problem. Applied methodology can be defined as mostly idealistic because it inputs the main initiative force to the ideas and coordination. This is the area in which we should search for the greatest limitations in this methodology. Altrough, the presented model for public regulation, to base on certain type of the partitipation culture and European norms for cooperation, healthcare and public regulation. Due to neglecting of the different subcultures and the difficulty of their integration, system of consultation and compact as a system for future macro and micro-menagement was soon replaced with the system of force. In this context, the issue of efficiency improvement in the production of public healthcare goods in Serbia remains open, and primarily depends on changes in the perception of the political elite and medical profession and the progress in the creation of concept of their social responsibility.

6. CONCLUSIONS

The public healthcare system of Serbia since the beginning of the eighties of the last century, when more or less unnoticed decline of socialism started, has been coping with great problems. They became almost impossible to solve as the time went on, due to slave like clinging to the old ideas and approaches to the goals, organization and management of state and public sector, political work

and everyday public and business management. The change of existing ideology, that took place at the beginning of the nineties of the last century, and restoration of capitalism has proved itself to be nonproductive, because everything else stayed the same – work methods, approaches, values and attitudes. Its essential characteristic is institutional non-regularity – as consequence of unclear, foggy and manipulated transition. Reflections on the public healthcare system are multifold. First, space was opened for wild privatization of a certain part of public healthcare system and development of irregular system of partnership between the public and private sector in production of healthcare services. Second, favorable conditions were created for complex distribution – oriented coalition, which, in the framework of historical heritage, very skillfully using its political and any other influence, tries to maintain such situation and stop necessary structural changes in the public system of healthcare and regular development of the private sector. Third, in the limits of misty and nontransparent transition a strange mixture of quasi public, quasi market and administrative regulation mechanism has occurred– which has made the need for existence of a public healthcare system practically purposeless. That is why solving the problem of the healthcare system crisis in Serbia is, above all, a matter of genuine understanding of the problem, and only after that creation of certain solution.

In this paper tends to show that a deterministic concept, in which the issue of financing the system of healthcare is the elementary focus of public action, cannot be a key foundation for reforms. Functioning of the healthcare system as a big social-economic system is at the same time predictable and unpredictable, stochastic and determinable. In this context, the existential and development problems of the healthcare system can be dealt with only by all-inclusive analysis of all available solutions and a careful choice of the optimal one. In that sense, Serbia needs a total reengineering – an ambitious, radical, quality and on innovations based methodology, which would, on basis of a development vision, determine the direction of institutional changes and various reform actions in order to build a radically new public healthcare system – oriented towards prevention and maintenance of healthcare capability (of the entire national population) on basis of development of adequate system of life and work, while treatment of majority of illnesses, especially those for which sophisticated and expensive technologies are used, should be left to the private sector on basis of personal participation. The key of implementation is, in the author's opinion, in a new definition of contents of the paradigm “Equity”.

A paradigm that public healthcare insurance should provide best healthcare is false and financially no sustainable even for societies much wealthier than Serbia. On the other hand, righteousness means a need to provide healthcare in the framework of public, transparent and precise minimal norms for all (meaning that nobody will die because he is not insured, because he has not money for cure or, simply, as often happens in Serbia, because he do not know

relevant people). In accordance with that, the presented concept of a total reengineering of the healthcare system in circumstances of institutional irregulation, is based on active approach in which the public factor, in accordance with basic division of responsibilities in administrative, hierarchical environment, should find out the right solutions for: (1) improvement of the external and internal system of management and control, (2) restructuring of the inner organizational structure, (3) improvement of quality of labor, (4) withdrawing those activities which can be organized on commercial basis and (5) formation of a needed capital base for revitalization and modernization – so that business will be rationalized, and the quality of healthcare services risen on a socially acceptable level. This gives a high level of subjectivity to the whole process of increasing the efficiency of the healthcare system. In this context, the problem of improvement of efficiency of public healthcare system in Serbia stays open and will depend, above all, on changes in perception of the political elite and medical profession and advancement in creating a concept of their social responsibility to the (minimal) European norms for cooperation, healthcare and public regulation.

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Health, Education, and Welfare

LIFELONG E-LEARNING IN JUDICIAL SECTOR IN BOSNIA AND HERCEGOVINA

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Abstract

The judicial reform in Bosnia and Herzegovina (BiH) was launched in 2000, by the adoption of the Law on Courts and Judicial Service, whereby High Judicial and Prosecutorial Councils (HJPC) were established in each entity, for the first time, as completely new bodies mainly composed of judicial representatives in charge of proposing the appointments and dismissals of the judges and prosecutors to the parliaments. Law on HJPC of BiH regulates that judges and prosecutors shall be "individuals possessing integrity, high moral standing, and demonstrated professional ability with the appropriate training and qualifications". HJPC anticipates professional advancement of the judges and prosecutors and advises the entity Judicial and Prosecutorial Training Centers (JPTC) and Judicial Commission of Brčko District of BiH on relevant programs for professional training of judges and prosecutors. JPTC educate a large number of judges and prosecutors in BiH whose offices are located all over the country, which requires developing an e-learning environment.
In this paper we shall present the "Training of the trainer" JPTC educational program and provide important elements identified as critical success factors for e-learning and e-content creation for on-line education of judges and prosecutors in BiH.

JEL classification: K0, H75

Keywords: Innovation, lifelong education, e-learning, judicial reform

1. LIFELONG EDUCATION AND E-LEARNING

Knowledge we acquire over the years lasts increasingly less, while the number of people who require new knowledge increases. Educated people represent a source of economic power of the country and its basic competitive advantage. Demands for flexibility in learning present new challenges for the institutions, and in terms of designing new approaches to education. The natural learning environment for professional development will be based on the information and communication technologies (ICT).

Fifty years ago, education prepared individuals for life-long careers in a particular field. Formal education shaped the person, and the opportunity. It is now life-long learning that creates opportunities. (Siemens, 2006) Lifelong learning refers to a society in which learning possibilities exist for those who want to learn after graduation. (Aspin & Chapman, 2007) Learning is not restricted to the classroom and to formal learning inside learning institutions; it is an activity which happens throughout life, at work, play and home. In the modern knowledge-intensive era, lifelong competence development has become a major challenge to educational systems that have not changed their educational policies and pedagogical models to support life-long learning. (Klamma et al, 2007)

There is an increasing demand for new approaches towards fostering life-long learning perspectives through ICT. ICT application in education brings about significant changes to the process of learning and teaching. ICT provides for a much more flexible approach, enabling thus all those who desire to acquire knowledge to do it at a time most suitable for them. This is especially important for the increasingly large segment of people employed in companies or government institutions who wish to get training. In this light, Siemens defines e-learning as a marriage of technology and education, and most often, the instructional designer's greatest role is that of “bridging” concepts between the two worlds. (Siemens, 2002)

Blended learning can be described as a learning program where more than one delivery mode is being used with the objective of optimizing the learning outcome and cost of program delivery. Blended learning focuses on optimizing achievement of learning objectives by applying the “right” learning technologies to match the “right” personal learning style to transfer the “right” skills to the “right” person at the “right” time. (Singh & Reed, 2001) Creating a blended learning (an appropriate mix of face-to-face trainings and e-learning experience) strategy is an evolutionary process. It is necessary to explore the capabilities of the team, organization’s infrastructure and learners’ receptiveness to new learning formats. For many, the first stage in their blended learning program initiative is to supplement their current programs, either traditional classroom or self-paced content libraries, with live e-learning activities (coaching, virtual classrooms or workshops) to extend the learning process and better integrate it with the work environment.

Numerous challenges that countries, organizations and individuals face in the modern world, as well as the extreme significance of education and various ways of acquiring knowledge, skill and necessary qualifications, impose an obvious and urgent need for critical analysis and examination of systems of education present in the most part of the world, in the sense of asking and searching for answers to the following questions:

- How is the link between the education sector and other sectors viewed and realized in the sense of satisfying its increasingly specific needs of training?
- How are content and methods of knowledge transfer realized?

To answer these questions, educational institutions will have to introduce major changes to the current methods and concepts of the education process. A constant demand is the one for continuous education of trainers themselves, in the sense of mastering modern technologies and methods of their application. Thus, trainers practically become living examples of what is referred to as lifelong learning. (Tatic & Kačapor, 2007) A significant change is evident in the working methods, abilities and roles of trainers. The new system brings radical changes to the role of the trainer, who transfers less information, but mediates in searching for information; who does not offer a complete picture of reality but, using active problem-solving and team work, encourages creating knowledge based on learners' own experience, so that they could comprehend and explain reality, in order to be more successful at work, and have a richer and fuller life as individuals and members of the community.

2. JUDICIAL SECTOR IN BIH

In transitional societies, such as Bosnia and Herzegovina, major reforms in the country impose great challenges on all judicial officers to improve their knowledge and be able to adjust to new demands of their profession. The judiciary in BiH has been profoundly reformed over the past years. Judicial reform started in 2000 with the enactment of the Law on Courts and Judicial Service, with which High Judicial and Prosecutorial Councils (HJPCs) were established in each entity. Those institutions were new to BiH, and predominantly comprised of judicial representatives. The establishment of HJPCs was a result of the attempt to reinforce the principle of separation of powers in a consistent manner. The Councils are independent, and they regulate numerous major activities of the judiciary. In terms of the judiciary, it was the principle of judicial independence that was seen as the basic and final goal of judicial reform. Maintaining independence of judiciary requires, above all, a separation of the judicial branch from other branches of the government. Selection of judges, their appointment, duration of their service and continuing training are significant factors in ensuring independent and impartial judiciary. (Sallivan Lagon, 1993)

Intensive reform began in the first half of 2002 and was conducted simultaneously in three major areas:

- reorganization of courts and prosecutors offices,
- legislative reform,
- appointment of judges and prosecutors.

2.1 . Necessity of Education in the Judicial Sector

Broad education of judicial officers is one of the prerequisites in achieving and maintaining the independence and impartiality of the judiciary, and a necessary requirement for an efficient judiciary in modern societies. The principle of judicial independence, in the organizational sense, is fully justified by the overall importance of the judicial function to the legal system and the society as a whole. Namely, in democratic societies the judiciary is considered as the "guarantee" of proper functioning of institutions, where courts protect basic social values, human rights and freedoms, and legitimacy. Still, within the separation of powers of the legislative, executive and judicial branches, it is necessary to provide for proper functioning of the judiciary, and to prevent unlawful judicial decisions from being made in consequence to the pressure by other branches, and for other reasons, such as an inadequate level of legal training. It is only competent and highly professional judiciary that can resist exerting their influence over the legislative and executive powers. (Transparency International, 2000)

The increasing speed of globalization and the multiplication and acceleration of changes in the society, also present in education, is another major reason that imposes the need for cooperation between international jurisdictions, and integration processes reflected in assembling different regional and international associations. It is also a fact that scientific and technological developments affect legislation, making it more complex (cloning, doing business electronically, human organ transplantations, etc.), but also affect the performance of judges and prosecutors, by imposing on them the obligation to enhance their knowledge and skills.

2.2 . Judical and Prosecutorial Training Centers (JPTC) in BiH

Having in mind Paragraph 2.3 of the European Chart on the Statute of Judges (1998), which states that "the statute ensures by means of appropriate training at the expense of the State, the preparation of the chosen candidates for the effective exercise of judicial duties. The authority referred to at paragraph 1.3 hereof, ensures the appropriateness of training programs and of the organization which implements them, in the light of the requirements of open-mindedness, competence and impartiality which are bound up with the exercise of judicial duties", in 2000 the High Representative imposed the Law on Judicial and Prosecutorial Training. The two Centers for Judicial and Prosecutorial Training (JPTCs), one in each Entity, were established in 2003. Since then, the JPTCs have focused their strategic and operational efforts on institutional capacity building and on responding to the most pressing educational needs resulting from recent legal and judicial reforms. The centers are shaped to provide

qualitative and standardized continuing and initial judicial and prosecutorial training, as a vital element of the ongoing judicial reform, as well as training in material and substantive law, ethical standards, latest scientific and professional developments in the field of law, judicial international practices and other fields (Law on HJPC, 2002). HJPC, in consultation with the Steering Boards, determines the minimum amount of training each judge and prosecutor must receive annually to satisfy this professional obligation (Law on JPTC, 2002). Trainings are compulsory and judges and prosecutors have to have four days of training during one year.

As we have mentioned previously, new scientific and technological developments oblige judges and prosecutors to enhance their knowledge and skills to be able to serve their duty in full capacity, and to better adapt to changes in society. JPTCs have recognised on-line training as an effective professional training tool for the future that involves lower costs and saves time. However, on-line training methodology is new in the BiH judicial professional environment. JPTCs have developed web sites that include training materials, information and forum discussion portfolios available to the trainees and trainers. In addition to that, HJPC is finalizing the establishment of an intranet to foster networking among judiciary.

During past years, JPTCs cooperated with many foreign agencies, such as the Council of Europe, the European Commission, the United Nations Development Program, the United States Agency for International Development's Rule of Law Program, the US Department of Justice's International Criminal Investigative Assistance Training Program, Canadian International Development Agency, the Swedish International Development Cooperation Agency, Crime, the German Foundation for International Legal Cooperation and others. One of the JPTCs international partners is the Canada-BiH Judicial Reform Project (JRP). It is the activities that the JRP supported in cooperation with the E-Net Center that this paper presents.

3. E-LEARNING COURSES FOR JPTC

The primary goal of this "Training of the trainer" program (ToT) was to develop the knowledge and skills of trainers in the area of design, development and successful implementation of e-learning courses. The courses for JPTC have been designed and delivered by the E-Net Center of the School of Economics and Business in Sarajevo in cooperation with the Canadian JRP.

The E-learning and Knowledge Network Program for Southeast Europe (E-Net) is a project implemented by the University of Alberta with the financial support of the Government of Canada provided through the Canadian International Development Agency (CIDA). E-Net Center activities are related to development and current reforms in Bosnia and Herzegovina through professional development programs and services that harness new technologies,

as well as interactive learning networks. The programs are custom-designed and focused on learner-centered pedagogical techniques that emphasize creative problem solving strategies. It supports these programs with a full range of learning technologies that include video-conferencing, multimedia, Learning Management Systems (LMS) such as Moodle and custom designed web portals. Through E-Net learner-centered and blended methodology for training, participants are exposed to an alternate way to develop their professional skills and knowledge.
ToT program was structured as a multi-phase program and consisted of the following activities:

- Needs analysis of the participants who were proposed by JPTC and who would play the role of e-trainers in the future,
- Designing programs and preparing materials in accordance with the needs of the participants,
- Setting up courseware tools – Moodle LMS on the server of the E-Net Center for the purpose of conducting seminars and enabling consultations upon completion of the program,
- Delivery of the first phase of the program in November 2007 and October 2008 – Basic course ”e-Learning Course Creation”, for 40 participants in total,
- Delivery of the second phase of the program in November 2008 – Advanced course “Advanced Topics in e-Learning Course Creation”, for 10 participants selected by JPTC from participants who were involved in the first phase,
- Evaluation of the program.

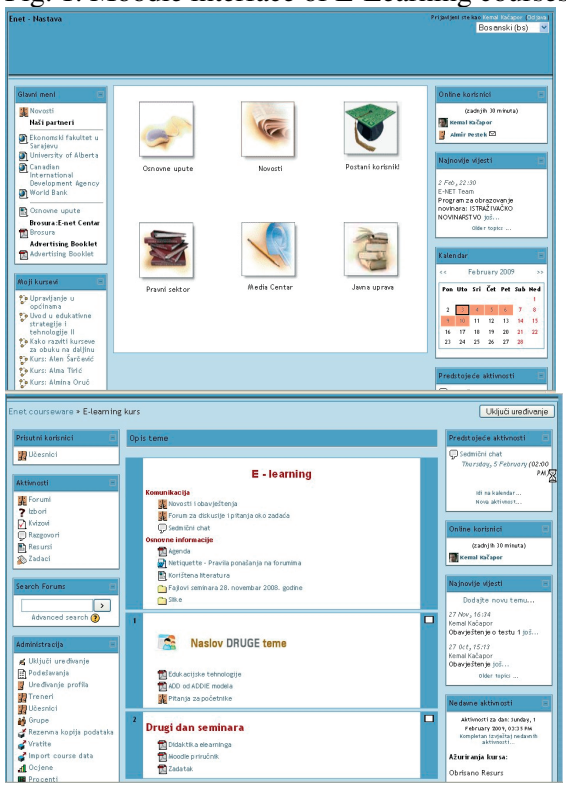
Particularly, the first phase “e-Learning Course Creation” consisted of:

- Delivering a two-day interactive and intensive face-to-face seminar with a comprehensive content. The main topics covered were:
    - Education technologies and methodologies,
    - ADDIE model of instructional design,
    - Introduction to Moodle LMS philosophy,
    - Basic teaching tools.
- Conducting an assignment for participants related to the development of an e-learning course. The completion of the assignment lasted one month after seminar completion.
- Coaching through on-line support, using chat, forum, e-mail and telephone.
- Monitoring of participants’ progress using Moodle server.

The second phase "Advanced Topics in e-Learning Course Creation" consisted of:

- Delivering a two-day face-to-face seminar designed to extend and enhance the skills of a Moodle course creator. The training agenda began where the basic training ended with a focus on some of the more complex tools and features of the Moodle LMS. The seminar also included discussion of key instructional design principles as they apply to the elements of Moodle course, including integration into online courses, efficient moderation of online discussions, using of wikis, databases, web design, etc.
- Conducting an assignment for participants related to development of an e-learning course. The completion of the assignment lasted one month after seminar completion.
- Coaching through on-line support, using chat, forum, e-mail and telephone.
- Monitoring of participants' progress using Moodle server.

Fig. 1. Moodle interface of E-Learning courses for JPTC



Source: E-Net Center, 2008

What we realized during delivery of the program is that crucial elements for success are the selection of participants, needs assessment, trainer role and level of their motivation. Previous experience of participants in such programs is welcome, but not mandatory. It is also important to emphasize that the group was also mixed in terms of age. Participants were from 35 to 48 years of age. Therefore, in the circumstances of a mixed group, program and instructional design customization gains a higher importance. There can be no success without a thoroughly conducted needs assessment at the very beginning of the program, as the basis of a successful blended learning model.
Participants' motivation is not only a matter of individual expectations and the training institution, but is also affected by the organizational culture and interests of institutions delegating participants. The role of the trainer is also an important one; the trainer should not be a story-teller, but an adviser and consultant during all phases of the program.
According to results of the participants' work and their evaluation of the program, it was obvious that the objectives of the program were achieved, in the sense that JPTC received new educators trained in using new technologies. These trainers are able to spread their knowledge further, training new trainers, thus achieving long term results for JPTC in terms of efficiency and effectiveness.

3. CONCLUSION

The professional development of educators needs to be supported, facilitated and encouraged by the educational system in which they practice, not conceived and implemented in exclusion of that system. (Childs at al, 2008) For the digital age, we need new curricula, new organization, new architecture, new teaching, new student assessments, new administration procedures, and many other elements. (Prensky, 2009) Organizations must look beyond the traditional boundaries of classroom instruction by augmenting their current best practices with new advances in learning and collaboration technologies to maximize results. (Singh & Reed, 2001)
From what we can discern, JPTCs have achieved major results thanks to the E-Net Center Program. The most important is that JPTCs created a core of trainers for developing and implementing their e-learning courses. Trainers achieved huge improvements in the field of instructional design and training delivery, thanks to which JPTCs have observed the adoption and adaptation of new creative techniques in their courses.
Using trainers as coaches and consultants after the completion of face-to-face portion of the program had a significant impact on success of the program, as the participants emphasized in the evaluation phase.
The program was successful thanks to a combination of factors, such as good selection and recruitment of participants, sound needs assessment, well-chosen

instructional design, use of the collaborative blended learning model, and organizational support.

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CHALLENGES OF E-LEARNING MANAGEMENT WITHIN THE CROATIAN HIGHER EDUCATION SYSTEM

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Abstract

For the past few years, e-learning has become synonymous with different learning and teaching techniques based on information and communication technologies. Generally speaking, e-learning has been increasingly present in the Croatian higher education system, gradually changing its traditional character. However, this modern learning and teaching concept has not been equally accepted throughout student population. There are numerous reasons for this state of affairs, one of the most important ones being disproportion, i.e. unequal pace of its introduction at different university and vocational studies in Croatia. These discrepancies cannot be eliminated without active support by all the actors participating in the education process. The greatest responsibility, nevertheless, lies with the people directly in charge of the e-learning process. To fulfil its task more efficiently, e-learning management requires relevant information on different aspects of its usage, as well as its acceptance among students. With this aim in mind, we conducted a survey of student attitudes at Josip Juraj Strossmayer University of Osijek. This paper presents the results of this research, which are based on application of various statistical methods, primarily cluster analysis.

JEL classification: I21

Keywords: e-learning management, attitudes of students, relevant information, cluster analysis

1. Introduction

In developed countries of the world, information and communication technologies (ICT) have had a major impact on education, becoming eventually its integral part. In the early stages, different technical and technological devices and tools were limited in scope and were thus used as nothing more than support to traditional teaching methods. This situation has changed dramatically in the past fifteen years or so. Intensive development of information and communication technologies, especially of the Internet, has allowed the implementation of a number of new methods and teaching tools, thus creating a very different learning and teaching environment. The result of these processes is that the education system has adapted and become increasingly learner-oriented, putting students, i.e. learners at the centre, providing them with all the necessary resources, which have been virtually tailor-made in terms of time, place and manner of learning.

There are numerous terms in use that describe technology-supported education (Anohina; 2005, pp. 91-102), such as online learning, virtual learning, virtual classroom, electronic classroom, network learning, web-based learning, web-based training and internet-based training. We could make a certain distinction between each of these terms, although these are usually no more than formal differences. It seems that the term e-learning has managed to come to the fore as a kind of paradigm for everything that has been researched and developed over the past fifty years in the field of education supported by information and communication technologies.
Numerous definitions of the concept of e-learning can be found in available sources, however, due to space limitations, we have chosen to quote only three of those:

- E-learning is the continuous assimilation of knowledge and skills by adults stimulated by synchronous and asynchronous learning events - and sometimes Knowledge Management outputs - which are authored, delivered, engaged with, supported, and administered using Internet technologies (Morrison; 2003, p. 4). It should be noted that the cited author focused on adults who have finished their formal education. He believes that e-learning is almost always for the benefit of such kind of learners.
- E-learning is the use of Internet technologies to create and deliver a rich learning environment that includes a broad array of instruction and information resources and solutions, the goal of which is to enhance individual and organizational performance (Rosenberg; 2006, p. 72).
- E-learning can be defined broadly as any use of Web and Internet technologies to create learning experiences (Horton & Horton; 2003, p. 13).

All the above definitions mention the concept of Internet technologies, which is quite understandable, given the influence the Internet has had on the education system trends.

In accordance with the changes under way in Croatian higher education, e-learning management has been gaining in importance. People engaged in managing e-learning at Croatian universities and polytechnics need to establish and maintain a system that will effectively meet the needs and requirements of its users. To be able to do this successfully, they first have to collect relevant information on different aspects regarding the use and acceptance of e-learning among student population. Conducting such surveys will allow researchers to gain an insight into the current situation, which is the first step in an effort to eliminate the registered differences in the level of e-learning achieved at particular university and vocational studies.

2. Methods

The data were collected by polling the students at Josip Juraj Strossmayer University of Osijek, and then analyzed using different statistical methods. In order to gain an adequate insight into the respondent sample, in its description we determined absolute and relative frequencies for each of the determined groups, and then grouped the data according to the modalities of chosen features, thus forming two-way tables. Basic descriptive statistics were calculated for the research variables, and 95% confidence intervals for the mean were determined.
A particular place in the research of these issues was given to cluster analysis. Cluster analysis is a set of methods for constructing a sensible and informative classification of an initially unclassified set of data, using the variable values observed on each individual (Everitt; 2006, p. 81). Cluster analysis can also be defined as a set of techniques for sorting variables, individuals, and the like, into groups on the basis of their similarity to each other (Cramer & Howitt, 2004, p. 24). In statistics, these groupings are known as clusters. In our research, cluster analysis was used for classifying respondents according to the level of e-learning acceptance on their part.

3. Previous research

There have been different approaches to the research of various aspects of e-learning implementation in the learning and teaching process. In this paper we will note only three research papers that also used cluster analysis for this purpose.
Stoyanov and Kirschner (2004, pp. 41-56) carried out a hierarchical cluster analysis of the raw data to identify how experts classified statements into groups. In addition, they attached means to each statement and group of statements. Their analysis distinguished 17 clusters of items. Tao (2008, pp. 1495–1508) identified in the cluster analysis using four higher-level issue constructs emerging from a factor analysis of 30 variables two totally distinct groups of students, namely the skeptics and the optimists. Zakrzewska (2008, pp. 209-214) divided students into groups by unsupervised classification. In the article, she described application of two-phase hierarchical clustering algorithm which enables tutors to determine such parameters as maximal number of groups, clustering threshold and weights for different learning style dimensions.

4. Sample and research variables

The sample was comprised of 215 students of the Josip Juraj Strossmayer University in Osijek. The distribution of the surveyed students according to gender is given in Table 1.

GENDER	NUMBER OF STUDENTS	PERCENT
Male	72	33.49
Female	143	66.51
TOTAL	215	100.00

Table 1. Distribution of the surveyed students according to gender

Table 2 shows the student distribution according to the year of study. Students of senior years were more strongly represented in the sample, since it was assumed that they would have had more opportunities to encounter various forms of e-learning during their studies.

YEAR OF STUDY	NUMBER OF STUDENTS	PERCENT
I	33	15.35
II	24	11.16
III	69	32.09
IV	89	41.40
TOTAL	215	100.00

Table 2. Distribution of the surveyed students according to the year of study

The following table was the result of grouping the data according to gender and the year of study.

GENDER	YEAR OF STUDY				TOTAL
	I	II	III	IV	
Male	8 (3.72%)	13 (6.05%)	16 (7.44%)	35 (16.28%)	72 (33.49%)
Female	25 (11.63%)	11 (5.12%)	53 (24.65%)	54 (25.12%)	143 (66.51%)
TOTAL	33 (15.35%)	24 (11.16%)	69 (32.09%)	89 (41.40%)	215 (100.00%)

Table 3. Distribution of the surveyed students according to gender and the year of study

Table 4 lists the distribution of students according to the scientific field of the faculty, i.e. department, in which they are matriculated.

SCIENTIFIC FIELD	NUMBER OF STUDENTS	PERCENT
Natural sciences	77	35.81
Technical sciences	24	11.16
Biotechnical sciences	35	16.28
Social sciences	61	28.37
Humanities	18	8.37
TOTAL	215	100.00

Table 4. Distribution of the surveyed students according to the scientific field of the faculty, i.e. department, in which they are matriculated

By simultaneous grouping of the data according to the modalities of features representing the respondent gender and the scientific field of the faculty, i.e. department, in which they are matriculated we obtained Table 5.

GENDER	SCIENTIFIC FIELD					TOTAL
	Natural sciences	Technical sciences	Biotechnical sciences	Social sciences	Humanities	
Male	23 (10.70%)	15 (6.98%)	15 (6.98%)	13 (6.05%)	6 (2.79%)	72 (33.49%)
Female	54 (25.12%)	9 (4.19%)	20 (9.30%)	48 (22.33%)	12 (5.58%)	143 (66.51%)
TOTAL	77 (35.81%)	24 (11.16%)	35 (16.28%)	61 (28.37%)	18 (8.37%)	215 (100.00%)

Table 5. Distribution of the surveyed students according to gender and the scientific field of the faculty, i.e. department, in which they are matriculated

In Table 6, year of study is connected with the variable defined as the scientific field of the university faculty, i.e. department, in which a respondent is matriculated.

YEAR OF STUDY	SCIENTIFIC FIELD					TOTAL
	Natural sciences	Technical sciences	Biotechnical sciences	Social sciences	Humanities	
I	17 (7.91%)	1 (0.47%)	8 (3.72%)	3 (1.40%)	4 (1.86%)	33 15.35%)
II	9	0	9	4	2	24

	(4.19%)	(0.00%)	(4.19%)	(1.86%)	(0.93%)	11.16%)
III	35 (16.28%)	1 (0.47%)	5 (2.33%)	21 (9.77%)	7 (3.26%)	69 32.09%)
IV	16 (7.44%)	22 (10.23%)	13 (6.05%)	33 (15.35%)	5 (2.33%)	89 41.40%)
TOTAL	77 (35.81%)	24 (11.16%)	35 (16.28%)	61 (28.37%)	18 (8.37%)	215 (100.00%)

Table 6. Distribution of the surveyed students according to the year of study and the scientific field of the faculty, i.e. department, in which they are matriculated

For this research, we defined 18 variables by which we examined students' attitudes on various aspects of e-learning:

- Estimate of knowing about the possibilities of using e-learning in education (V1);
- Estimate of the level of e-learning development at the respondent's faculty, i.e. department (V2);
- Estimate of the e-learning concept as such (V3);
- Estimate of the possibility to study and graduate by means of e-learning alone (V4);
- Estimate of the need for the traditional teaching to be supported by e-learning (V5);
- Estimate of the capability of e-learning to simplify the education process (V6);
- Estimate of the impact of e-learning on student creativity (V7);
- Estimate of the impact of motivation on e-learning efficiency (V8);
- Estimate of grading objectivity when taking computer tests and exams (V9);
- Estimate of the possibility for e-learning to provide flexibility in choosing teaching times (V10);
- Estimate of possibilities for "out-of-classroom" education offered by e-learning (V11);
- Estimate of the possibility to reduce the costs of higher education through e-learning (V12);
- Estimate of the usefulness of e-learning for people with limited mobility (V13);
- Estimate the capacity of e-learning to promote the acquisition of knowledge and skills in ICT (V14);
- Estimate of lack of direct student-teacher contact as a drawback of e-learning (V15);
- Estimate of lack of contact with fellow students as a drawback of e-learning (V16);

- Estimate the inadequacy of e-learning for students with low computer literacy (V17);
- Estimate the possibility for e-learning to encourage a user's computer and Internet addiction (V18).

For assessing students' attitudes a 5-level scale was used, in which 1 denoted the lowest and 5 the highest degree of agreement with a particular claim.

5. Analysis Results

In order to gain a better insight into the basic features of student responses, Table 7 lists basic descriptive statistics (mean, median, mode, standard deviation and variation coefficient) calculated for the 18 analyzed variables. The table also contains 95% confidence intervals for the mean.

VARIABLE	DESCRIPTIVE STATISTICS					95% CONFIDENCE INTERVAL FOR THE MEAN	
	Mean	Median	Mode	Standard deviation	Variation coefficient	Lower bound	Upper bound
V1	3.144	3.000	3.000	1.103	35.092	2.996	3.293
V2	2.828	3.000	3.000	1.137	40.205	2.675	2.981
V3	3.553	4.000	4.000	0.984	27.686	3.421	3.686
V4	2.744	3.000	3.000	1.170	42.635	2.587	2.901
V5	4.060	4.000	5.000	1.064	26.201	3.917	4.203
V6	3.874	4.000	4.000	0.971	25.052	3.744	4.005
V7	3.740	4.000	4.000	1.026	27.445	3.602	3.878
V8	3.633	4.000	4.000	1.046	28.785	3.492	3.773
V9	2.884	3.000	2.000	1.144	39.673	2.730	3.038
V10	3.540	4.000	3.000	1.008	28.477	3.404	3.675
V11	3.572	4.000	3.000	1.052	29.438	3.431	3.713
V12	3.623	4.000	3.000	0.996	27.502	3.489	3.757
V13	3.995	5.000	5.000	1.202	30.076	3.834	4.157
V14	4.107	4.000	5.000	0.903	21.990	3.986	4.228
V15	3.233	3.000	3.000	0.991	30.672	3.099	3.366
V16	3.274	3.000	3.000	1.125	34.355	3.123	3.426
V17	3.019	3.000	3.000	1.152	38.158	2.864	3.173
V18	3.205	3.000	3.000	1.182	36.885	3.046	3.364

Table 7. Basic descriptive statistics and 95% confidence intervals for the mean

The highest average grade was obtained for the variable defined as estimate of the capacity of e-learning to promote the acquisition of knowledge and skills in ICT (V14). The only other variable that received the average grade higher than 4 was the need for the traditional teaching to be supported by e-learning (V5). The lowest average grade was calculated for the variable defined as estimate of the possibility to study and graduate by means of e-learning alone (V4). Thus, students approve of using e-learning within the teaching process; however, they would not embrace the idea of education based on e-learning alone. The average grade lower than 3 was calculated for another two variables: estimate of the level of e-learning development at the respondent's faculty, i.e. department (V2), and estimate of grading objectivity when taking computer tests and exams (V9). Taking exams on a computer is definitely more objective than some other forms of examination, however, the results for the variable V9 lead to the conclusion that students do not prefer this way of taking tests and exams. Their negative attitude, as a reflection of subjective perception, must have had an effect on the stated assessment.

It was only in the case of the variable defined as estimate of the usefulness of e-learning for people with limited mobility (V13) that the median had the value of 5. There were three such variable in the case of mode. In addition to the already mentioned variable V13, the largest number of respondents gave the grade 5 also to variables: estimate of the need for the traditional teaching to be supported by e-learning (V5), and estimate the capacity of e-learning to promote the acquisition of knowledge and skills in ICT (V14). The lowest mode value was calculated for the variable defined as estimate of grading objectivity when taking computer tests and exams (V9).

The calculated variation coefficients indicate that with all the variables there is data dispersion which cannot be regarded as small. The last two columns in the table contain 95% confidence intervals for the mean. Thus it can be concluded e.g. for the variable V1 that there is 95% probability that the average grade given by students to the familiarity with possibilities of e-learning in education is higher than 2.996, and lower than 3.293.

Our sample of students was divided into two clusters by applying k-means cluster analysis. Table 8 shows the means and standard deviations of these clusters.

VARIABLE	CLUSTER			
	1		2	
	Mean	Standard deviation	Mean	Standard deviation
V1	2.559	1.098	3.590	0.879
V2	2.301	1.008	3.230	1.066
V3	2.968	1.005	4.000	0.692
V4	2.183	1.083	3.172	1.050
V5	3.280	1.067	4.656	0.557
V6	3.237	0.925	4.361	0.681
V7	3.097	0.968	4.230	0.769
V8	2.946	0.948	4.156	0.782
V9	2.484	1.069	3.189	1.108
V10	2.892	0.853	4.033	0.823
V11	2.925	0.900	4.066	0.879
V12	3.129	0.850	4.000	0.936
V13	3.247	1.176	4.566	0.862
V14	3.559	0.902	4.525	0.646
V15	3.183	1.021	3.270	0.971
V16	2.957	1.197	3.516	1.006
V17	2.817	1.063	3.172	1.197
V18	3.118	1.169	3.270	1.193

Table 8. Means and standard deviations of clusters

The first cluster is comprised of respondents who exhibit lower support for e-learning, whereas the second cluster consists of students who have a more positive outlook on this modern learning and teaching concept. In accordance with this, average grades calculated for the first cluster are lower than those determined for the second cluster. In the first cluster 93 students (43.26%) were allotted and 122 students (56.74%) in the second.

Figure 1 shows the values of means for the two clusters.

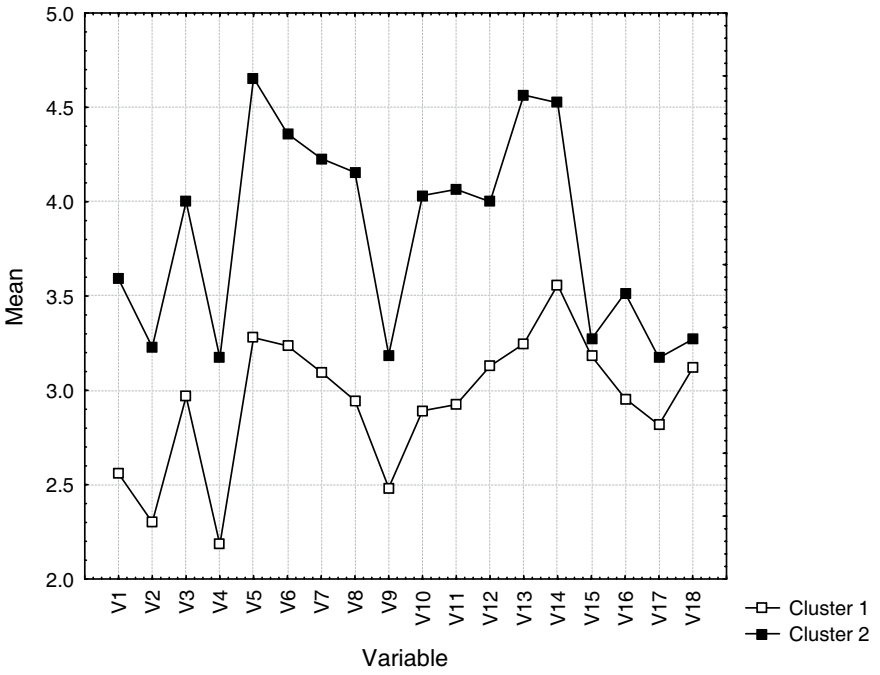

Figure 1. Plot of means for each cluster

Below is the analysis of variance (ANOVA) table. This table helps us to identify the variables that are most important for cluster separation.

VARIABLE	Between cluster sum of squares	df	Within cluster sum of squares	df	*F*-ratio	*p*-level
V1	56.097	1	204.433	213	58.448	0.000
V2	45.489	1	231.144	213	41.918	0.000
V3	56.232	1	150.903	213	79.371	0.000
V4	51.653	1	241.278	213	45.599	0.000
V5	99.942	1	142.272	213	149.626	0.000
V6	66.682	1	134.927	213	105.267	0.000
V7	67.711	1	157.703	213	91.454	0.000
V8	77.200	1	156.772	213	104.888	0.000
V9	26.203	1	253.890	213	21.983	0.000
V10	68.620	1	148.794	213	98.231	0.000
V11	68.684	1	167.949	213	87.108	0.000
V12	40.032	1	172.452	213	49.445	0.000

V13	91.708	1	217.287	213	89.899	0.000
V14	49.189	1	125.351	213	83.583	0.000
V15	0.406	1	209.966	213	0.412	0.522
V16	16.514	1	254.295	213	13.832	0.000
V17	6.648	1	277.278	213	5.107	0.025
V18	1.223	1	297.773	213	0.875	0.351

Table 9. ANOVA table

On the basis of calculated *F*-ratios it can be concluded that variables defined as estimate of the need for the traditional teaching to be supported by e-learning (V5), estimate of the capability of e-learning to simplify the education process (V6), and estimate of the impact of motivation on e-learning efficiency (V8), have the most important role in assigning students to one or the other cluster. The variables with the weakest role in classifying students into clusters are estimate of lack of direct student-teacher contact as a drawback of e-learning (V15), and estimate the possibility for e-learning to encourage a user's computer and Internet addiction (V18). It should be noted that in the case of cluster analysis, *F* statistics cannot be interpreted as in a traditional ANOVA, i.e. that the significance values are not a reliable estimate of the probability.

6. Conclusion

Management of e-learning cannot be improved unless we gather adequate information regarding its acceptance among the users. There are numerous aspects of e-learning implementation that need to be taken into account here. Such surveys need to be conducted continuously, as this creates the conditions for making optimal decisions.

E-learning is increasingly present in the Croatian higher education system; however, the pace of its introduction has been rather uneven or even erratic. In some institutions different forms of e-learning are already deeply ingrained in the teaching process, whereas other higher education institutions have only begun to use some of its simpler forms. Given that, differences in students' perceptions come as no surprise, which was confirmed in our research. By using cluster analysis, our sample was divided into two groups. The first consisted of students who give lower support to e-learning, and the second group encompassed students with a more positive outlook on e-learning. Apart from defining the possible clusters, the paper also analyzed the basic features of student attitudes regarding certain aspects of e-learning implementation.

Surveying the opinions of e-learning users has not received sufficient attention in the Croatian education system. In this context, the research whose results are presented in this paper can be viewed as an effort to change this state of affairs. If we accept that the growth and development of our higher education depends

directly on the success in introducing and implementing information and communication technologies, it becomes more than clear what adverse effects can occur if users' perceptions are disregarded.

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QUALITY MANAGEMENT IN EDUCATION

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Abstract

Having considered the current situation of the Croatian educational system and the quality of all its individual components, we can't help but notice that the awareness of the importance of education as a foundation for the growth and development of each country isn't strong enough. Education quality is becoming increasingly important for those who are involved in it either directly or indirectly, and for those who use its services. Access to education and quality education are to be regarded as mutually dependent and indivisible needs and rights. This is primarily achieved by developing creativity, civic and democratic values, as well as by knowledge, abilities and skills needed for everyday and professional life. Basic education is not sufficient or complete, and therefore should be considered only as a basis for learning that needs to be used all life long. Lifelong learning for all has become one of the pillars of development.
Quality management is a part of management aimed at achieving quality goals through planning, monitoring, assuring and improving quality. Involving all members of the organization brings us closer to total quality control (Total Quality Management, TQM). Efficient Total quality management system in organization can facilitate quickly challenge in word market. Total quality management realize target and mission in education of young generation. TQM upgrade management quality and quality of work in education institute in general.
The key points for the improvement of education are scientific and technological development, social changes and organizational changes. Education efficiency and success don't depend just on quantity but as well on quality. The quality indicator system of education, as well as the criteria related to the quality indicators help schools to identify the crucial areas of their activities - their own advantages, disadvantages and development opportunities.

JEL classification: I21, L15

Keywords: quality, quality management, total quality management, educational system, quality indicators

1. Introduction

Education quality is a key factor for improving the business quality, and therefore strengthening competitive advantage. Access to education and quality education are to be regarded as mutually dependent and indivisible needs and rights. Lack of education is a basic cause of poverty. Intellectual workers are becoming a major tool in increasing productivity, and knowledge is becoming

the main resource.
Accessing to the European union for the Croatian education system means new challenge which is acquirement better quality, manageability, mobility and response to the requirements and changes.
Differences between modern and traditional educational systems are evident in different educational goals, teaching approaches and roles of all participants in the educational process. Efficiency and quality are the key parameters that determine the socio-economic importance of the field of education. Quality management is a part of management aimed at achieving quality goals through planning, monitoring, assuring and improving quality. In modern conditions, quality management becomes a business function as well as any other function, involving people of all profiles and from all the departments of the organization.

2. Education quality

The word quality comes from the Latin word *qualitas* (property, quality, value, characteristic, feature, ability). In a highly competitive world with increasing consumer demands, quality has become the key factor of survival in the market, of profitability and development, not just for individual sectors and organizations, but also for the whole country's economy. Only few Croatian companies recognize the quality of education as the key factor for improving business quality, and therefore for strengthening competitive advantage.
Education quality is a dynamic, multi-dimensional concept that refers not only to the educational model, but also to the institutional mission and its goals, as well as to the specific standards of the system, facility, program or event.
The pedagogical theory and practice has been trying to determine what the quality of education is. In education it is only possible to determine the quality by comparing the results with the given goal, or by comparing it with previously established standards.
Any human activity is identified by the quality of its product. The same rule applies to education. The quality of education is therefore responsible for the quality of its "product": students. Various forms of education are present in different places, at various times, under different circumstances and terms, intentional and unintentional, organized and unorganized, with or without a program.
One of the key problems is the unification of standards and quality evaluation criteria. The key components of the evaluation process are the methodological approach in applying good methods and procedures of data collection, and the definition of key concepts and their relations with the concept of quality. The fundamental precondition for quality improvement is the establishment of an active system of internal and external evaluation. Internal evaluation implies a significant role of the judgment of students as active participants in the process

of quality evaluation in education.
Education quality is to be understood as the most important asset for strengthening market competitiveness, and thus as the accelerator of the total economic growth and development of Croatia.

3. Quality management in education

Quality must be consciously managed in order to satisfy quality demands. From the previous claim we conclude that quality management is "an integral part of management, whose role is to reach quality objectives, which are reflected not just in providing but also in improving quality. This is achieved by managing the activities derived from the established quality policies and plans, and is carried out within the quality system, using, among other things, the appropriate quality monitoring plan."
The efficient management of an organization is achieved by using different models. One of them is quality management system. By quality management system we understand "structure, procedures, processes and other necessary resources required for the application of quality management."
A quality system is inseparable from the international and European norms (standards) of quality. A standard is a formalization of the basic principles of quality management. An increasing number of entities (not only business related) are striving to adapt its own quality system with the requirements, mainly, of the ISO 9000 standards.
To be accredited to ISO 9001 (from 2000), an independent auditor has to certify that the organization meets the following requirements of the Standard: quality management system, records keeping, management commitment to quality, resource management, production, and measurement, analysis and improvement.
Any higher education organization that wants to be accredited to the certificate, must go through several stages: the development of a quality system that implements the requirements of ISO 9000:2000; the selection of an accredited certification body; pre-auditing of the quality system by the certification body; the final audit of the quality system after which the certificate is issued; a series of smaller audits at least once a year. According to some experiences from the European Union, the whole process of obtaining a certificate lasts between 12 and 18 months. The certificate is valid for a period of three years.
The European Network for Quality Assurance in Higher Education (ENQA) was established in 2000 with the goal to establish agencies for quality assurance in higher education. In 2004 the Network changes its name into European Association for Quality Assurance in Higher Education. Its main purpose is to promote European cooperation in the field of evaluation and quality assurance among all the participants involved in the process of quality assurance. Agencies were established in many countries, and their goals are being realized

through the following functions:
1. Quality assurance and improvement in the traditional sense. For this purpose, agencies should encourage higher education institutions to improve the quality of education, especially by evaluating it. The evaluation process is divided into four steps, the major being self assessment (provided by higher education institutions) and external assessment (by independent experts). The role of the agencies is to initiate and coordinate the process of evaluation.
2. Serving as centers where all available information regarding implementation and assurance of quality systems can be found.
3. The last function is accreditation. Based on the evaluation, agencies confirm that the standards of quality of institutions/ programs meet the given requirements.

4. Total quality management in education

The concept of total quality, introduced by Professor W. Edwards Deming in the 1950s, can be applied to almost every organization up to a certain level. The term stands for the process of shifting the focus of the organization towards a superior quality of products and services.
TQM approach in education involves not only achieving high quality but also influencing all segments of the educational process: organization, management, interpersonal relations, material and human resources, etc. Applying the approach described above quality becomes total (integral).
The introduction of total quality management requires a number of changes in educational institutions. The first changes have to occur in the attitudes and activities of the management, in the organization and monitoring of the educational process, in the evaluation of its results, in the culture of communication, in the school atmosphere, and especially in the area of interpersonal relations.
The total quality management model includes the following: process planning, process management, continual improvement, total involvement and focus on the user. Total quality management is an efficient management technique that requires the full involvement of all employees on all organizational levels, thus representing the organizational culture. TQM stands for a way of life of the organization, which introduces constant improvement of business on all levels and activities, creating the appropriate environment through collaborative work, trust and respect. It approaches the processes in a systematic, consistent and organized way and applies total quality management techniques.
TQM is all about quality management of the users, leadership and management loyalty, continuous improvement, prompt response, actions based on facts, the participation of employees in the TQM culture. If an organization is constantly willing to direct its efforts towards business improvement, the principles presented above can lead to excellence in quality. The success of total quality

management depends on its eight components: ethics, integrity, trust, education, teamwork, leadership, recognizability and communication.

5. Indicators of quality in education

The system of indicators of quality in education, as well as the quality criteria associated with the indicators, help schools to point out the important areas of their own activities - their own advantages and disadvantages and development opportunities. School quality team can debate about representation and development of particular indicator aspect and search for method for upgrade and meliorate indicator representation in specify school circumstances.
The indicators are grouped into seven areas with specific topics:
1. Curriculum
- structure of the curriculum (program/goals, tasks, focus on development of functional tasks, focus on students' activities, integration of programs within and between areas)
- courses and programs
- key competences that students develop in the given school
2. Achievements (evaluated by external, independent agencies)
- achievement quality compared with the set goals
3. Learning and teaching
- teachers' work
- students' work and experience
- meeting the needs of the students
- monitoring and evaluating the work of students and teachers
4. Students' support
- students' personal, social and spiritual growth
- progress and achievement monitoring
- support in all aspects of learning, progress, students' and teachers' personal development
5. School ethos
- school policy
- school atmosphere and relations
- specific goals of each individual school
- orientation towards students', teachers' and parents' satisfaction
6. Resources
- school resources
- teachers, professional associates, the principal; their education, teachers teamwork, cooperation; being open to innovation
- material resources and premises
- efficient human and material resources
7. Management, leadership and quality assurance
- approaches to leadership and management

6. Traditional and modern educational systems

The Croatian educational system provides educational services ranging from preschool to primary, secondary, higher as well as adult education. Lifelong learning is particularly important as a tool for stimulating adults, especially the unemployed, to join the flexible educational programs and take active part in the labor market.

In the traditional educational system, the goal is the acquisition of information. Students' activities basically consist of listening and watching. This kind of lecturing is tiring and generates a multitude of unnecessary facts that students need to memorize resulting in the fact that students are generally dissatisfied with the school. Information memorized in this way can't be successfully stored in the long-term memory. The curriculum related to individual subjects and methods of teaching, emphasizes factual knowledge and passive learning, thus not enabling students to acquire the technical, technological and social knowledge skills needed in a competitive economy. One the one hand the number of compulsory subjects is too large and on the other elective subjects are almost non existent. As there are no national standards, no impartial external evaluation or testing, schools test the knowledge of their students based on their grades not their knowledge. The traditional Croatian system has three- and four-year educational programs, special programs for under-skilled workers or students with special needs and the dual system of education combined with work. Due to technological development, the majority of the mentioned professions are becoming unnecessary. The curriculum is focused too much on special skills, expertise and views of a specific profession. Vocational education didn't adapt fast enough to the changes in the economy and the needs of small and medium-sized companies. Higher education institutions are not autonomous, as funding and employment decisions are largely controlled by the Ministry of Education. University programs are not sufficiently open to the needs of the labor market. There are no good university standards related to education and its effects. Participation in lifelong learning, in the traditional educational system, is very poor. The number of those who completed only the shorter or less demanding vocational programs (lasting two or three years) is incredibly high. However, shorter and less demanding VET programs do not guarantee the competitiveness needed in the contemporary workplace. The traditional Croatian educational system seems not to provide a sufficient number of workers with the necessary knowledge and skills. The need for modern technology is not emphasized enough. New technologies change education with the development of e-learning.

In the modern educational system understanding is therefore more important than memorizing, and teaching activities are variable and subordinated to students' needs. Students acquire smaller amounts of facts and generalizations

which they compare with their experience and apply in problem solving exercises. Understanding and application of the facts allows knowledge systematization and its durability, as it is stored in the long-term memory. Teaching skills are changing and gradually transforming into the art of teaching children to teach themselves. The main result of studying is, therefore, to learn how to study. In times of rapid social and economic change, resulting in changes in the market, it was crucial to coordinate and connect pre-primary, primary, secondary and higher education, as well as adult education and training. Learning while working is becoming an extremely important form of professional development, and innovations are often interdisciplinary and come as a result of team work. Linking education to the world of work is a key factor in changing the Croatian educational system and making it capable of meeting the market and society requirements, and by doing so increasing employment possibilities. Higher education is linked with other segments of the educational system. The outputs of secondary education are inputs for higher education, making its quality dependent on the quality of secondary education. Higher education, particularly universities should, therefore, participate in establishing an external evaluation system of students' achievement, in the production of high-school programs and textbooks, and in ensuring the educational quality of teachers. Higher education institutions are places of permanent education of higher educated employees, i.e. their further formal and informal education is a part of the lifelong educational system. Higher education institutions organize further training in co-operation with educational services of companies and other organizations and with professional associations. With the progress of knowledge, education possibilities are becoming increasingly varied. Limited state funding encourages an increasing number of institutions to look for different models of funding, primarily from private sources. There are an ever increasing number of private higher education facilities on the market. They attract only wealthy students, while those who can't pay several thousand kunas for tuition go to state universities. Except institutional program also internet become most propound media of education. Internet is a tool for not scholastically study.
By applying the postulates of TQM to education, we state that education is not a social activity, but a market-competitive activity as well as any other.

7. Application of total quality management to education

In order to assess the efficiency of total quality management in education, research was carried out during 2006/07 in 60 primary and 30 secondary schools in the Republic of Croatia. The research covered the following areas: education quality based on total quality management, the assessment of quality applying the Standards for quality management in education, NUKO 9001:2007 and the relation between total quality management and the efficiency of

education. The study also aimed at determining the opinions of the participants on the management, the managing and directing of the employees professional potential, on the policy and strategy, on resources, key processes, user satisfaction, social reputation and the key results of institutions before and after the application of total quality management based on the Standards for quality management in education NUKO 9001:2007. The research results show that by using total quality management, educational institutions successfully distribute their accumulated knowledge and increase their efficiency. Total quality management helps achieving the goals and tasks of education of young generations. TQM not only improves the quality of management but also of the entire educational institution. One of the possible uses of total quality management in education in the Republic of Croatia is the approach based on Standards for quality management in education, NUKO 9001:2007. Standards for quality management in education, NUKO 9001:2007 showed their validity and can be rightfully recommended as a model that provides educational quality to the users of institutions that apply it. Its wide application in the Republic of Croatia, as well as abroad, in the time ahead, confirms that its introduction in the integrated educational system is justified.

8. Conclusion

The term quality, which encompasses economic, social, cognitive and cultural aspects of education, is perceived as an integral feature of the educational process and its results. By providing high quality educational services, educational institutions play an important role in the development of the national economy, of the society as a whole and of its individual members.
Total quality can only be achieved by establishing an innovative organization, one that is flexible, which can adjust quickly to changes in its environment and is capable of learning.
To improve education quality, an essential factor of economic and social development in the 21st century, it is crucial to reduce the huge amount of knowledge students are supposed to master, focusing their attention to a system of basic knowledge, on creativity, problem-solving and lifelong learning.

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Law and Economics

THE LEGAL REGIME OF TRADERS' LIABILITY, REGULATED BY THE LAWS ON CONSUMER PROTECTION - A NEW PARADIGM

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Abstract

The traders are assigned *ex lege* a number of acknowledged professional obligations, like the obligation of registering in the Trade Register. Besides these traditional obligations, new and complex obligations have been regulated for traders, obligations that are specific to the traders-consumers relation. These regulations are subordinated to the Consumer Law domain, which in Romania represents a contemporary creation, a result of the process of transposing the *communautaire acquis.*

Consumer protection is regulated by general and specific rules, the latter ones referring to the following sub domains: advertising; informing about the prices of the products offered to the consumers for sale; unfair clauses from the contracts concluded between the traders and the consumers; the contracts negotiated away from business premises; concluding and executing distant contracts related to financial services; consumer credit; packages of tourism services; protection of the contracts related to the right to use some immovable goods for a limited period- timeshare; selling of the products and warranties associated; general safety of the products; responsibility of the producers for the damages generated by the defective products; unfair commercial practices and ways to cease the unlawful practices in respect of the protection of consumers' collective interests.

New obligations for the traders are established through the content of both general and specific regulations, obligations that are effected in imperatives and especially in interdictions.The legal regime of the obligations that resulted this way transcend the regime of the traders' traditional obligations, making up the new paradigm of the traders' activity and it represents the theme of this paper.

Our research focused on determining the obligations set-up for the traders through both categories of rules and through their legal regime. As a result of the research carried on this theme, we conclude that setting-up this new category of obligations for the traders represents an actual means of achieving the aim of ensuring the consumer protection, adding-up to other legal means set-up in this regard.

JEL classification: D18, F10

Keywords: traders; professional obligations; Consumer Law; unfair practices; misleading and aggressive practices ; consumer credit; advertising.

1.Introduction

In a previous research on the origins and evolution of the regulations that ensure the consumer protection in Romania, in order to step into the atmosphere of researching this subject, we turned to the Greek mythology that offers models through its characters and its plots, and we chose Hermes to be the god of commerce, because of the dual nature of the "actors" that are under his ruling, and due to the ambivalence, that is reunited under the patronage of this god, as he is the protector of the traders as well as of the thieves.
This time, however, to achieve continuity, our research focuses on the same category of regulations, the regulations which ensure consumer protection, but as seen from a new point of view. Therefore, the question that became famous in this domain, *illo tempore*, from a consumerist point of view, was whether the physiognomy of this category of regulations is plentiful to protect the consumers.
However, the general question for which this research is trying to provide an answer follows a business law point of view which is: What is the impact of the consumer protection regulations on the traders? Are the obligations stipulated in the consumer protection regulations, materialized in imperatives and interdictions which are sometimes redundant? Do the traders become more responsible or are they held responsible more than before? Are the enforceable sanctions dissuasive?
Consequently, concerning the object of the current research, from the Greek mythology we consider it most representative to relate to Sisif who in Hades was put to an eternal torture, that of pushing a giant rock up the hill and once he got to the top, the rock would roll back down and he would have to start all over again. Similarly, due to the obligations comprised in the consumer protection regulations and due to their perspectives, the traders are subject to repeated burdens every commercial cycle. The traders perform their role successfully only if they respect the obligations comprised in these regulations.

2. Doctrinaire and regulatory premises

The doctrinaire premise of this study is that besides these traditional obligations, new and complex obligations have been regulated for traders. The classical Romanian doctrine in the domain of Commercial law identifies the trader's traditional obligations, like the obligation of registering in the Trade Register, financial and revenue obligations. The modern doctrine (Apan, 2007,p.130) in this domain has the role to complete them with obligations that are specific to the traders-consumers relation, regulated by the Consumer Law domain, "a contemporary creation", in Romania.

Between December 1990 until today, but especially between 2004 - 2007, a significant number of normative documents which transposed the *communautaire acquis* were adopted in the national legislation, the consumer protection being thus put into value regularly, as a fundamental component of the economic and social environment. The consumers' protection is a central objective of the policy of the European Union, of which Romania is a member since 1 January 2008.
Taking into consideration that an exhaustive analysis of all the regulations on consumer protection would be an extremely wide one, we will focus on the general regulations in the field of combating the traders' unfair practices in relation with the consumers and subsidiary on advertising the consumer credit.
A preliminary mentioning is that because the analyzed regulations are recent the jurisprudence is very poor and consequently, we will mainly focus our research on the doctrine and on landmarks of legislative text.

3. Regulations in the field of combating the unfair practices of the traders in relation with the consumers

Sedes materiae is the Romanian Law 363/2007 related to combating the unfair practices of the traders in relation with the consumers, and harmonizing the regulations with the European legislation concerning the consumer, hereinafter called Law 363/ 2007, transposes Directive 2005/29/EC on unfair business-to-consumer commercial practices in the internal market.
The development of fair commercial practices on the common market is essential for facilitating the extent of cross-border activities, but the legislations of the Member States had essential differences, which entailed distortions of competition, therefore it was necessary to establish general rules to protect the consumers. Law 363/2007 aims at a better functioning of the market and represents an effective regulatory guide of the marketing activity of the traders in relation to the consumers and interdicts the unfair commercial practices.
The notion of „business-to-consumer commercial practices" is defined as any action, commission, behavior, measure or commercial presentation including advertising and selling, carried out in strict connection with promoting, selling or supplying a product to the consumers. The unfair commercial practices that are under the jurisdiction of this law are the ones used before, during and after a commercial transaction in relation to a product.
A commercial practice is unfair if:
-it is contrary to the requirements of the professional diligence, which designates the care and competence a consumer reasonably expects from the traders, in conformity with the fair market practices and/or with the general principle of *bona fide* in their field of activity;
-it alters or is likely to essentially alter the economic behavior of the average consumer to whom it reaches or to whom it addresses, or to any average member of the group, when a commercial practice addresses a certain group of

consumers. Substantial alteration can be achieved by using a commercial practice that considerably affects the consumer's capacity of making a decision with full knowledge of the facts.

The unfair commercial practices are, especially *the misleading and aggressive* ones, and their character can be established by reporting it to the average consumer which is considered to be a standard, being reasonably well-informed and reasonably observant and circumspect, taking into account social, cultural and linguistic factors.

By using the judicial technique of the annex list, the law includes the "List of the commercial practices which, in any circumstances, are considered unfair", which include misleading commercial practices and aggressive commercial practices.Misleading commercial practices are grouped into two categories: *actions and omissions*.

a. Misleading omission

A commercial practice shall be regarded as misleading omission if:

- the trader omits essential information that the average consumer needs, according to the context, to take an informed transactional decision and thereby causes or is likely to cause the average consumer to take a transactional decision that he would not have taken otherwise.
- considering the previously mentioned aspects, a trader hides or provides in an unclear, unintelligible, ambiguous or untimely manner such material information or fails to identify the commercial intent of the commercial practice if not already apparent from the context, and where, in either case, this causes or is likely to cause the average consumer to take a transactional decision that he would not have taken otherwise.

Law 363/2007 also establishes through a non–limitative enumeration *the essential information* about the products, in the case of an *invitation to purchase*, that is the commercial presentation through which the main characteristics and the price of the product are mentioned to an extent appropriate to the medium and the product and which consequently allows the consumer to purchase products. The essential non–limitative information is: the characteristics of the product, the price and methods of calculating it, additional costs, means of payment, the right to withdrawal.

The law also establishes that *the essential information,* is the information stipulated by other laws, that reffer to the commercial presentations, including the advertising and selling of the products.A non-limitative "List of the laws settling the regulation related to advertising and informing" is included in the annex **.**The list includes a law on consumer credit and advertising the consumer credit.

b.The regime of the traders' liability for the misleading commercial practices.

The trader's use of misleading commercial practices constitutes a contravention and is sanctioned with a civil penalty between 3.000 and 30.000 lei,

approximately 730 and 7.300 Euros. When enforcing the civil penalty the fact finder disposes the cessation of the unfair commercial practices and may propose as complementary measure the suspension of the activity until the cessation of the unfair commercial practice.
The court of law or National Authority for Consumer Protection will apply the cessation or institute the appropriate legal procedures to cease the unfair commercial practices, by emergency procedure. If the court decision is final and irrevocable, its publishing may be disposed as well as publishing a corrective statement regarding the misleading practice that was used and the measures that were disposed, both in a widely circulated newspaper, on the trader's expense.

4. Regulations on advertising consumer credit

Sedes materiae of consumer credit is the Romanian Law 289/2004 related to the juridical regime of the consumer credit contracts, that has come into force on 06.01.2005. The Norm of application of the Law 289/2004, hereinafter called the Norm of application, details the aspects connected with the Law 289/2004 (Apan, 2007, p.199).
Through the Government Ordinance 174/2008 on the amendment of normative acts on consumer protection, in force since January 2009, hereinafter called the Government Ordinance 174/2008, the protection framework of consumers in different domains among which the consumer credit contract is reforged on aspects like advertising.
Advertising versus informing;
Having an extended object, which includes several essential elements, of which informing the consumers is the keystone of the protection in the consumer credit landscape, ever since the moment of advertising the credit because the protecting rules apply not only to the actual contract but also to its preliminaries (Calais-Auloy & Steinmetz, 2000, p 49).

The traders make use of advertising with the purpose of selling goods or providing services, inciting the public in general and particularly the potential consumers to purchase them, as advertising represents the most active intervention in the process of making the decision to buy(Blythe, 1998, p. 163). Advertising that misleads consumers is detrimental to their economic interests as it determines them to decide on purchasing a product or service that later will not corespond to their legitimate expectations.

A means of protecting the consumers of financial services, services that have a high level of complexity, is constituted by the regulations on the determined elements contained by the advertisements for consumer credit, taking into consideration the case where they indicate an interest rate or any other figures referring to the cost of the credit. Having in view such situation, informing the consumers on the consumer credit contract through advertisements is necessary in order to allow the consumer to compare

several offers in order to make an informed decision about the conclusion of a credit contract.

The regulations on advertising the consumer credit comprise the following thesis, chronologically presented:

a.*Thesis I* covered by Law 289/2004 and in the Norm of application:
- the mandatory element in the content of advertising is the annual percentage rate of charge-APR, in Romanian, dobânda anuală efectivă-DAE, hereinafter called DAE, that shall be clearly and understandable mentioned, and the commercial aim of the informations shall be very clearly stated, by using common language.
- measures on advertising the consumer credit: the numbers and letters that express DAE shall have the same size, font and colour and the same background colour as the numbers/letters used for writing the price of the good; the amount and period of time for which DAE is calculated shall be mentioned too;
-measures for the legibility of the advertisement: the background colour must enable the displayed information to be legible;
- details on the notion of "common language": the information on consumer credit must not mislead the consumers through the usage of specific and technical terms of a certain financial or bank domain, through the usage of abbreviations or initials of names, excepting those provided by the law or by the common language.

b.*Thesis II* covered by the new regulations comprised in the Government Ordinance 174/2008 that completes Thesis I, provides that the mandatory element in the content of an advertisment is *the standard information,* presented through a representative example: the borrowing rate, fixed or variable together with particulars of any charges included in the total cost of the consumer credit; the total amount of credit; the DAE in accordance with the specific legal provisions;the duration of the credit agreement;the total amount payable by the consumer; mentions about the insurance contract, in the cases in which the consumer is granted the credit provided he signs an insurance contract.

We come to the conclusion that *Thesis II* is much more extended compared to the initial one and absorbs some provisions of the new Directive 2008/48 on consumer credit. Also, by analyzing the elements comprised in the *standard information* we establish that they represent *de facto*, *essential information* that leads to the consumer comparing the launched offers and making the decision to conclude a consumer credit contract with full knowledge of the facts.

The *standard information* has a mandatory nature for the traders, on the assumption that the advertisement indicates an interest rate or any other figures referring to the cost of the credit. Not including any of the mandatory elements of the standard information provided by the regulations constitutes a misleading practice.

Eccum modo, the consumer credit practices acquire the valences of the financial services provider's responsibility as a major objective in the domain of the consumers' protection is combating over indebtedness.

5.Conclusions

The legal regime of the traders' obligations in their relations with the consumers transcend the regime of the traders' traditional obligations, making up the new paradigm of the traders' activity. We conclude that setting-up this new category of obligations for the traders represents an actual means of achieving the aim of ensuring the consumer protection, adding-up to other legal means set-up in this regard.

We consider that every step taken for regulating the commercial operations, for establishing a coherent framework, ensures the fluidization of operations, making aware and redering responsible all the "actors" and at the same time guarantees social justice. Therefore we have enough reasons to persevere in this direction.

On condition the regulations on unfair practices will be enforced, adopting them constitutes a significant moment in the process of modernization of the Romanian commercial framework and in the community process as well, through creating the basis for fair, unitary, and beneficial practices for the consumers as well as for the traders. But changing the traders' principles about their behavior in relation with the consumers is anywhere in the world, a process that takes time.
Moreover, if in Romania, regulating the advertising of consumer credit was successful from the legal point of view, in other domains however, the lawmaker's inconsistency may lead to lack of coherence of the regulations which results in the diminution of their applicability and consequently the diminution of the legal protection of consumers.

We consider that the current period of recession caused more awareness of the consumption, situation which encourages the finding of the necessary basis for reestablishing the contingency between the traders and the consumers, this also being the purpose of this research.

But it is obvious that this demonstration does not have an isolated nature, but it only completes other categories of manifestations of which some have acquired a social dimension. This is the case of the activity carried out by European Coalition for Responsible Credit that launched in 2008 the Declaration and Principles for Responsible Credit that we signed and the activity of the National Community Reinvestment Coalition - USA; Debt On Our Doorstep- UK and Global Coalition for Responsible Credit.

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UNIFIED GOVERNANCE AND PLANNING FOR HIGH IMPACT EVENTS IN FINANCE, CLIMATE AND THOSE CAUSED BY MALICE

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[1]2007-2009, Mobilicity Ltd

Abstract

In 2007, the US Transportation Security Administration agency said Boeing would use its Monte Carlo simulation model "to identify U.S. commercial aviation system vulnerabilities against a wide variety of attack scenarios." The Boeing and TSA team that crafted the model said that because of the Monte Carlo method's success, the agency is considering extending its use to the analysis of policy problems outside the realm of security.
Perplexed by the complexity implied by the above announcement, I started looking for simpler ways of achieving the TSA objectives. Here are some of the conclusions.

JEL classification: L93

Keywords: finance, transportation

Introduction

The challenges to value creation in dynamic networks (the "eco-systems") are significant and interrelated:

- (In)ability to **envision** the desired outcome: implementing change swiftly but with confidence requires a shared vision and its effective communication,
- **uncertainty**: the difficulties are compounded by the uncertainties. Traditional approaches to the planning rely for their success on accurate predictions of the future,
- (In)ability to create and maintain **momentum**: ties linking the eco-system's participants are increasingly fluid. Conventional governance arrangements intended to steer your changes are not applicable.

Action-Oriented Enterprise

A SWIFT JOURNEY FROM A SINGLE SCENARIO VIA MULTIPLE SCENARIOS TO THE SYNTHESIS FOR ACTION

I briefly summarise very specific and systematic improvements to the ways stakeholders can carefully plan and then decisively act ahead of high impact events (desirable or not). These improvements do not make up just another

'method' but, instead, constitute a comprehensive 'Toolbox', with some of the 'tools' in atypical roles.

The approach is hard to implement only in that it requires understanding of a number of 'tools'; the real difficulty is inherent in the problem we are trying to solve. I have observed that even the most renowned generalists have not managed to cover planning under low levels of predictability in its entirety!

Insuring against *probable* high impact events (e.g. current 'credit crunch') has been, at best, very difficult and, at worst, undesirable: in a 1939 letter, J.von Neumann wrote: "I refuse to accept, however, the stupidity of stock exchange boys as an explanation of the trend in stocks". Therefore, the Toolbox contains compelling techniques for establishing a rigorous governance framework. (For example, the emerging dominance of the 'universal' banking model requires a judicious management of regulated versus unregulated business lines).

The importance of such a governance framework is in being able to approve – in an objective manner - the plans for action well ahead of high impact events.

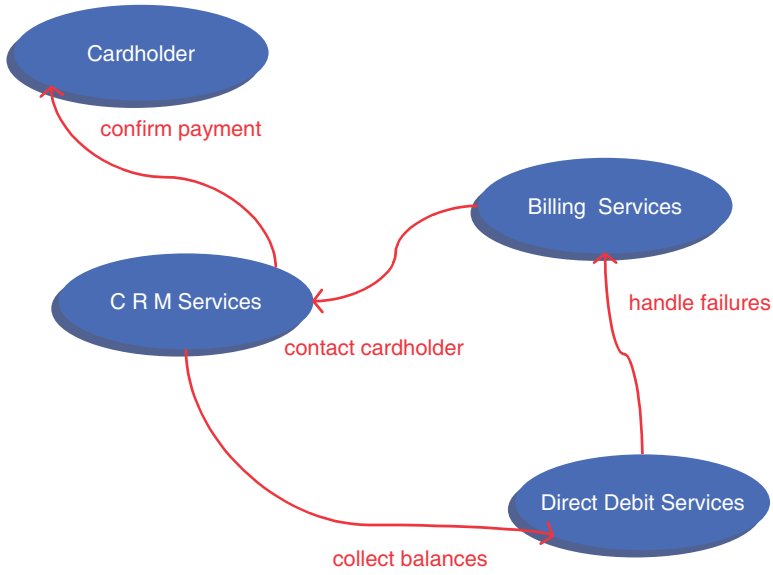
The traditional planning methods are based on *the belief* that external events and internal actions can be predicted 'sufficiently' accurately and, thereafter, useful plans-for-future drawn up.

What if predicting the future turns out to be much, much harder than we believe ? According to D.Deutsch, it is ".. impossible to extrapolate observations unless one has already placed them within an explanatory framework. For example, in order to 'induce' its false prediction, B.Russell's chicken must first have had in mind a false explanation of the farmer's behaviour."

Scenario Planning (SP) already improves *the reality* in some Industries, by allowing for multiple alternatives to the single prediction. Conventionally, SP is used as a form of Risk Management (RM). It frequently lacks substance. Experiences of Shell prove the most used SP technique is brainstorming. Apparently, there is very little planning: too much reliance on 'shallow' making up of scenarios (almost as if uncertainty requires fewer skills and precision than 'certainty'), and insufficient follow-through to get right actions formulated and initiated. **Worse still, SP very rarely involves a synthesis of results of any follow-throughs; i.e. individual conclusions are not being combined into a coherent picture, an "action map". This is where the greatest loss of opportunity occurs.**

Our improvements can be summarised as providing the stakeholders with a Toolbox to synthesise the follow-throughs from SP. SP will immensely benefit from the notion of business-oriented service architecture (BOSA, a business 'counterpart' of SOA, service-oriented architecture now prevalent in IT): we view an enterprise as a network of internal and external business services that require an objective method of prioritising and allocating capital. Governments and regulators are increasingly powerful contributors to such an eco-system. Remember that within a matter of months we have gone from a system where

central banks acted as a lender of last resort to one where central banks are the main provider of liquidity to all banks. Furthermore, governments and regulators have the historical data they try to use to influence the future.
BOSA / SOA can be an important tool in aligning business changes, management responsibilities and IT programmes; it is rigorous but intuitive. It gives stakeholders the expressive power to communicate more precisely in order to synthesise and act, swiftly but with confidence. In whatever we do, including any improvements to the governance arrangements, we first precisely design service interactions. Thus swiftly visualising the essential business scope and pinpointing problem areas within it. Here is an example of a BOSA we developed for an innovative credit card issuer. The Cardholder uses her/his mobile phone in order to confirm that an electronic Direct Debit payment may take place, thus retaining a level of control:



Arrows point to the service providers; thus unambiguously conveying responsibilities in the eco-system, .e.g. Direct Debit Services collect balances, Cardholders confirm payments, etc. Contrast that clarity with the following extract from the parliamentary investigation into the collapse of Barings Bank:
6.86 H. told us that responsibility for reconciliation was:

"very unclear. You could say that it was a finance function responsibility; you could say that it was a Futures and Options Settlements responsibility; you could say it was a Treasury responsibility...

6.87 B. told us that in his opinion the:

"responsibility for reconciliation lay ... I would have expected it to be in Singapore rather than in London. As between the treasury desk and the settlements desk in London, I do not have a view as to…"

Business priorities change and therefore your risks will vary. SP requires an effective RM: SP practitioners should plan to effectively compete under each of the scenarios; they should repeatedly answer the question "If I knew the future were going to turn out like this, what would my risk-adjusted response be?"

The goal is not to respond to uncertainty by merely replacing one loose prediction with several in-depth studies. Rather, the range of scenarios serves to judiciously map out "the space within which the future(s) might fall". Easier said than done… But it needs to be done to enable a meaningful synthesis for action, as follows:

A crucial outcome of applying business services concepts must be a flexible BOSA that would enable stakeholders to act decisively now, to cost-effectively prepare for uncertainty. BOSA will also allow them to respond swiftly later, every time when the expected or unexpected events occur, because they will be well prepared 'all' the time.

The 'required' BOSA – derived through a comparison of risk-adjusted business plans - will identify the core and contingent services. This step is not entirely unlike the attempts by L.Wilkinson. In "How to Build Scenarios" he says: "Some of the *decisions* [italics by R.Erl] we make today will make sense across 'all' of the futures. Others will make sense only in one or two. Once we've identified those implications that work in all of the scenarios, we get on with them in the confidence that we're making better, more robust plans".

However, I have very serious doubts about the precision, and therefore usefulness, of 'decisions' for the purpose of the synthesis for action. Uncertainty requires more skills and precision than 'certainty'. Wilkinson and the textbooks have never recognised the vital 'glue' provided by:

- the notion of business services, that makes comparison of plans truly possible, and
- risk-adjusted i.e. credible individual business plans.

Thereafter, the core services – those appearing in a majority of plans - must be acquired whatever shape the future might take. This means that stakeholders have to act now regardless of uncertainties.

The contingent services - those appearing in a minority of plans - can be structured and pre-approved now. Then they could be managed as real options. Thus giving stakeholders a head start if and when it becomes imperative. This means that stakeholders can act now in spite of uncertainty, so that they can later respond swiftly.

Structuring a real option would hedge the strategic risk of not following the BOSA implied by a scenario. Exercising a real option would alter the 'current' BOSA to the 'next' BOSA that will include the contingent service(s) arising from the real option.

I have not included examples showing that from a small number of scenarios a much bigger number of altered states can be derived and thereafter be supported with contingent services.

Conclusions

Uncertainty is an opportunity for those who are well prepared. In unpredictable situations it is the speed of response - utilising 'pre-approved' solutions - that can confer a strong competitive advantage; management reaction can never match proactive action towards an uncertain future. In other words, the stakeholders' Toolbox must enable them to align disruptive business changes, governance arrangements, and management responsibilities for risks to operations or programmes of work.

I refer to the Toolbox as being 'action-oriented' because we have a focus on acting now, based on plans for effective responses to ever changing and unpredictable political, environmental, market or regulatory conditions:

- actions you have to take now regarding your core services, and
- actions you should take now as a means of preparing your contingent services.

However, an effective identification of core and contingent services is only possible if the individual plans are rigorous *and* based on an objective approach to risk. Conversely, the traditional risk methods *may* add value once the "future space" has been judiciously broken down into scenarios that are, taken collectively, representative of the future(s).

An important by-product of our approach can be derived from articulation of typical service aggregations - "business service patterns" (e.g. TSA 'policies'). They can offer both efficient and consistent service-based answers to similar questions that may appear in several business plans.

There exist remarkable similarities between the current "sharp discontinuities", for example in airline industry and banking, and the shocks in computing industry over the last two decades. Whilst some Industries have eventually found appropriate business models (e.g. "open architecture" in computing), a typical enterprise would miss major opportunities by relying solely on the corrective strength of regulators and/or competitive market forces: a flexible business architecture can be created, in many Industries, in such a way that it articulates a way forward around core services and affordable contingent services, thus commoditising and leveraging the latter. This requires less 'stupidity of stock exchange boys', and a *very* careful dose of internal oversight and external regulation.

According to J.Wisbey, CEO of Lombard Risk "we now face calls for a new world order and this will be determined largely by politicians and policy makers. The real danger is that there will be a backlash against bankers for causing the whole crisis when in reality politicians and regulators must share

some of the blame. Individual institutions can never have the same ability to gather information as the authorities in a country who gather information from all banks and market participants. Governments and regulators are powerful. They have access to information, they can guide and if necessary they can arm-twist."

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ARBITRATION AND SPORT

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Abstract

Disputes in sport and modes of their solution and harmonization with legislation have imposed more problems than may have been expected at the first glance. Throughout history, as well as today, there have been various inconcilliable differences in opinions in the relation between sport and law. Only recently a completely new and young branch of law has started to develop: Sport Law. Sport law has a long and difficult way ahead of it on its way to further improvement, both in the sphere of legal theory and in the organization of its bodies and in the implementation of their decisions. In harmonizing decisions in its international sphere and in implementing the largely distraught laws, CAS is a pioneer in organizing sport law and finding solutions in this new and specific branch of law. This paper deals with the connection of for a long time irreconcilable concepts of sport and law through arbitration as a bridge bringing together the differences but also the needs of modern sports; the paper also brings a review of the institution that has emerged from this connection.

JEL classification: K12, K20

Keywords: sport, law, arbitration, CAS

1. INTRODUCTION

Arbitrations, as non-governmental institutions resolving disputes between the parties, have existed since the earliest days and are, in fact, forerunners of state judiciary and state courts that we know today.[1] This form of resolving problems is already found in the Greek and Roman laws. It has been described in numerous legal writings of that period, which indicates itself that arbitration was highly esteemed.[2] With the emerging of state courts and their organization, arbitrations do not disappear but coexist with the courts. They have been less used in certain periods, but they have never completely disappeared – they only gave precedence to the newly emerged institutes, and this, in fact, only proves that arbitrations are actually the beginning, the source from which the judiciary, as we know it today, has developed. Arbitrations had their renaissance after the

[1] Bordaš-Varadi-Knežević:Međunarodno Privatno Pravo, Novi Sad, str.581

[2] «When parties are sure in they rights they reither go in front of the judge than arbitrator....»Lucius Annaeus Seneca: Dialogue; W. Heineman, Harvard University Press, 1972. p.120

World War II[3] because of the fast development of international relations of commercial nature and because arbitration is, for its many advantages, suitable for resolving disputes that may arise in these relations.
If we view sport as a whole, it is today a very important form of social behavior, a process that has imbued all modern societies in all their segments. Sport as an activity is inconceivable without a market, which places it into the sphere of market and economic relations. Sport has penetrated all pores of life, from culture to health care, to politics and economy, and thus also to law.[4] Sport is nowadays characterized by specific phenomena: mass sports that recognize no borders, and a real symbyosis between economy and sport.[5] It is precisely this synthesis where the omnipresent struggle for domination takes place between economy and sports. Sport crosses state borders and is inevitably connected with large amounts of money, and because of that the participants that are in any way involved in it become demanding parties with their particular interests in solving disputes.

2. NEED FOR SPORT LAW

From the very beginning there was the question of why sport needs its own law at all, i.e. why can sport not resolve its problems within the state judiciary system? There are no impediments for sport disputes to be brought before the state judiciary; however, very few sport organizations and athletes are ready to do so. The reason for that is their fear that if they bring their disputes before state courts, one or the other sport principle or decisions arising from the rules of a particular sport would be violated in passing the court judgment. Throughout their development, sports have developed their own independent rules of conduct that, although unlawful or contrary to the rules in the world outside sports, are not unlawful in sport; in fact, they are parts of particular sport branches.[6]
In the history of the Dutch Royal Football Association there is an example of viewers interfering with the sport event, which actually marked a turning point in the realization that special sport jurisdiction is really necessary. In January of 1927, at a common football match, one of the defense players was pushing an offensive player of the opposite team from his back. This would not have been anything unusual had the whole incident not been observed by a police sergeant

[3] Today in world is phenomena of creating a whole new number of institutional arbitation courts so on this day we have around 100 abitrage courts in over the 50 States in the world....ITC; HGK: Arbitraža i alternativno rješavanje sporova, 2003. p.55.
[4] M. Bartoluci: Ekonomika i manegment sporta, HAZU, FFK, 1997.,p.5.
[5] K.Džerba-M.Serdarušić: Sport i novac,1995., p.1.
[6] If one hockie player hit another during the game it is not crime act but hiting on the street by two ordinary people represent a crime act wich need to be sanctioned by the law...Remarks Remarks of PhD. H.T.Staveren,Professor on Vrie Law University in Amsterdam, the Hague's 750th Anniversary International Law Conference, 3.July 1998, loc. cit. n.1,at p.231.

who was watching the match and who misunderstood this pushing between two rivals for an assault, and thus for a criminal offense. He interfered and pulled the player who was pushing his opponent out of the game to write a report against him. Of course, after this incident, the match could not be continued.[7] The incident became such a big issue that a letter was even sent to the Minister of the Interior. Much more important, however, is the fact that the incident lead to the realization that any interference into a sport event from the outside presents an aggravating circumstance that harms the game itself and sport as a whole.

Through the process of globalization states and societies enter ever greater business and social interactions, and they reach their final goals by joining international associations or unions. For modern societies such transactions and relations that cross the borders of individual states are especially important. In keeping up with time, sport is also becoming ever more present, and its role becomes more and more important throughout the world, and one has the full right to say that sport is becoming supranational with a constantly growing number of people involved in it. It is therefore inevitable that in sport, too, especially having in mind its internationality, there will be disputes that may become complicated to resolve and that, once resolved, may even be seen as a special kind of precedents.[8] This is where sports and law meet. Sport has its own "law", but if, or rather when it comes to a dispute, it must be submitted to state law for resolution. At this point problems arise because it was impossible for a long time to put the symbol of equation between sport and law in the sense of resolving sport disputes, without at the same time violating one or the other principle of either law of sport because of potential discrepancies between the rules of law and those of sport.

3. COURT OF ARBITRATRATION FOR SPORT

3.1. HISTORY

At the beginning of the 1980s, there was a huge number of international sports-related disputes and the absence of any independent authority specialising in sports problems and authorised to pronounce binding decisions led the top sports organisations to reflect on the question of sports dispute resolution.

In 1981, soon after his election as IOC President, H.E. Juan Antonio Samaranch had the idea of creating a specific sport jurisdiction. That same year at the IOC Session held in Rome, IOC member H.E. Judge Kéba Mbaye, who was then a judge at the International Court of Justice in The Hague, chaired a working

[7] A. Wassing: « De wachtmeester van Zwolle», Het tuchtrecht van het publiekvoetbal, 1978. ; str. 81-84

[8] See Bosman case or «Bosman rules» at EC Court 12 December 1974, NJ(1975)p.148

group tasked with preparing the statutes of what would quickly become the "Court of Arbitration for Sport". [9]

The idea of creating an arbitral jurisdiction devoted to resolving disputes directly or indirectly related to sport had thus firmly been launched. Reasons for setting up such an arbitral institution was the need to create a specialised authority capable of settling international disputes and offering a flexible, quick and inexpensive procedure. In 1983, the IOC officially ratified the statutes of the CAS, which came into force on 30 June 1984. The Court of Arbitration for Sport became operational as of that time, under the leadership of President Mbaye and the Secretary General, Mr Gilbert Schwaar.[10]

The CAS Statute of 1984 was accompanied by a set of procedural Regulations. Both were modified slightly in 1990. Under these rules, the CAS was composed of 60 members appointed by the IOC, the International Federations (IF), the National Olympic Committees (NOC) and the IOC President (15 members each). The IOC President had to choose those 15 members from outside the other three groups. The CAS Statute could be modified only by the IOC Session, at the proposal of the IOC Executive Board. In 1991, the CAS published a Guide to arbitration which included several model arbitration clauses. Among these was one for inclusion in the statutes or regulations of sports federations or clubs.[11] This clause prefigured the subsequent creation of special rules to settle disputes related to decisions taken by sports federations or associations (appeals procedure).[12] This was the starting point for several "appeals" procedures even if, in formal terms, such a procedure did not yet exist.[13]

In February 1992, a horse rider named Elmar Gundel lodged an appeal for arbitration with the CAS on the basis of the arbitration clause in the FEI statutes, challenging a decision pronounced by the federation. This decision, which followed a horse doping case, disqualified the rider, and imposed a suspension and fine upon him. The award rendered by the CAS on 15 October 1992 found partly in favour of the rider, the suspension was reduced from three

[9] www.TAS-CAS.com last visit at 23.3.2009.

[10] ibid

[11] This clause read as follows: ***"Any dispute arising from the present Statutes and Regulations of the ... Federation which cannot be settled amicably shall be settled finally by a tribunal composed in accordance with the Statute and Regulations of the Court of Arbitration for Sport to the exclusion of any recourse to the ordinary courts. The parties undertake to comply with the said Statute and Regulations, and to accept in good faith the award rendered and in no way hinder its execution."***

[12] The International Equestrian Federation (FEI) was the first sports body to adopt this clause. source at www.tas-cas.com last visit at 23.3.2009.

[13] Up to 1991-1992, a wide variety of cases were submitted to the CAS involving issues such as the nationality of athletes and contracts concerning employment, television rights, sponsorship and licensing... source at www.tas-cas.com last visit at 23.3.2009.

months to one month.[14] Unsatisfated with the CAS decision, Elmar Gundel filed a public law appeal with the Swiss Federal Tribunal. The appellant primarily disputed the validity of the award, which he claimed was rendered by a court which did not meet the conditions of impartiality and independence needed to be considered as a proper arbitration court.
In its judgement of 15 March 1993[15] the Federal Tribunal (FT) recognised the CAS as a true court of arbitration. The supreme court noted, inter alia, that the CAS was not an organ of the FEI, that it did not receive instructions from this federation and retained sufficient personal autonomy with regard to it. However, in its judgement the FT drew attention to the numerous links which existed between the CAS and the IOC: the fact that the CAS was financed almost exclusively by the IOC; the fact that the IOC was competent to modify the CAS Statute; and the considerable power given to the IOC and its President to appoint the members of the CAS. In the view of the FT, such links would have been sufficient seriously to call into question the independence of the CAS in the event of the IOC's being a party to proceedings before it. The FT's message was thus perfectly clear: the CAS had to be made more independent of the IOC both organisationally and financially.
These decision made an idea or need for restructuration of CAS. And so there CAS was rectructurataed on two separate bodies: Court of arbitration for sport (hereinafter: CAS) and Inernational Councilof Arbitration for Sport (hereinafter: ICAS).
Other major changes included the creation of two arbitration divisions (Ordinary Arbitration Division and Appeals Arbitration Division) in order to make a clear distinction between disputes of sole instance and those arising from a decision taken by a sports body. Finally, the CAS reforms were definitively enshrined in a "Code of Sports-related Arbitration"(hereinafter:Code), which came into force on 22 November 1994.[16]

3.2. ORGANIZATION AND STRUCTURE OF THE COURT

The creation of the ICAS and the new structure of the CAS were approved in Paris, on 22 June 1994, with the signing of the "Agreement concerning the constitution of the International Council of Arbitration for Sport", known as the "Paris Agreement". This was signed by the highest authorities representing the sports world, viz. the presidents of the IOC, the Association of Summer Olympic International Federations (ASOIF), the Association of International Winter Sports Federations (AIWF) and the The Association of National

[14] See arbitration CAS 92/63 G. v/ FEI in Digest of CAS Awards 1986-1998.
[15] Published in the Recueil Officiel des Arrêts du Tribunal Fédéral [Official Digest of Federal Tribunal Judgements] 119 II 271
[16] was revised on 1 January 2004.

Olympic Committees (ANOC).[17] Agreement also determined the appointment of the initial members of the ICAS and the funding of the CAS.[18]
But the major and most important change was since the Paris Agreement was signed, all Olympic International Federations and many National Olympic Committees have recognised the jurisdiction of the Court of Arbitration for Sport and included in their statutes an arbitration clause referring disputes to the CAS. Also, since the World Conference on Doping in Sport, held in March 2003, the Olympic Movement and numerous governments have promulgated the World Anti-Doping Code, Article 13 of which states that the CAS is the appeals body for all international doping-related disputes.
Since 22 November 1994, the Code of Sports-related Arbitration (hereinafter: the Code) has governed the organisation and arbitration procedures of the CAS. The Code was revised in 2003 in order to incorporate certain long-established principles of CAS case-law or practices consistently followed by the arbitrators and the Court Office. The 69-article Code is divided into two parts: the Statutes of bodies working for the settlement of sports-related disputes (articles S1 to S26), and the Procedural Rules (articles R27 to R69).[19] Since 1999, the Code has also contained a set of mediation rules instituting a non-binding, informal procedure which offers parties the option of negotiating, with the help of a mediator, an agreement to settle their dispute.
The Code thus establishes rules for four distinct procedures:

- the ordinary arbitration procedure;
- the appeals arbitration procedure;
- the advisory procedure, which is non-contentious and allows certain sports bodies to seek advisory opinions from the CAS;
- the mediation procedure.

The ICAS is the supreme organ of the CAS. The main task of the ICAS is to safeguard the independence of the CAS and the rights of the parties. To this end, it looks after the administration and financing of the CAS. The ICAS is composed of 20 members who must all be high-level jurists well-acquainted with the issues of arbitration and sports law.
Upon their appointment, the ICAS members must sign a declaration undertaking to exercise their function in a personal capacity, with total

[17] The preamble of the Agreement states that *:"**with the aim of facilitating the resolution of disputes in the field of sport, an arbitration institution entitled the "Court of Arbitration for Sport" (hereinafter the CAS) has been created, and that, with the aim of ensuring the protection of the rights of the parties before the CAS and the absolute independence of this institution, the parties have decided by mutual agreement to create a Foundation for international sports-related arbitration, called the "International Council of Arbitration for Sport" (hereinafter the ICAS), under the aegis of which the CAS will henceforth be placed."***
[18] In 2003, the ICAS/CAS budget totalled CHF 7,3 million..source at www. TAS-CAS.com last visit at 2.4.2009.
[19] See Code at www.TAS-CAS-arbitration-code.mht

objectivity and independence. The ICAS exercises several functions.[20] It does so either itself, or through the intermediary of its Board, made up of the ICAS President and two vice-presidents, plus the two presidents of the CAS Divisions. Any changes to the Code of Sports-related Arbitration can be decided only by a full meeting of the ICAS and, more specifically, a majority of two-thirds of its members. The ICAS elects its own President, who is also the CAS President, plus its two Vice-presidents, the President of the Ordinary Arbitration Division, the President of the Appeals Arbitration Division and the deputies of these divisions. It also appoints the CAS arbitrators and approves the budget and accounts of the CAS.

The CAS performs its functions through the intermediary of arbitrators, of whom there are at least 150, with the aid of its court office, which is headed by the Secretary General. One of the major new features following the reform of the CAS was the creation of two divisions: an "Ordinary Arbitration Division", for sole-instance disputes submitted to the CAS, and an "Appeals Arbitration Division", for disputes resulting from final-instance decisions taken by sports organisations. Each division is headed by a president. CAS is corporated of 275 arbitrators elected from 87 states world wide.[21] The Code stipulates that the ICAS must call upon "personalities with a legal training and who possess recognised competence with regard to sport". The appointment of arbitrators follows more-or-less the same pattern as for the ICAS members: the CAS arbitrators are appointed at the proposal of the IOC, the IFs and the NOCs. The ICAS also appoints arbitrators "with a view to safeguarding the interests of the athletes", as well as arbitrators chosen from among personalities independent of sports organisations.[22] Even when the CAS arbitrators are proposed by sports organisations, the fact remains that they must carry out their functions with total objectivity and independence.

The arbitrators are not attached to a particular CAS division, and can sit on CAS panels which are composed either of a single arbitrator or of three. All arbitrators are bound by the duty of confidentiality and may not reveal any information connected with the parties, the dispute or the proceedings themselves. As of 1998. the CAS had decided over 200 cases, resulting in more than 50 arbitral awards, 10 advisory opinions and «many amicable settlements».[23]

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[20] which are listed under article S6 of the Code

[21] 2007 figure and they are appointed by the ICAS for a renewable mandatory of four years...source at www. TAS-CAS.com last visit at 3.4. 2009.

[22] See article S14 of the Code

[23] Remarks of M. Reeb, the Hague's 750th Anniversary International Law Conference, 3.July 1998, loc. cit. n.1,at p.203.
Also at www. stats2007.pdf- last visit at 24.3.2009.

STATISTIQUES / STATISTICS

TABLE 1

Tableau répertoriant les affaires soumises au TAS depuis sa création. L'année se rapporte à la date d'enregistrement des demandes uniquement et non à celle de la publication des sentences ou avis consultatifs.

This table lists the cases submitted to the CAS since its creation. The year refers only to the date when the requests were filed, not when the awards or advisory opinions were published.

Année / Year	Demandes d'arbitrage enregistrées / Requests for arbitration filed	Demandes d'avis consultatif enregistrées / Requests for advisory opinions filed	Total	Demandes d'arbitrage ayant abouti à une sentence / Requests for arbitration leading to an award	Demandes d'avis consultatif ayant abouti à un avis / Requests for advisory opinions leading to an opinion	Total
1986	1	1	2	1	1	2
1987	5	3	8	2	1	3
1988	3	9	12	0	1	1
1989	5	4	9	1	0	1
1990	7	6	13	1	0	1
1991	13	5	18	4	1	5
1992	19	6	25	12	0	12
1993	13	14	27	6	1	7
1994	10	7	17	5	1	6
1995	10	3	13	6	2	8
1996	20	1	21	16	0	16
1997	18	2	20	10	0	10
1998	42	3	45	33	2	35
1999	32	1	33	21	1	22
2000	75	1	76	60	1	61
2001	42	0	42	28	0	28
2002	83	3	86	70	3	73
2003	107	2	109	82	1	83
2004	271	0	271	178	0	178
2005	194	4	198	132	3	135
2006	204	0	204	119	0	119
2007	252	0	252	62	0	62
Total	**1426**	**75**	**1501**	**849**	**19**	**868**

Remarques:
1) le nombre de demandes d'avis consultatif a fortement baissé à partir de 1995 en raison de l'entrée en vigueur du Code de l'arbitrage en matière de sport qui pose des critères plus stricts quant à l'accès à la procédure consultative
2) le tableau englobe les affaires soumises aux chambres ad hoc du TAS.

Comments:
1) The number of advisory opinion requests dropped sharply as of 1995, when the Code of sports-related arbitration came into force setting stricter criteria for to access to the advisory procedure.
2) The table includes the cases submitted to the CAS ad hoc divisions.

In 1996, the ICAS created two permanent decentralised offices, the first in Sydney in Australia, and the second in Denver, in the United States of America. In December 1999, the Denver office was transferred to New York. Creating them was just to easier the access, for parties domiciled in Oceania and North America, to the CAS.

Later in 1996, the ICAS created a CAS ad hoc division with the task of settling finally and within a 24-hour time-limit any disputes arising during the Olympic Games in Atlanta. This ad hoc division was composed of two co-presidents and 12 arbitrators who were in the Olympic city throughout the Games and a special procedure was created for the occasion, which was simple, flexible and free of charge. A total of six cases were solved by CAS ad hoc division in Atlanta! Since 1996, ad hoc divisions have been created for each edition of the Olympic Summer and Winter Games. Ad hoc divisions were also set up for the Commonwealth Games since 1998, for the UEFA European Championship since 2000 and for the FIFA World Cup in 2006. The success of these ad hoc divisions has played a large part in making the Court of Arbitration for Sport known among athletes, sports organisations and the media all over the world.

The new structure of the ICAS, and CAS generaly speaking, have been put to the test in 2000, when a Romanian gymnast, Andreea Raducan, who had been stripped of one of the gold medals she had won at the Sydney Olympic Games a few weeks earlier, appealed to the Swiss Federal Tribunal against a CAS award. However, the Federal Tribunal decided to dismiss the appeal without tackling

the question of the independence of the restructured CAS. It was not done until 27 May 2003 that the Federal Tribunal assessed the Court's independence in detail, having heard an appeal by two Russian cross-country skiers, Larissa Lazutina and Olga Danilova, against a CAS award disqualifying them from an event at the Olympic Winter Games in Salt Lake City. In a remarkably detailed and exhaustive judgement, the Federal Tribunal dissected the current organisation and structure of the ICAS and CAS, concluding that the CAS was not "the vassal of the IOC" and was sufficiently independent of it, as it was of all other parties that called upon its services, for decisions it made in cases involving the IOC to be considered as true awards, comparable to the judgements of a State tribunal. The Federal Tribunal also noted the widespread recognition of the CAS amongst the international sporting community, showing that the CAS was meeting a real need.[24]

3.3. CAS PROCEDURES

Code determinate arbitrability ratione materie or it is clearly said; disputes which can be submitted to CAS are any disputes directly or indirectly linked to sport. [25] Article R27 of the Code stipulates that the CAS has jurisdiction solely to rule on disputes connected with sport. Since its creation, the CAS has never declared itself to lack jurisdiction on the grounds of a dispute's not being related to sport.[26] If we talk about ratione personae or who can refer a case to the CAS opinion is, that it could be any individual or legal entity with with capacity to act may have recourse to the services of the CAS.[27]

For a dispute to be submitted to arbitration by the CAS, the parties must agree to this in writing. Such agreement may be on a one-off basis or appear in a contract or the statutes or regulations of a sports organization.

Parties may agree in advance to submit any future dispute to arbitration by the CAS, or they can agree to have recourse to the CAS after a dispute has arisen. Generally speaking, a dispute may be submitted to the Court of Arbitration for Sport only if there is an arbitration agreement between the parties which specifies recourse to the CAS.[28]

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[24] On this subject, the Federal Tribunal added: ***"There appears to be no viable alternative to this institution, which can resolve international sports-related disputes quickly and inexpensively. (…) The CAS, with its current structure, can undoubtedly be improved. (…) Having gradually built up the trust of the sporting world, this institution which is now widely recognised and which will soon celebrate its twentieth birthday, remains one of the principal mainstays of organised sport".***

[25] See article R27: «.....generally speaking, any activity related or connected to sport...»op.cit

[26] See in this regard the award delivered in the arbitration TAS 92/81 in the «***Digest of CAS Awards 1986-1998***.»

[27] These include athletes, clubs, sports federations, organisers of sports events, sponsors or television companies.

[28] * Example of Arbitration clause to be inserted in a contract:

In principle, two types of dispute may be submitted to the CAS: those of a commercial nature, and those of a disciplinary nature.
The first category essentially involves disputes relating to the execution of contracts, such as those relating to sponsorship, the sale of television rights, the staging of sports events, player transfers and relations between players or coaches and clubs and/or agents (employment contracts and agency contracts). Disputes relating to civil liability issues also come under this category (e.g. an accident to an athlete during a sports competition). These so-called commercial disputes are handled by the CAS acting as a court of sole instance.
Disciplinary cases represent the second group of disputes submitted to the CAS, of which a large number are doping-related. In addition to doping cases, the CAS is called upon to rule on various disciplinary cases (violence on the field of play, abuse of a referee).
The major function of CAS is resolving legal disputes in the field of sport through arbitration. It does this pronouncing arbitral awards that have the same enforceability as judgements of ordinary courts. CAS procedures are to solve such disciplinary cases are generally dealt with in the first instance by the competent sports authorities, and subsequently become the subject of an appeal to the CAS, which then acts as a court of last instance. There is also a consultation procedure which allows certain organisations to request an advisory opinion from the CAS, in the absence of any dispute, on any legal

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"Any dispute arising from or related to the present contract will be submitted exclusively to the Court of Arbitration for Sport in Lausanne, Switzerland, and resolved definitively in accordance with the Code of sports-related arbitration."

Optional explanatory phrases:

"The Panel will consist of one [or three] arbitrator(s)."

"The language of the arbitration will be..."

* Example of Arbitration agreement concluded after the dispute has arisen

1. [Brief description of the dispute]
2. The dispute will be submitted exclusively to the Court of Arbitration for Sport in Lausanne, Switzerland, and
settled definitively in accordance with the Code of sports-related arbitration.
3. * Alternative 1

The Panel set in operation by the Court of Arbitration for Sport will consist of a sole arbitrator designated by the President of the CAS Division concerned.

* Alternative 2

The Panel set in operation by the Court of Arbitration for Sport will consist of three arbitrators. Each party designates the following arbitrator :

- Claimant: Mr/Mrs ... [insert the name of a person included on the list of CAS arbitrators (see Annex I)];
- Defendant: Mr/Mrs ... [insert the name of a person included on the list of CAS arbitrators (see Annex I)];

These two arbitrators will designate the President of the Panel within 30 days following the signature of this agreement. If no agreement is reached within this time limit, the President of the Division concerned will designate the President of the Panel."

Source at www. TAS-CAS.com last visited at 16.4.2009.

issue concerning the practice or development of sport or any activity relating to sport. The advisory opinion does not constitute an award and is not binding. Lastly, It can also help parties solve their disputes on an amicable basis through mediation, when this procedure is allowed.[29]

The advantages of CAS arbitral procedure have been described as « confidentiality, specialization of the arbitrators, flexibility, and simplicity of the procedures, speed, reduces costs and international effectiveness of the arbitration award».[30]

CAS like institucional arbitrage for sport related disputes in it's Code regulate application law on the merits of dispute. In the context of ordinary arbitration, the parties are free to agree on the law applicable to the merits of the dispute. Failing such agreement, Swiss law applies. In the context of the appeals procedure, the arbitrators rule on the basis of the regulations of the body concerned by the appeal and, subsidiarily, the law of the country in which the body is domiciled.

An award pronounced by the CAS is final and binding on the parties from the moment it is communicated. It may be enforced in accordance with the New York Convention on the recognition and enforcement of arbitral awards, which more than 125 countries have signed.[31]

Judicial recourse to the Swiss Federal Tribunal is allowed on a very limited number of grounds, such as lack of jurisdiction, violation of elementary procedural rules (e.g. violation of the right to a fair hearing) or incompatibility with public policy.[32]

As it existing just for 17 years CAS take very important place in international sport also as in world arbitrage law. In time when number of sport disputes is in constantly progress CAS need to continue it's mission resolving sport related disputes and contribute prosperity of sport and law.

4. CONCLUSION

Since the first Olympics of ancient times to the present day sport, as a human activity, has undergone great changes both regarding the kinds of sports and the rules of competition in particular sport disciplines. Such changes in sport competitions have been conditioned by various circumstances, but the greatest change was the professionalization of sports with enormous amounts of money flowing into all branches of sport today. Most simply said, sport today is big business with many interested parties and with a lot of money involved.

[29] www.TAS-CAS.com last visit at 7.4.2009.
[30] Remarks of M. Reeb, the Hague's 750th Anniversary International Law Conference, 3. July 1998.,loc.cit. n.1.at p.200.
[31] Croatia also has signed this convention; see at «NN MU» 4-94
[32] See Art. 190 of Switzerland's Federal Code on Private International Law

Law as the human need for the protection of all human values and of the society as a whole has also developed from very simple solutions to the present day legal standards. To some extent, one could even say that law resembles sport, especially regarding their common desire to achieve the best possible results. This comparison inevitably implies that both law and sport must have rules set in advance for the satisfaction of their needs and goals. Participants at various sport events and individuals submitted to a certain rule or law face the same problem: how and to what extent do they obey these rules? Problems arise when rules of law or sport are being violated or when disputes resulting from these violations are being resolved.

Sport and law have different rules for the same or similar events, and thus they resolve the same situations differently. Such dual legislation and dual jurisdiction of various organs, including the consequences of dual solutions of the same case largely contribute to legal insecurity. Great numbers of athletes, large amounts of money, great interest in sports and at the same time insecurity and uncertainty in resolving disputes that inevitably arise in them have made it necessary to find a solution for these problems.

Since the beginnings of both law and sport, arbitration has always been present in the shaddow, as a form of help for the law and for the state courts as executive bodies. Arbitration has come up as salvation in resolving both disputes in sports and disputes in law because it has brought together and reconciled two different views of the same situation. It can be concluded without any doubt that today arbitration is recognized as the best choice for resolving sports disputes.

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Business Administration and Business Economics • Marketing • Accounting

FINANCIAL INSTABILITY PREDICTION IN MANUFACTURING AND SERVICE INDUSTRY

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Abstract

This article presents an attempt to derive models for financial instability prediction in manufacturing and service industry especially suitable for transitional environments. Research results indicate that the most important ratios – independent variables that discriminate financially stable from unstable companies consist of liquidity, solvency and profitability ratios. Financial instability models have high degree of diagnostic and prognostic power what was statistically validated on the sample units. Aforementioned predictive ability makes these models appropriate tools for predicting the degree of financial stability of company's business partners as well as useful instrument in estimating the appropriateness of going concern assumption for company itself. Financial instability models can be used, not only as instrument for choosing adequate business partners, but also as a tool for estimating the level and trends of financial stability in manufacturing and service industry on macro level presenting in this way instrument for macro policy decision makers.

JEL classification: G33, O16

Keywords: Financial crisis, bankruptcy, loss above equity, financial instability prediction models, discriminant analysis, manufacturing and service industry

1. INTRODUCTION

Financial instability is immanent to modern economies where business entities are operating in rapidly changeable and instable environment. In order to handle with rising level of different business risks that are often resulting in financial instability and sometimes in business liquidation, researcher are trying to develop quantitative models able to predict financial instability. The modern history of business' financial instability prediction started in the second half of last century in the United States with usage of univariate statistical methods (Beawer, 1966, 71). Altman, the most known researcher in this field introduced the implementation of multivariate statistics in this field of financial analysis and derived the Z-score, widely known bankruptcy prediction model (Altman, 1968, 594). The other much known researchers in this area are Deakin (Deakin,

1972), Edminster (Edminster, 1972) and Ohlson (Ohlson, 1980) who tried to estimate the models suitable for different branches and companies' sizes.
Most of the researches in this area were done in developed countries with long tradition of free market economy and stability of the legal system. In transitional environment like Croatia the institutions, the way they are working, and rules are quite different from developed countries, as well as basic values in the society as a whole, so simple application of models derived in developed countries is not adequate (Deverić, 2002, Škeljo, 2000). In this sense some authors like Belak & Aljinović Barać (Belak, Aljinović Barać, 2007, 18) and Novak & Crnković (Novak, Crnković, 2007) developed models applicable in transitional countries by using different criteria for discriminating financially stable from unstable companies. The research presented in further text is particular by criteria set for discriminating stable from unstable companies, sample design which is representing the structure of Croatian economy and quite long reporting period for data collected.

2. RESEARCH HYPOTHESYS AND METHODOLOGY

Scientific approach in estimating the financial instability include various steps that has to be done in order to get model that is based on scientifically research that employs appropriate scientific methods (Westgaard, 2005, 4).
The objective of the research performed was to carry out the financial instability prediction models for manufacturing and service industry. In this sense, at the very beginning, the further research hypothesis was set: Financial instability in manufacturing and service industry could be reasonably estimated in the two years period by using the combination of various financial ratios.
Different scientific methods were used in this research, but the central role was captured by statistical method known as multiple discriminant analysis (in the further text MDA). This statistical method represent a special type of regression analysis that identify the independent variables that best discriminate the sample units according to their selected characteristics that are dichotomous and it was found to be very useful technique for discriminating the financially stable from unstable companies. The result of MDA is discriminant function that consists of selected independent variables and discriminant coefficients.
Independent variables in research consist of 50 financial ratios that represent liquidity and solvency ratio, activity, profitability and investment ratios as well as ratio based on cash flow statement. On the other side of equation was dichotomous dependent variable which represents the state of financial stability of chosen company. Financially stable company had the value 1, while those unstable i.e. those who went bankrupt or disclosed loss above equity had the value 0.

3. EMPRICAL RESEARCH IN TRANSITIONAL ENVIRONMENT – CROATIAN CASE

The research results presented in this article are an attempt to derive models for financial instability prediction in manufacturing and service industry especially suitable for transitional environments where institutions, i.e. the way they are working, and rules are quite different from developed countries, as well as basic values in the society as a whole. Models were carried out as a result of scientific research among Croatian companies in period from 1996 to 2006.

3.1. Sample design

The starting point in the research was setting the research objective and hypothesis. In the second step, sample has to be designed in order to reach the conclusion that can be applied to whole population. Population consists of all active business entities in the Republic of Croatia. The sample was designed in order to represent, closely as possible, population having in mind limitation of research methodology for companies operating in particular branches like financial or public sector. These branches were not examined because the usage of specific financial ratios is typical for their analysis. The final sample consists of 110 business entities where 68 entities operated in manufacturing industry, which consist of manufacturing and construction, while 42 companies were doing business in service industry i.e. traffic, warehousing, communications, hotels and restaurants. In sample design the attention was given to companies' size as well, so the final sample represents the population according to the criterion of companies' size. The sample includes 55 financially stable and 55 financially unstable companies where those unstable were considered those that went bankrupt or had disclosed loss above equity. Table 1 shows the structure of final sample.

Table 1. Final sample structure

Activities	Size			Total
	Small	Medium	Big	
Manufacturing	19	26	23	**68**
Financially stable companies	10	11	12	**33**
Financially unstable companies	9	15	11	**35**
Service industry	7	17	18	**42**
Financially stable companies	4	8	10	**22**
Financially unstable companies	3	9	8	**20**
Total	**26**	**43**	**41**	**110**

Source: Author's calculation

After designing the sample according to companies' size and activities, in the next step the accounting data from financial statements has to be collected. The data were collected from the Financial agency data base as well as from publicly disclosed financial statements on Zagreb stock exchange. The information regards different positions from financial statements that are collected for the year before the company went bankrupt or disclosed loss above equity. On the other side the same data for the same period were collected for financially stable companies. In the situations where company that went bankrupt had loss above equity in the appropriate year, the data were collected for the year before the loss above equity was obtained. Accounting data were used for calculation of 50 financial ratios that were inputted in SPSS software used to perform MDA.

3.2. Financial instability model estimation for manufacturing companies

The subsample of manufacturing companies consists of 68 companies that were doing business in manufacturing and construction. 33 of these companies were financially stable while other 35 of them was treated financially unstable according to fact that they went bankrupt or disclosed loss above equity. Financial ratios calculated for these companies were inputted in the SPSS software and MDA were done. The result of MDA is the FIP_{manuf} model, shown in equation 1, which represents the combination of constant and five independent variables multiplied by appropriate unstandardized coefficients.

$$FIP_{manuf} = -2{,}721 + 2{,}063\,RK/I - 0{,}008\,FZ + 4{,}633\,A + 2{,}74\,EUP + 1{,}665\,ROA \quad (1)$$

The model is derived after the autocorrelated independent variables i.e. those that had correlation ratio higher than 0,8, as well as statistically nonsignificant variables were excluded. Relative importance of each independent variable in discriminant power of function is shown by standardized coefficients, while structure coefficients represent correlation between independent variable and value of discriminant function (table 2). Definition of selected discriminant function coefficients is very important when making the decision on which independents to exclude from function in order to make model more efficient and easy to use. Namely, model is efficient and easy to use when there is reasonable number of independent variables included in its calculation.

Table 2. Selected discriminant function coefficients – FIP_{manuf} model

Independent variable	Structure coefficients	Standardized discriminant function coefficients	Unstandardized discriminant function coefficients
Working capital/Total assets (***RK/I***)	,519	,477	2,063
Total liabilities/(Retained earnings + depreciation) (***FZ***)	-,317	-,527	-,008
Retained earnings/Total assets (***A***)	,595	,454	4,633
Total revenues/Total expenses (***EUP***)	,446	,519	2,74
Return on assets (***ROA***)	,501	,168	1,665
(Constant)	-	-	-2,721

Source: Author's calculation

Important elements of discriminant function quality are presented in table 3. Low Wilks' lambda with 0,00 significance indicates that independent variables included in model significantly discriminate financially stable from unstable companies. The other important quality coefficient, canonical correlation, has value of 0,805 what means that 80,5% variations of dependent variable is discriminated by the set of independents i.e. discriminant function what is at acceptable level.

Table 3. Selected discriminant function quality coefficients – FIP_{manuf} model

Eigenvalues				
Function	Eigenvalue	% of Variance	Cumulative %	Canonical Correlation
1	1,846	100,0	100,0	,805
Wilks' Lambda				
Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig.
1	,351	64,319	5	,000

Source: Author's calculation

Next step in the MDA is analysis of FIP_{manuf} model classification ability what is one of the most important model characteristics. Classification is done for period of one year prior to bankruptcy or disclosure of loss above equity for financially unstable companies and for the same period for financially stable ones. The value of the model for each company is calculated and compared with model critical value of - 0,000061 (equation 2). If the value of the model for particular company is lower or equal to critical value, the company is treated as financially unstable and vice versa.

$$CV = \frac{(-1{,}298 \times 34) + (1{,}379 \times 32)}{66} = -0{,}000061 \qquad (2)$$

FIP_{manuf} model classification results are shown in table 4. The results show that 95,5% of original units are correctly classified and the result is the same for cross section analysis. Cross section analysis is an alternative for testing the model classification accuracy by using the so called hold-out sample. This classification analysis is performed in a way it calculates the classification of the sample unit using the discriminant function derived from all other units from the sample.

Table 4. Classification results – FIP_{manuf} model

Financial stability			Prior probabilities for group		Total
			Unstable	Stable	
Original	Count	Unstable	32	2	34
		Stable	1	31	32
	%	Unstable	94,1	5,9	100,0
		Stable	3,1	96,9	100,0
Cross-validated	Count	Unstable	32	2	34
		Stable	1	31	32
	%	Unstable	94,1	5,9	100,0
		Stable	3,1	96,9	100,0

Source: Author's calculation

a Cross validation is done only for those cases in the analysis. In cross validation, each case is classified by the functions derived from all cases other than that case.
b 95,5% of original grouped cases correctly classified.
c 95,5% of cross-validated grouped cases correctly classified.

High predictive ability of the FIP_{manuf} model in the period of one year prior to bankruptcy or loss above equity disclosure has been extended by testing the model predictive characteristics in a two year run. The results indicate that the model predictive ability decreased to 81,7% but it is still at acceptable level. The conclusion on classification results acceptance can be done by comparing particular classification results with theoretical probability increased by 25%. Theoretical probability for two equal groups is 50%, while in the case the groups' sizes are different it can be calculated by using the equation 3 where p represent proportion in group 1, and $1 - p$ proportion in group 2.

$$P_{sluc} = p^2 + (1 - p)^2 \quad (3)$$

Other important elements in classification results analysis are classification errors. Type 1 error appears in the situations where model classify financially unstable company as a healthy one, while type 2 error appears in opposite situations. In one year period prior to bankruptcy or loss above equity disclosure the type 1 error appearance is 5,9% versus type 2 error of 3,1%. The classification ability of the model decreased in two year period prior to bankruptcy or loss above equity disclosure as consequence of quite high type 1 error that reach 35,5%, while the model did not score type 2 error.

3.3. Financial instability model estimation in service industry

Second part of analysis consists of deriving the financial instability model appropriate for service industry. Subsample of companies that operated in service industry consists of 41 business entities. 19 of these companies went bankrupt or disclosed loss above equity, while others were financially stable. MDA were done using the 50 financial ratio calculated for mentioned subsample. Final result of MDA is FIP_{serv} model that is presented in equation 4. Financial instability prediction model consists of constant and three independent variables multiplied by adequate unstandardized coefficients. These coefficients, as well as structure and standardized discriminant function coefficients are shown in table 5. The highest relative importance in discriminant power of model has ratio Total revenues/total expenses, while the ratio Working capital/total assets has the strongest correlation with the value of discriminant function.

$$FIP_{serv} = -2{,}627 + 2{,}316\,RK/I + 2{,}663A + 2{,}583EUP \quad (4)$$

Table 6 shows selected discriminant function quality coefficients. Relatively low Wilks' lambda with 0,00 significance indicates that independent variables included in model significantly discriminate financially stable from unstable companies. Canonical correlation, has value of 0,735 what means that 73,5% variations of dependent variable is discriminated by the set of independents i.e. discriminant function what can be estimated as acceptable.

Table 5. Selected discriminant function coefficients – FIP_{serv} model

Independent variable	Structure coefficients	Standardized discriminant function coefficients	Unstandardized discriminant function coefficients
Working capital/Total assets (***RK/I***)	,823	,492	2,316
Retained earnings/Total assets (***A***)	,541	,312	2,663
Total revenues/Total expenses (***EUP***)	,699	,610	2,583
(Constant)	-	-	-2,627

Source: Author's calculation

Table 6. Selected discriminant function quality coefficients – FIP_{serv} model

Eigenvalues				
Function	Eigenvalue	% of Variance	Cumulative %	Canonical Correlation
1	1,173	100,0	100,0	,735
Wilks' Lambda				
Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig.
1	,46	29,1	3	,000

Source: Author's calculation

Classification results (table 7) are calculated by comparing the model's value of particular company with critical value 0,000024 (equation 5). The results indicate that FIP_{serv} model correctly classified 90,2% of sample units in the period of one year prior to bankruptcy or loss obove equity disclosure, while in the two year period classification ability have decreased to 85,5%. Errors analysis emphasize the higher level of type 1 error which is 15,8% in one year period and 28,6% in two year period prior to bankruptcy or loss above equity disclosure.

$$CV = \frac{(-1{,}137 \times 19) + (0{,}982 \times 22)}{41} = 0{,}000024 \qquad (5)$$

4. CONCLUSION

Financial instability estimation became particularly actual in nowadays when global economy is facing one of the biggest crisis after world war two. The research performed among Croatian companies proved the hypothesis that financial instability in manufacturing and service industry could be reasonably estimated in the two years period by using the combination of various financial ratios. Liquidity, solvency and profitability ratios were found to be statistically most significant in distinguishing stable from unstable companies. Implementation of MDA resulted in derivation of two financial instability prediction models. Both models show high degree of predictive accuracy which is particularly emphasized in the period of one year prior to bankruptcy or loss above equity, while in the two years run it is lower but still at acceptable level. Analysis of type 1 and 2 errors shows higher appearance of type 1 error what refer to higher degree of misclassification of financially unstable companies.

Table 7. Classification results – FIP_{serv} model

Financial stability			Prior probabilities for group		Total
			Unstable	Stable	
Original	Count	Unstable	16	3	19
		Stable	1	21	22
	%	Unstable	84,2	15,8	100,0
		Stable	4,5	95,5	100,0
Cross-validated	Count	Unstable	16	3	19
		Stable	1	21	22
	%	Unstable	84,2	15,8	100,0
		Stable	4,5	95,5	100,0

Source: Author's calculation

a Cross validation is done only for those cases in the analysis. In cross validation, each case is classified by the functions derived from all cases other than that case.

b 90,2% of original grouped cases correctly classified.

c 90,2% of cross-validated grouped cases correctly classified.

Presented discriminant quality coefficients as well as classification results indicate that the models are appropriate for financial instability prediction in manufacturing and service industry. These models can find wide area of practical applications, from micro application i.e. application on the level of particular company, to macro level i.e. the level of manufacturing and service industry presenting in this way useful instrument for macro policy decision makers. Application of the models in transitional real world environment

should verify their discriminating ability and make a starting point for their improvement and enlargement in the future researches.

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TRENDS OF VOLUNTARY INTERNET REPORTING IN CROATIA: ANALYSIS FOR THE PERIOD 2005-2007

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Abstract

During the last decade a large number of scientific papers analyzed Internet reporting of listed companies, but research is still very limited in the emerging markets like Croatia. Therefore, this paper is aimed to analyze voluntary Internet reporting of Croatian listed companies in the period 2005-2007. The research shows that Croatian companies on average are not very transparent as measured by IFR Score. Although capital market in Croatia has been growing very strongly for the last few years there has been only limited improvement in voluntary Internet reporting. The average IFR Score measured on the sample of 55 companies has slightly risen during the period of analysis.

JEL classification: M21, M41

Key words: voluntary reporting, Internet, Croatia

1. Development of capital markets in Croatia

In the 21st century the Internet represents a very useful tool for investors' relations and disclosure of financial and non-financial information to investors. Contemporary research in developed European countries and US reveals that this model of reporting is adopted by majority of listed companies. But still there is very limited research on the issue of voluntary reporting in the emerging markets of Eastern Europe, especially in Croatia. Most of Eastern European countries (including Croatia) were socialist planned economies without capital markets and issues of information asymmetry and disclosure. By the beginning of the 90-ies in the 20th century Croatia started to implement the model of free market economy, privatizing state owned companies and building institutions. The process of transition in Croatia was pretty slow because of the war (1991-1995) and the postwar reconstruction. The chosen model of privatization was pretty unsuccessful, and many companies went into bankruptcy. Majority of stocks in many joint stock companies were acquired by individuals (those with political background or company managers) or their companies, while such transactions were usually intransparent and executed

outside of the bourse. As a consequence, today in Croatia the majority of joint stock companies have a rather concentrated ownership.

In such business environment the capital market was stagnating, there were no IPOs and the issue of financial reporting and disclosure was marginal. But after the enactment of the amended Securities Act in 2002 about 200 joint stock companies (with share capital over 30 mil. kunas and more than 100 shareholders) were forced to list on the bourse quotation of "public joint stock companies". In the same year the reform of pension system in Croatia was started and mandatory and voluntary pension funds were established. During the last few years financial industry in Croatia has been growing very strongly and many open-end investment funds were established. Positive effects of development of fund industry, inflow of foreign investment funds (mainly from Scandinavian countries), strong growth of domestic GDP all together triggered strong growth of the capital market in Croatia. Since capital markets in Croatia are growing very strongly and five IPOs were realized during the 2006 and 2007 it is very interesting to analyze the issue of financial reporting. Especially, it is interesting to analyze the level and trends of voluntary Internet disclosure in the business environment of an emerging market like Croatia.

2. Previous research on voluntary Internet reporting

During the last decade many papers were analyzing the issue of Internet reporting. Early research for Irish companies was conducted by Brennan and Hourigan (1998, 18-21). Research has revealed that 37% of sampled companies had a web site and 23% of them presented balance sheet and P&L statement on the Internet. Cash flow statement was discovered in 14% of sampled companies. Hurtt et. al. (2001, 67-75) analyzed US Fortune 100 Internet reporting practice and discovered that 93 companies had Web sites. Research has revealed that 74% of companies with a Web site publish the balance sheet, while 70% of companies publish the P&L statement and the cash flow statement on the Internet. Furthermore, sampled companies relatively frequently publish the auditor report (65%), notes (63%) and managerial discussion and analysis (61%).

Allam and Lymer (2001, 1-41) conducted research at the end of 2001 and in early 2002 on the sample of 50 largest companies from 5 countries (USA, Canada, UK, Australia and Hong Kong). Researches revealed that majority (96-100 %) of companies publish basic financial statements like: balance sheet, P&L statement and cash flow statement. The PDF format is most used in presentation of financial statements in all the five countries. Usage of spreadsheet formats (XLS & Lotus 123) is still limited since this kind of format was found in 12% of companies only in USA and UK. Usage of Internet for investor's relations in the Euronext stock exchange zone on the sample of 50

largest companies from France, the Netherlands and Belgium was analyzed in 2001 by Geerings et. al. (2003, 567-579). The research revealed that French and Dutch companies use the Internet more intensively for investor relations than Belgian companies. Some basic financial statements are published very frequently in all the three countries, but some Internet advantages (processable format, multimedia, mailing lists, etc) are used less frequently by Belgian companies. After controlling for size the differences between French and Belgian companies are significantly lower. On the other hand differences continue to exist for comparison of equal size Belgian and Dutch companies.
Research in the international setting covering 22 countries (660 companies) was done by Debreceny et al. (2002, 371-394). The authors adopted FASB-s framework and structured Internet reporting into two dimensions: Internet reporting content and Internet reporting presentation. Ordered probit regression resulted with conclusion that size, foreign listing, US listing, technological knowledge and disclosure environment were significant for IFR-Presentation. For variable IFR-Content the significant variables were the following: size, US listing, ratio market/book value and disclosure environment. Bonson and Escobar (2002, 27-51) analyzed voluntary disclosure on the Internet on the sample of 300 companies from EU. The sample was formed of the 20 largest companies by market capitalization from each EU country. The authors used a list of 23 items and formed a transparency index (TI). The research revealed that the TI was statistically related with country of origin, since companies from the North and Central Europe have higher TI in comparison with companies from the South Europe. The industry sector was related with TI and the size since larger companies provide more information on the Internet.
The Internet reporting practice of the 100 largest Japanese listed companies was analyzed by Marston (2003, 23-34). Using the Kruskal-Wallis test it was concluded that size was significantly related with the Japanese Web site status, while this relation was less clear for the level of disclosure. The usage of chi-square test revealed that service companies were less likely to have an English version of the Web site, while manufacturing industries were more likely to have an English version of the Web site. The level of disclosure was not significantly related with industry membership. Finally, foreign listing status (UK or US) was not significant for the Web page status or disclosure level. Research for listed German companies (DAX 100) was done by Marston & Polei (2004, 281-368). The authors developed a very comprehensive list of criteria for the Internet page evaluation, classified into two main sectors: content and presentation. In 2003 all sampled companies had a Web site and 89% presented the full annual report. The most used format was PDF (2000-88%, 2003-98% of companies, while processable format is relatively infrequent (2000-10%, 2003-14%). The total score was significantly related with foreign listing status in 2000 and 2003. The free float variable was significant only in

2000. After transforming scores the size variable became significant in both years.
Bonson & Escobar (2006, 299-318) analyzed the distance between the information provided on the Internet by companies from 13 Eastern European countries and the current requirements according to the EU initiative to increase transparency. The authors developed a list of 44 elements which formed the Distance Index (DI). The research total involved 1,543 companies of which only 805 had a web site, while the research sample was limited to 266 companies. The average value of DI was rather low - 8.66 suggesting that there the transparency of analyzed companies was low in comparison with the EU initiatives. The DI was positively correlated with the Big Four Auditor, financial sector and company size. Pervan (2006, 1-27) analyzed voluntary reporting on the Internet in Croatia and Slovenia on the 2005 data. The research sample included 55 listed companies from Croatia and 30 companies from Slovenia. The author developed a list of 30 elements which resulted with an IFR Score. The average value of the IFR Score for the Croatian sample was only 6.85, while in the Slovenian sample it was 17.63, indicating that Slovenian companies are more transparent in comparison with Croatian companies.

3. Hypothesis and research

3.1. Hypothesis

As mentioned above the main aim of this research is to analyze the cross time change of voluntary Internet reporting of listed companies in Croatia. Having in mind that the data indicate a strong growth of the capital market (Zagreb Stock Exchange) in terms of market turnover and capitalization we could assume that voluntary disclosure of listed companies should also be increased. Increased trade on capital markets and growth of number of investors should result with increased demand for relevant financial and nonfinancial information. However, the behavior of companies as providers of information is not so simple. Previous research indicates that on average Croatian companies are not very transparent in terms of voluntary disclosure. Field research and discussion with managers reveal that financial reporting is still perceived as an obligation rather than and an asset. Croatian managers are used to hide the real financial results primarily for income tax evasion. At the present time many of managers are also large stockholders in their companies and reduced voluntary disclosure might provide them strategic advantage over other participants on capital markets. In order to reveal the change of voluntary Internet reporting practice for listed companies we are testing the following hypothesis:

H: There is an increase in the voluntary Internet reporting of listed Croatian companies in the period from 2005 to 2007.

3.1. Research sample

The research sample is based on the population of joint stock companies listed on the capital market (Zagreb Stock Exchange). But since many of the approximately 300 listed Croatian companies are not actively traded at the market the research sample was limited only to the companies whose share were actively traded in 2005. If a company is not actively traded on the market there is no demand for its information and there is no incentive for voluntary reporting. Therefore, it would be useful to limit the sample only to the companies which are actively traded and for which investors consequently seek information. The criterion for inclusion of company in the initial sample was stock turnover of more than 300,000 € in the first quarter of 2005. On the basis of such criterion only 55 companies entered the sample.
Measurement of level of Internet disclosure in the previous literature is often based on some kind of scoring variable. These variables include a certain number of financial and nonfinacial information, which is evaluated with 1 if satisfied and with 0 if not. Thus for example, Bonson & Escobar (2002) use transparency index consisting of 23 elements, Patel *et. al*. (2002) use Standard & Poors T&D score with 98 elements, Marston & Polei (2004) use disclosure variable with 71 elements, Bonson & Escobar (2006) measure disclosure index with 44 elements, etc. Since this study is aimed to analyze the trend of voluntary Internet reporting in the period 2005-2007, measurement of disclosure variable is based on the same Internet disclosure variable used in the initial research by Pervan (2006). The mentioned research used the Internet Financial Reporting Score (IFR Score), which includes 30 elements. The detailed structure of the IFR Score is given in the Table 2.

3.3. Cross time analysis of IFR Score

In order to conduct the cross time analysis the 55 companies (with the highest market turnover) from the initial research in 2005 were again analyzed in 2006 and 2007. The Web sites of companies were searched by global search engines (Google, Yahoo, etc), using the company name and prefix hr and com. The research revealed that 51 companies (92.7%) had a web site, while 4 companies did not have it. On the basis of analyzing the web sites of the sampled companies the following changes of the average IFR Score was found in the period 2005-2007:

Table 1: Trends of IFR Score in period 2005-2007

	2005	2006	2007
IFR Score Average	6.85	7.31	9.44
IFR $Score_t$- IFR $Score_{t-1}$	N.A.	+0.45	+2.59
IFR Score Maximum	29	29	29
IFR Score Minimum	0	0	0
IFR Score Standard Deviation	8.01	8.36	9.6

Source: Author's calculation

The data on the IFR Score indicate that the average value of the IFR Score slightly rose during the period of analysis. Namely, in 2005 the average was 6.85, in 2006 7.31, while in 2007 the average value of the IFR Score was 9.44. Since the research was done on the same sample of 55 companies (related samples) and the IFR Score is the scoring variable measured on scale the Friedman test was used for formal testing of the IFR Score change.

Application of the Friedman test resulted in the Chi-Square of 46,953 and significance less than 1%. On the basis of such finding here we can accept the hypothesis that voluntary Internet reporting in Croatia was improved in the period 2005-2007. However, although the increase of the IFR Score in 2007 by 2.59 points represents the relative change of 37.8% in comparison with 2005, the average value of IFR Score is still very low. Having in mind the maximum score of 30, the average value of IFR Score of 9.44 indicates that the sampled Croatian companies in 2007 were rather intransparent in comparison with contemporary research from the developed EU countries. More details on the change of IFR Score is given in the Table 2.

Table 2: Changes in the elements of IFR Score in period 2005-2007

	2005	2006	2007	Change 06-05	Change 07-06	Change 07-05
A) Financial statements information						
1. Balance sheet	18	17	18	-1	1	0
2. Income statement	18	17	18	-1	1	0
3. Cash flow statement	17	16	18	-1	2	1
4. Changes of owners equity statement	16	16	18	0	2	2
5. Auditor report	15	14	15	-1	1	0
6. Notes	13	12	15	-1	3	2
7. Accounting policies	13	12	15	-1	3	2
8. Segment information	7	8	7	1	-1	0
9. Quarterly statements	3	3	7	0	4	4
10. Half-annual statements	4	3	7	-1	4	3
11. Past year statements	15	15	16	0	1	1
B) Other useful information						
12. Latest stock price	11	8	9	-3	1	-2
13. Press releases	17	18	20	1	2	3
14. Managerial discussion and analysis	11	13	14	2	1	3
15. Business risks analysis	7	12	12	5	0	5
16. Supervisory board report	7	9	6	2	-3	-1
C) Governance transparency						
17. Managerial board information	12	19	23	7	4	11
18. Managerial board compensation	3	3	11	0	8	8
19. Supervisory board information	10	17	19	7	2	9
20. Supervisory board compensation	2	2	1	0	-1	-1
21. Managerial responsibility for financial statements	6	8	11	2	3	5
22. Governance code	3	3	3	0	0	0
D) User support						
23. Investors page	7	7	6	0	-1	-1
24. Internal search engine	10	16	13	6	-3	3
25. E-mail	52	52	51	0	-1	-1
26. Mailing lists	3	5	3	2	-2	0
27. Statements download	15	15	17	0	2	2
28. Processable format of statements	2	2	2	0	0	0
29. English language page	39	41	45	2	4	6
30. English version of financial statements	21	19	15	-2	-4	-6
Average IFR Score	6,85	7,31	9,44	0,5	2,1	2,6

Source: Pervan, 2006, p. 20 & Author's calculation for 2006 & 2007

In the financial statements section of the IFR Score in 2007 still only 18 companies (32.7%) publish balance sheet and P&L statement. A Slight improvement in 2007 in comparison with 2005 can be found in publishing of the cash flow statement (+1) and changes of owners equity (+2). The auditor report is still published on the Internet by only 15 companies (27.3%). Two more companies in 2007 published notes and accounting policies, while the segment information is published by only 7 companies. Some improvement in

comparison to 2005 can be seen in publishing of quarterly (+4) and half annual statements (+3), while the past year statements can be found in 16 cases. In the segment of "Other useful information" only 9 companies in 2007 present the latest stock price, which represents the decrease of 2 in comparison with 2005. In 2007 we can see improvement of press releases and managerial discussion and analysis of operations and results. The analysis of business risk has become more often since 5 more companies publish that information. Supervisory board reports are still quite rare and only 6 companies publish such information.
The governance transparency sector of the IFR Score reveals good improvement in comparison with 2005 since 11 more companies present data on managerial board, while 8 more companies provide aggregate data on managerial compensation. Supervisory board information is presented by additional 9 companies in comparison with 2005, while information on their compensation is published by only 1 company. The number of companies publishing responsibility for financial statement rose from 6 in 2005 to 11 in 2007. Navigation on the corporate web sites is still demanding since only 6 companies (10.9%) have investors page and internal search engine can be found in 13 corporations (23.6%). E-mail address is available in 51 corporations, while mailing lists are still quite a rare service used only by 3 corporations. Financial statements download is possible in 17 corporations, while processable format of financial statements is still pretty rare and provided by 2 corporations. English version of web sites usage increased from 39 corporations in 2005 to 45 corporations in 2007. Surprisingly, the number of companies publishing financial statements in English decreased from 21 to 15.

4. Conclusions

The conducted research for the sampled largest Croatian companies indicates that the level of voluntary Internet reporting slightly increased during the period 2005-2007. Measured by the IFR Score the level of Internet disclosure in 2005 was 6.85, in 2006 7.31 and in 2007 9.44. The increase of the IFR Score by 2.59 points is tested by Friedman test and the established hypothesis on the increase of Internet reporting can be accepted. Although the IFR Score has increased by 37.8% in the three year period, the average value of IFR Score is still rather low in comparison with the practice of companies from US or developed EU countries. The findings are similar to other research for listed companies from Eastern Europe and here we can conclude that there is a large area for improvement of Internet reporting practices in order to reduce information asymmetry and improve functioning of capital markets in Croatia.

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MODEL OF VERTICAL MARKETING SYSTEM IN RETAIL DISTRIBUTION

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Abstract

Fierce market competition among leading retailers asserts different models of market appearance and cooperation with suppliers. Vertical integration, as a kind of cooperation could range from one-hand transactions to mutual investments in specific assets. From a theoretical point of view the stages of integration at the end of distribution channel reflect on retailer's power and his need for resources. The importance of the paper is set by contemplation on integration factors by the modeling method. The factors like costs, responsibility, risk, margin, and function performance in the channel will be examined. The position of the partner that can be settled in the model could range from conventional contracting to full vertical integration, depending on the volume of the execution of marketing activities.
The contribution of descriptive model could be a kind of recommendation to leading retailers in a way to introduce more proper forms of cooperation with suppliers.

JEL classification: L80, M31

Keywords: distribution channel, vertical marketing system (VMS), retailer, channel power, cooperation.

1. Introduction

The differences between business subjects that have the same market goals but are not a direct competitor to each other represents an extremely interesting field for observation. It is necessary to analyze retail distribution and the distribution channel, as well as to identify the theoretical results that would facilitate the further investigation of the retail development, distribution and the vertical marketing models in general.

Vertical integration in a distribution channel places into focus the factors of cooperation such as the distribution of income among partners, the distribution of risk depending on the marketing functions and activities assumed, as well as margin increase through the cost reduction. The problem is to identify the model which is, from a theoretical point of view, based on gradation of

integration and the retailers' power. This paper explains the position of a mediator and retailer in the distribution channel, and clarifies the state which can occur on the market if a retailer gains a more favorable negotiating position with respect to the other participants in the distribution channel.

The contribution refers to the modeling of the factors of the vertical marketing system, where, at the same time, the approach to the development of the model is adjusted to the retail environment, i.e. to the very end of the distribution channel.

2. The starting point of the retail distribution

From the distribution point of view, retail is a channel for approaching the end users, and another thing which makes it specific is the fact that in this channel, the final economic value of the product, which is generally a market standard, is determined. The very position in the market channel and the contact with end users gives the retailers a certain power which other participants in the distribution have to respect. That power is reflected in a revenue through margin, the range of marketing activities which a retailer transfers to the others, the risk of demand and the costs the retailer is prepared to bear.

On the market, there are numerous potential mediators whose sole purpose is to make it easier for the suppliers and the manufacturers to distribute their products to end users. Bearing in mind a large number of transactions among the subjects that participate in the exchange, some mediators have only specialized in specific ways of distribution and they do it more efficiently than others, for example, through retail sale, wholesale trade, catalogue sale, etc. The greater the number of the mediator types, the more diverse the types of the distribution channel.

When we talk about retail distribution, we refer to the range of those activities and functions on whose completion the product supply and distribution on the very end of the distribution channel, where the retailer has the final say, depend. All the activities and the functions together represent a model which is shaped by certain factors, such as revenue, expenses and risk. Kent & Omar (2003; 72) consider that what retailers thinks about in general, before deciding to go into business with a supplier, is how to satisfy his own needs. The negotiating abilities of the retailer to impose his rules and conditions play a significant role in the way the cooperation with the supplier will go.

For efficient retail, it is necessary to adjust the retailer's and the supplier's distribution models, and this homogenous structure represents a unique model of cooperation between the suppliers and the retailers, which will be discussed

here. Dent (2008; 32) says there are two basic functions that suppliers or mediators perform, them being the satisfaction of supply and demand. Other functions can be divided into the exchange of the market information, the presentation of suppliers to the market, technical back-up and help with product selling to the end user.

The development of retail with the purpose of forming the best possible cooperation among the participants in the distribution, places into focus the question what has to be improved, in what way the mutual cooperation should be modeled and in what way does a retailer influence the physical flow of the goods through the channel. There is a need for considering the mutual relationships among the distribution channel participants, i.e. the business subjects which distribute products and provide services with an emphasis on the cooperation of a retailer with other participants. The greater the income of the retailer, the greater their influence on the distribution channels and the greater their control over the flow of the goods and services, without taking the ownership of the channel. Retail management controls the suppliers, who, then, have to increase the level of their services, take over more marketing functions and activities, reduce the price and improve assortment in stores.

3. Some practical issues of partnership

The efficiency and the productivity of the modern retail come down to the economy of the volume and massiveness of the market space. The more is sold in a store, the greater the flow of the supplies and the more times will the retailer earn his margin. The changes in the sale volume result in the changes of the relations among the partners in the distribution channel, and the conditions of cooperation are no longer the same. Thus, a retailer whose value or volume of sale, as well as that of the supply is increasing, will, accordingly, ask for greater discounts from a supplier. Regarding the growth of the competition in retail business, a number of great retailers are becoming a category for themselves. The big retailers charge even the shelf position to their suppliers, among other services which they couldn't have benefited on before, because the suppliers are more and more dependent on the retailers and their sale now. Actually, a partnership changes in that the suppliers lose power in the distribution and are forced to pay the retailer for the privilege that their products be exhibited in the places with a great number of visitors and potential buyers. In the stores which are restricted to 'four walls', with a strictly determined number and the capacity of shelves which serve for exhibiting the products, a retailer carefully arranges certain products (category-mix, category management) on the shelves, where the relationship between the retailer and the supplier plays an important role.

According to Dent (2008; 379), in order to strengthen their market position, retailers try to build as many stores as possible. This kind of a plan asks for greater efforts in organizing the sale program, a more efficient marketing and a narrow range of management. In other words, the increase of sale in a store, as an indicator of successfulness, represents a real test for the retail strategy and the managing structure.

4. The structure of the vertical marketing system

There is no doubt that in different stages of the distribution chain and the chain of value, there is a striving towards connecting of the subjects - holders of the marketing activities. The vertical marketing system is an interorganizational structure which is based on contracts or trust, where each subject has a limited control over this mutual relationship (Klein, Crawford & Alchian 1978; 297). The purpose of the vertical marketing system is to connect, to a certain level, the marketing advantages of two or more separate organizational units which have different marketing interests and owners. The difference between the distribution channels are manifested in a different range of marketing functions, each with its own expenses, which especially come into focus if we are talking about outscoring marketing activities. If two or more levels of the distribution channel merge into one unit which is supervised and managed by a single managing structure, in that case we have vertical integration (Grossman & Hart, 1986; 711). These two authors link vertical integration with control and ownership. They also claim that in the case of vertical integration, we have the transfer of control over one's assets to another subject, while the first subject still keeps the ownership over that assets.

According to Williamson (1971; 113), vertical integration occurs whenever some marketing activity is taken over or transferred to another subject in the channel for a longer period of time. According to Tipurić (1993; 34), the economic reasons for the vertical system lie in a potentially greater efficiency of the exchange, which is, in its final dimension, manifested in lower costs and higher quality in the distribution process. Vertical integration is, above all, a type of business cooperation which is reflected in the levels of the integration of marketing functions.

In case of a conventional exchange between a supplier and retailer, we are not merely talking about the transfer of the ownership, but this exchange, as a rule, encompasses a number of logistic and other activities. The very proximity of the adjacent participants in the channel implies that we are dealing with some complementary activities, which are, rarely present with more distant participants. Segetlija (2006; 448), gives a contribution to vertical integration by stating that the new trend of trade cooperation development is verticalization

which involves shortening of the distribution channel 'on the basis of connecting wholesale trade and retail'.

4.1. Identification of the model

The analysis of the distribution channel has shown that vertical, compared to traditional channels, have considerably greater dynamics, development opportunities and give a better background for a specialization of the marketing functions. With vertical marketing systems, we have a limited independence of the participants, and, under the pressure from the competition, 'looking down on the partners' transforms into a closer relationship with the leader. The existence of traditional channels comes down to the benefits from a transaction and not from a cooperation which can be more profitable and advantageous in the long run. A vertical marketing channel provides a systematic view of the issue, which was not the case with conventional contracting in that they only dealt with the issue of the contact and the agreement between an end user and a supplier.

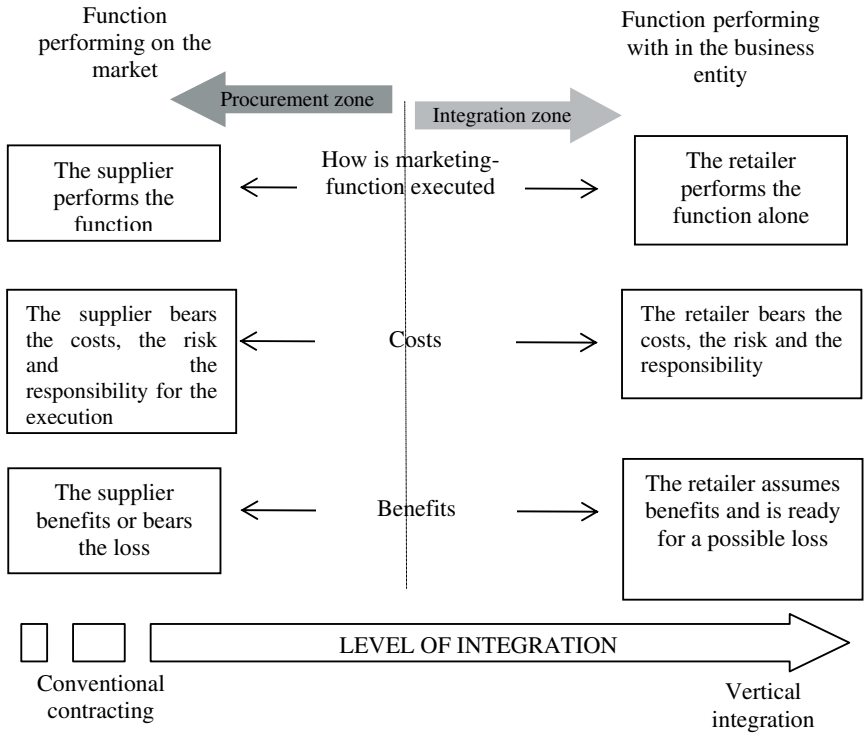
The analysis of the vertical connection or integration is about considering the 'make-or-buy' decision, where 'make' stands for an activity that one performs by themselves, and 'buy' stands for having somebody else to perform it. That decision implies the subject facing all the functions of the channel, at the same time examining what would be the costs and benefits from the execution of that function as well as, how great is the responsibility[1] for its execution. The request for the introduction of this new function, by all means, enriches the channel and facilitates its development; however, with the introduction of a new participant that would be the bearer of this new or specialized transferred function (outscoring), the channel widens and the antagonism within it increases. Vertical marketing channel is another descriptive, theoretical model of the distribution chain which, as opposed to the Porter's theoretical model (Porter;1985,85), emphasizes the role of the participant that would order and carry out the necessary functions. Verticalization stands for the process of unification of all the market levels within the channel, where each level is represented by independent business subjects which transfer their result to the next level that is closer to the consumer. What makes the vertical integration specific is the fact that the distribution of marketing activities is based on an agreement, on condition that all participants retain their identity and independence.

[1] Tyagi (1999; 511) mentions the responsibility within the context of temporal, spatial and informational frameworks. That would mean that the executor of the function carries the responsibility for the time and place of the function execution, and for the information that will occur as a consequence of that execution.

The point of reference for the vertical integration, or the reason for its forming is contained in the 'make-or-buy' decision. Based on the theoretical assumption of the value chain, and during the process of decision-making, we have to consider two things, a) what are the costs and the risks of performing the function and b) what is the expected benefit from the function. The negotiation between two interested participants in the channel, for example a retailer and a supplier, leads to a mutual agreement, whose purpose is to determine the share of the costs for both parties, what is the risk they have to take and what kind of benefits they can expect.

The performance of marketing functions in the channel depends on the following factors: costs, expected benefits and risks (Figure 1). If a retailer is equipped to an extent where he is able to perform certain marketing functions using his own resources, he bears the risk and the costs of performing that function. For example, owning a vehicle for transferring goods means that the retailer has, in terms of transport, opted for the 'make' decision, and, therefore, bears the transportation costs, but, at the same time, expects to make a profit on the difference between these costs and the costs that he would have if the transportation were provided by a supplier. However, transportation includes the coordination of the transportation facilities and human resources, which creates certain restrictions and the level of risk in conducting the business. This kind of 'make' decision by a retailer, as a result of specialization and under the pressure by the competition, can change, which means the turn towards the procurement zone, which is shown in Figure 1. The purpose of this picture is to identify the connection of the verticalization of marketing functions in the channel with the limitations, in terms of costs, risks and benefits. The more flexible and looser the verticalization, the more bearing of the costs, the risk and more freedom will be transferred to the other negotiating party. The only phenomenon that can influence the distortion of a dotted line in Figure 1 is the moment of power within the channel. A powerful player puts the pressure on weaker suppliers in that he tries, through their resources, to achieve greater profit by reducing the risk and costs.

Figure 1 Vertical integration model factors.



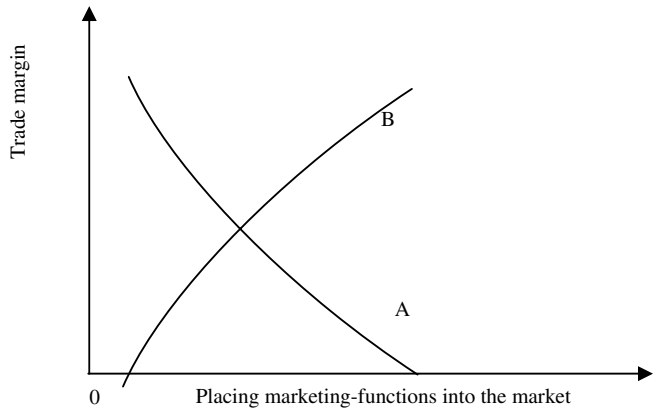
Source: Author's analysis

The conclusion of the analysis is that a graded distribution of benefits, risks and costs among the subjects over the course of the performance of the marketing functions is what all the participants in the channel are striving to. The stages are manifested through adopting the position between conventional contracting and a complete vertical integration. In general, every distribution channel can be set within the scope of the procurement zone and the integration zone, as a function of the vertical cooperation and one-time basis transactions. The retail distribution model is, thus, a result of an agreed distribution of benefits, risks and costs among the partners in the channel, and this agreed distribution is determined by cooperation.

The development of the retail distribution implies the development of the marketing channel structure, in which a graded vertical integration will rule. The structure will be the consequence of the proportion of the economic and negotiating power between the manufacturers and distributors, and they will mutually reflect this structure through vertical cooperation. Graph 1 show that

the involvement in a greater number of marketing functions can influence in which direction the margin will go.

Graph 1 The relation of trade margin and marketing functions in the cases of weaker (curve A) and stronger (curve B) power of a retailer in the channel



Source: Author's analysis

The course of power depends on a certain subject's power which is observed in the channel. There are always two directions that the cooperation in the channel can take, for it is always the case that one more powerful and one less powerful subject meet. Bearing this in mind, Graph 1 indicates the relation between two curves, curve B represents the character of the powerful partner, and the curve A represents the less powerful ones. In the case of the curve A we witness the internalization of functions, where a retailer is trying to include as many as possible marketing functions within his own organization, which secures him a higher margin, and all that, of course, on condition that he performs the functions with competitive costs. The curve B represents the powerful participant, and he, inversely, gains a higher margin through the externalization of marketing functions. The place where the curves meet represents the place where the economic and negotiating power is, from a theoretical point of view, approximately the same and so is the distribution of the margin. If the characters of both partners are on the right-hand side with regard to the place where the curves meet, then we have a channel where B is the leader. However, if the characters are positioned on the left-hand side, that indicates that the more powerful subject is not specialized enough and that he needs to externalize more marketing functions to the other, less powerful subjects on the market.

4.2. The influence of power on vertical system modeling

The development in the channel manifests itself in the change of relationships within vertical integration, and this occurs if a retailer becomes the holder of a higher value margin in the market economy. The prerequisite for strengthening of a retailer's position is, above all, the investment in financial assets. This investment is a result of the strategic goals of management and ownership with the purpose of using the acquired means for gaining new resources which should secure higher value margin and the profit in the long run. From the economic point of view the return to the invested amount means that the capital of a business subject has provided the profit, and is used rationally and economically. Apart from that, Anderson et al (2005; 341) emphasize that the 'return on the capital is a relevant measure for comparing the shift towards, or, away from the integration'. So, viewed from a broader perspective, we must notice the connection of this financial category with the model of vertical integration. The retailers that get return on the invested capital, make an efficient use of strategic resources, or, in other words, the managing structure integrates and classifies those resources and activities which are profitable and executable.

In the relations between suppliers and mediators, or, generally, between the participants in the distribution channel, power is a factor that is always present in the cooperation. El-Ansary & Stern (1972; 48) show that the proportion of power and influence is always present in the distribution channel. Organizations which perform transactions, especially mediators, are dependent on, both, the participants which provide goods and the participants to whom the goods are sold, i.e., on those that come before and those that come later in the distribution chain. A retailer that can obtain goods for a price lower than the one he pays to the mediator becomes more powerful than the mediator and vice versa. Thus, it can be said that the power determines the way and the type of cooperation.
The comprehension of power refers to putting one party's interests before the interests of the other, in which case the latter one is unable to change this. Theoretically speaking, power is manifested in the ability of a business subject to, through his behavior and activities influence the course of cooperation and the behavior of other participants whom he interacts with. Since the purpose of cooperation is to make a bigger profit for the organization and the participants, individual striving towards this additional profit that the organization would not otherwise achieve, is always present. The goals of interorganizational cooperation are set through negotiation, so it is only natural to conclude that what we are dealing with here is the negotiating power or the ability to influence the outcome of the negotiation.

The power ratio in the distribution channel is a complex issue for it is difficult to determine the influence of every participant on the behavior of the others. In order to identify the power, every holder in the channel of goods and service distribution plays an important role.

Anderson et al (2005; 197) define power as 'the ability of one partner to force other partners to do what they otherwise would not do.' Power, therefore, means that the weaker partner conforms to the requests of the more powerful one, i.e., that way he loses a portion of the expected profit from their mutual cooperation. Power should be viewed as a tool for value acquiring and taking over the advantage from the others, in a way that is desired by the more powerful party. Tipurić (1993; 178) proves that power is especially important for examining interorganizational relations, because it is a means for influencing the behavior of other participants. The proportion of influence of a single participant in a certain group will lead to a more desirable amount of profit from transactions (Frazier & Kersi; 1995). Partners find influence extremely important since, as Grossman and Hart (1986; 711) have shown on their model, the ideal distribution of the profit from a transaction among partners in the distribution channel is closely related to the level of coordination in the channel. The one that coordinates the partner relationship according to his interest expects the largest portion of the profit.

Power is present when a business subject follows the direction desired by another organization. However, if the first organization would go its own direction regardless of the wishes of the second one, then we cannot talk about that as a result of power of one organization over the other. A supplier has an opportunity to test their own power in a partnership with a retailer by asking that the retail price of his product be lowered.

5. Conclusion

The influence of retailers on the participants in the distribution channel is ever greater. By means of vertical integration model, the factors which shape the functioning of the relations between a supplier and retailer are identified in this paper. Also, the explanations are given for the consequences of the transfer of marketing functions and activities to suppliers in order to reduce the pressure created by the costs on the trading margin, i.e. the profit of a retail subject. Negotiating power has a great influence on all aspects, from the modeling of the vertical marketing system to the very way of arrangement of the products on the shelves, and that power comes from the volume economy and the growth of the sales potential.

The cooperation at the very end of the channel for the distribution of goods and services will, in the future time, be ever more controlled by a retailer, while the others, manufacturers and mediators will be forced to accept their rules. The key resources for selling the product to the end user will be, even to a greater extent, under the dominance and the management of retail.
Further investigation concerning the possibility of change in distribution channel is required in order to achieve the best possible results for both parties, as well as to achieve the highest possible effectiveness of the distribution.

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ACCOUNTING POLICIES OF HEP D.D. ZAGREB ACCORDING TO INTERNATIONAL STANDARDS

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Abstract

The desire to meet the EU requirements in terms of accounting has resulted in a larger number of regulations pertaining to financial reporting of business entities in the Republic of Croatia. Although there are numerous regulations, they have to be respected in order to avoid adverse audit qualification. By adopting a new institutional framework for energy sector regulation in the Republic of Croatia, a good environment has been created for application of International Financial Reporting Standards, which are used for regulation of financial reporting within the HEP Group, as well as for the adjustment of accounting principles of HEP d.d. according to International Financial Reporting Standards, which is the subject of this paper.

JEL classification: M41

Keywords: HEP d.d.; Accounting policies, International Financial Reporting Standards, International Accounting Standards

1. Introduction

In 2002 Croatia started applying the legislation regulating energy sector in market terms: Energy Act, Act on the Regulation of Energy Activities, Electricity Market Act, Gas Market Act, Act on the Oil and Petroleum Products Market. In December 2004, the Croatian Parliament adopted Amendments to the Energy Act, a new Electricity Market Act and a new Act on the Regulation of Energy Activities ("Official Gazette", 177/2004.).[1] By adopting the specified institutional frameworks, a good environment for implementation of International Financial Reporting Standards has been created, which are used for regulation of financial reporting within the HEP Group, as well as for adjustment of accounting principles of HEP d.d. according to International Financial Reporting Standards.

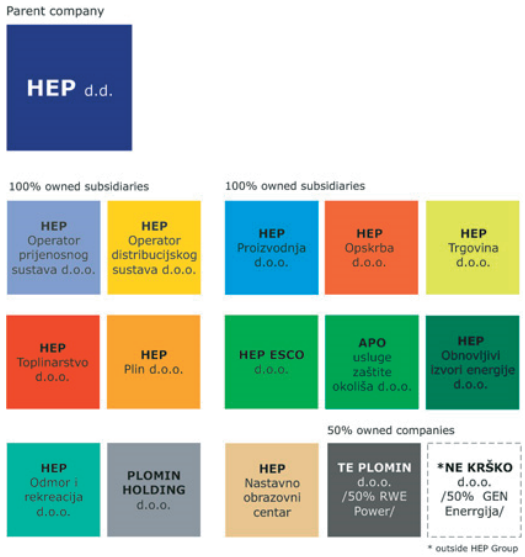
1 Annual report of HEP d.d. Zagreb for 2006, p. 15., http://www.hep.hr/hep/publikacije/godisnje/2006Godisnje.pdf, 26.09.2007

2. About HEP d.d.

In accordance with the Company Act, Hrvatska elektroprivreda (HEP) is registered as a stock corporation (d.d.) with seat in Zagreb, Ulica grada Vukovara 37. Based on the decision of the HEP Management board of November 21, 1994, Hrvatska elektroprivreda was established through modernization and restructuring of the former Public company (JP) Hrvatska elektroprivreda s.p.o., which ceased to exist following the foundation of today's HEP d.d.

Based on the available data from accounting policies of HEP d.d. of June 2007, Hrvatska elektroprivreda d.d. was registered in the file excerpt 1-7916, with decision reference number Fi-31673/94, made according to the decision of Commercial Court in Zagreb of December 21, 1994. Company identification number (MBS) – of Hrvatska elektroprivreda d.d. is 80004306, and the number of Hrvatska elektroprivreda d.d. in the State Bureau of Statistics is 3557049. The organization structure of HEP Group is given in Figure 1.

Figure 1. Structure of HEP Group d.d. Zagreb



Source: http://www.hep.hr/hep/grupa/shema.aspx, 18/09/2007

Hrvatska Elektroprivreda is organized in the form of a holding company with a number of daughter companies. The parent company of the Group, HEP d.d., performs the function of HEP Group corporate management and guarantees the

conditions for the secure and reliable electricity supply to customers. Hrvatska Elektroprivreda (HEP Group) is a national electricity company which has been engaged in electricity production, transmission and distribution for more than one century, and with heat supply and gas distribution for the past few decades.[2] Stock capital of the Company amounts to 19.792.159.200,00 kuna, which at the time of the Company registration was equivalent to the value of 5.400.518.000,00 kuna, or EUR 2.711.254.684,93.[3] The stated amount is divided in 10.995.644 ordinary shares of nominal value of 1.800,00 kuna per share, or DEM 500,00.[4] The total amount of ordinary shares, in absolute amount, is owned by the Republic of Croatia.

2. Application of International financial reporting standards and International accounting standards in financial reporting of HEP d.d.

By signing the Stabilization and Association Agreement between the European Union and the Republic of Croatia, the Republic of Croatia has taken over the obligation to harmonize Croatian legislation with EU *acquis communautaire* and the obligation to harmonize the national framework of accounting standards with financial reporting standards. By entering of the new Accounting Act into force, large enterprises in the Republic of Croatia are given a new framework for preparing and presenting the key financial statements as these need to be adjusted to requirements established through introduction of International financial reporting standards.

Introduction of unique forms and norms in financial reporting requires adjustment of the existing reporting frameworks to new standards, bringing into line, in the first place, implementation of accounting policy. Accounting policies present the main guidelines in preparing financial statements, adjusted in accordance with International accounting standards and financial reporting standards.

3. Accounting policies of HEP d.d.

In June 2007, based on the Article 27 of the Articles of Association, HEP d.d. Zagreb adopted new accounting policies adjusted to all necessary standards and attitudes of the Croatian Financial Reporting Standards Board. Fundamental changes in accounting policies of HEP d.d will be named and used in the following text. The summary of the most relevant accounting policies, which

2 http://www.hep.hr/hep/grupa/default.aspx, 15.09.2007

3 The average exchange rate for euro in this calculation is 7,30 kuna.

4 The average exchange rate for DEM in this calculation is 3,60 kuna.

were consistently applied in this and in previous years, are explained below (only the most important policies are mentioned due to limited space).[5]

3.1. Presentations of financial statements

The financial statements have been are prepared in accordance with International Financial Reporting Standards ("IFRS") as published by the International Accounting Standards Board. The financial statements have been prepared on the historical cost basis except for certain financial instruments that were presented at revalued amounts. The financial statements are presented in thousands of Croatian Kuna (HRK'000), since that is the currency in which the majority of the Company's transactions are denominated. The financial statements have been prepared under the going-concern assumption.

3.2. Consolidation principles and methods

The consolidated financial statements consist of the financial statements of HEP d.d. and entities controlled by HEP d.d. (its subsidiaries). A listing of the Group's subsidiaries is provided in Note 35. Control is achieved where HEP d.d. has the power to govern the financial and operating policies of an entity so as to obtain benefits from its activities. The results of subsidiaries acquired or disposed of during the year are included in the consolidated profit and loss account from the effective date of acquisition or up to the effective date of disposal. Where necessary, adjustments have been made to the financial statements of subsidiaries to bring their accounting policies into line with those used by other members of the Group. All important transactions and conditions among the companies – members of the Group have been eliminated during consolidation. Minority interests in the net assets of consolidated subsidiaries are shown separately from the Group's equity in them. Minority interests consist of the amount of those interests at the date of the original business combination and the minority's share in equity changes since the date of the combination.

Losses related to the minority's interest in the subsidiary's equity are allocated against the interests of the Group to the extent in which the minority has an obligation and is able to make an additional investment to cover the losses.

3.3. Investments in subsidiaries

Subsidiaries are those companies in which the Company (as parent) has control, i.e. power to manage financial and operational policies by making decisions on financial and operational policies in a subsidiary. Investments in subsidiaries

5 According to: Annual reports of HEP d.d. Zagreb for 2007, pp. 109-128, http://www.hep.hr/hep/publikacije/godisnje/2007Godisnje.pdf, 26.01.2009

are presented in the balance sheet at cost adjusted by any changes in the Company's share in the net assets of a subsidiary after acquisition, and for any value impairment of an individual investment.

3.4. Investments in associated companies

An associated company is an entity over which the Group has significant influence, but not control or joint control. Significant influence means participation in the financial and operating policy decisions in the associated company, but it does not imply control or joint control over financial or operating policies. The results and assets and liabilities of associated companies are incorporated in these consolidated financial statements using the equity method of accounting except investments in associated companies held for sale that are accounted in accordance with IFRS 5 „*Non-current Assets Held For Sale and Discontinued Operations*". Investments in associated companies are carried in the consolidated balance sheet at cost as adjusted by changes in the Group's share of the net assets of the associated company after acquisition and corrected by any impairment in the value of individual investments. Losses of an associated company that exceed the Group's interest in that associated company (which includes any long-term interests that, in substance, form part of the Group's net investment in the associated company) are not recognised, unless the Group has a legal or constructive obligation or made payments on behalf of the associated company. Any amount of the acquisition cost that exceeds the Group's share of the fair values of the identifiable assets of the associated company at the date of acquisition is recognised as goodwill. Goodwill is included in the book value of investment and impairment is estimated as part of the investment. Any deficiency of the cost of acquisition, i.e. discount at acquisition, below the Group's share of the fair values of the identifiable net assets of the associated company at the date of acquisition is credited to profit and loss account in the period of acquisition. Where transactions are made between a member of the Group and an associated company, profits and losses are eliminated to the extent of the Group's interest in the relevant associated company.

3.5. Property, plant and equipment

Property, plant and equipment are specified according to their purchase value reduced by accumulated depreciation and any loss arising from reduction in asset value, except for land, which is specified according to its purchase price. The estimated useful lives, residual values and depreciation methods are reviewed at the end of each year with the effect of any changes in estimate calculated on expectation basis. Fixed assets in use are depreciated by use of the straight-line method as it is presented in Table 1.

Table 1: Depreciation in HEP (in years)

BUILDINGS	2006	2007
Hydroelectric power plants (Dams, embankments, buildings and other structures and facilities)	20 – 50	20 – 50
Thermal power plants (buildings and other facilities)	33 – 50	33 – 50
Facilities and plants for transmission and distribution of electricity (transformer stations, over- and underground transmission lines, dispatch centres, etc.)	8 – 33	20 – 40
Water and steam pipelines and other thermal power generation and transmission plants and facilities	33	33
Gas pipelines	20 - 25	20 - 25
Administrative buildings	50	50
Plants and equipments		
Hydroelectric power plants	10 – 25	10 – 33
Thermal power plants	6 – 25	6 – 25
Electricity transmission plants and facilities (electric parts of transformer stations and transformers, electric parts of transmission lines)	8 – 33	15 – 40
Electricity distribution plants and facilities (electric parts of transformer stations and transformers, electric parts of distribution lines, measuring instruments, meters and other equipment)	8 – 33	8 – 40
Thermal power stations, hot-water pipelines and other equipments	15 – 30	15 – 30
Gas meters and other gas network equipment	5 – 20	5 – 20
Other equipment and vehicles		
IT equipment	3 - 20	5 - 20
Computer software licences	5	5
Telecommunications equipment	5 – 20	5 – 20
Motor vehicles	5 – 8	5 – 8
Office furniture	15	10

Source: Annual report of HEP d.d. Zagreb for 2007, p.116, http://www.hep.hr/hep/publikacije/godisnje/2007Godisnje.pdf, 26.01.2009

In 2007, the Company reviewed the useful lives of its non-current assets in accordance with IAS 16. Considering the development of new technologies as well as the global practice in estimating the useful lives of energy facilities, and based on experience, condition of energy facilities and information about reliability of plants and availability of energy facilities, the Company established that the useful lives of the canals, hydro power plants, production equipment at the power plants, transformer stations and grids should be extended. A decrease in the useful life of office furniture from 15 to 10 years was suggested. The initial costs of property, plant and equipment contain the purchase price, including customs duties and non-refundable taxes and all direct costs related to bringing an asset to the condition and location for its use. Expenditures incurred after putting the property, plant and equipment into use are charged to expense in the period in which they are incurred. In situations

where it can be clearly observed that the expenditures have resulted in an increase in the future economic benefits that will be obtained from the use of property, plant and equipment beyond its originally assessed potentials, the expenditures are capitalised as an additional cost of property, plant and equipment. Costs that are capitalized include costs of periodic, planned larger, significant inspections necessary for further operation. The gain or loss arising from disposal or withdrawal of property, plant and equipment is determined as the difference between the revenues from sale and principal of the asset and are credited to the profit and loss statement.

3.7. Accounts receivable and prepayments

Account receivables are specified at invoiced amounts. Since July 1, 2002, the subsidiary HEP Distribucija d.o.o. has been providing electricity distribution services, keeping record and collecting the related receivables from tariff-based customers, and HEP Opskrba d.o.o. has been providing electricity distribution services to eligible customers for the account of HEP d.d. since February 26, 2003. The risk of collectability of receivables from the sale of electricity is borne by HEP d.d., and, based on the estimate of HEP's management, an allowance for bad and doubtful receivables is made. All accounts receivable in bankruptcy and receivables claimed through court are fully written off. Management conducts correction of doubtful receivables based on a review of the overall ageing of all receivables and a review of significant individual amounts receivable. As the collectability of certain receivables over a longer term is not certain, the Company makes an allowance for unrecoverable amounts, based on a reasonable estimate and past experience through longer period, in order to write off those amounts as it is shown in the Table 2:

Table 2: Write-off rate in HEP d.d.

Aging of past due date	Write off percentage
61 - 90 days	5%
91 - 120 days	10%
121 - 365 days	20%
Over one year	100%

Source: Annual report of HEP d.d. Zagreb for 2007, p.120, http://www.hep.hr/hep/publikacije/godisnje/2007Godisnje.pdf, 26.01.2009

Outstanding receivables claimed through court and receivables from those buyers which are in the bankruptcy procedure (the principal debt and interest) are fully written off, regardless of the number of past due days. Such write-offs are charged to value adjustment of assets and credited to the allowance account on short-term receivables.

3.8. Inventories

Inventories consist mainly of material and small inventory, and are specified at the lower value determined by comparing an average weighted price reduced by value adjustment for obsolete and excessive inventories and net expected selling price. Management conducts adjustment of inventories value based on individual amount included in inventories. Procurement cost includes invoiced price and other costs directly caused by bringing inventories to a certain location and condition.

3.9. Provisions

Provisions are recognized only when the Group has a present obligation (legal or constructive) as a result of a past event and it is likely that an outflow of resources will be required to settle the obligation, and when the amount of the obligation can be reliably estimated. Provisions are reviewed at each balance sheet date and adjusted according to the latest best estimate. Where the effect of discounting is significant, the amount of the provision is the present value of the expenditures that are expected to be required to settle the obligation. Where discounting is used, the increase in provisions that reflects the passing of time is recognized as interest expense.

3.10. Revenue recognition

Revenue is earned primarily from the sale of electricity to households, industrial and other users in the Republic of Croatia. These activities constitute the main income source of the Group's operating income. Electricity sales are recognised based on the management's best estimate of the actual consumption of the energy delivered to customers. Interest income is recognised on an accrual basis, based on the principal settled and at the applicable effective interest rate. The Company revised its estimate related to recognition of interest in 2007, as it was determined by the analysis of collected amounts that there is no significant difference between interest accrued and interest collected

4. Conclusion

Financial market liberalization, strengthening of control mechanisms, and ever more frequent fluctuation on capital market as well as instability of national economies were factors that gathered the work group of International Accounting Standards Board in order to develop unique guidelines and accounting policies that would make financial reporting easier. Guided by this idea, International financial reporting standards were introduced in the global accounting practice at the beginning of 2005 and end of 2006, and this act

marks the beginning of a new age in accounting - modern accounting. The listed standards make it possible to keep up with globalization and integration processes, which are growing stronger in every aspect and affect all spheres of social and economic life, with a single goal – harmonization of financial reporting.

The desire to meet requirements of the European Union in terms of accounting has resulted in a more legislation regulating financial reporting of business entities in the Republic of Croatia. Although there are numerous regulations, they have to be respected in order to avoid adverse audit qualification. Guided by this idea, financial statements of HEP Group d.d. audited by an independent audit company have shown a high level of adjustment and harmonization with all of the above listed regulations and norms.

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Economic Development, Technological Change, and Growth

CUSTOMER-DRIVEN INNOVATION IN THE ELECTRICAL, OPTICAL AND ICT INDUSTRY

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Abstract

Before being adopted internationally, successful innovation designs tend to have been preferred in one particular country or region. These countries or regions can subsequently be labelled as Lead Markets. This paper employs a Lead Market approach to assess for each of the 25 European Union member states (EU-25) its likelihood that locally preferred innovation designs in the Electrical/Optical/ICT Industry become successful in other countries. A system of five particular demand- and country-specific attributes - the so called Lead Market factors – is regarded as critical for the probability of the market becoming a Lead Market: price advantage, demand advantage, export advantage, transfer advantage and market structure advantage. The aim of this paper is to identify and operationalise indicators to measure and compare the Lead Market properties at international level. The indicators used are taken from the Community Innovation Surveys (CIS-3 and CIS-4), the Eurostat/OECD PPP and Expenditure Database at BH level, the UNCTAD FDI-Database, the EU Business Demography Statistics, and the Eurostat Foreign Trade Database (Comext). Based on the Lead Market analysis, implications for policy makers are outlined.

JEL classification: L60, O33

Keywords: Lead Markets, innovation diffusion, European Union, sectoral analysis

Non-technical summary

A Lead Market approach is used for each of 25 European Union member states (EU-25) to assess the likelihood that locally preferred innovation designs become successful in other countries. The analyses are conducted for the Electrical/Optical/ ICT Industry. The concept of Lead Markets suggests that for many innovations in a particular industry there are regional markets that initiate the international diffusion of a specific design of an innovation. Once a specific innovation design has been adopted by users in the Lead Market it is subsequently adopted by users in other countries as well. Lead Markets should be focal points for the development of global innovation designs.

By focusing on the design of the innovation which responds to the preferences within the Lead Market, a company can leverage the success experienced in the Lead Market for the product's global market launch. In order to follow this Lead Market strategy, it is necessary to assess the Lead Market potential of the industries in different countries before an innovation is developed and tested in the market. The method produces information that is of importance for the development phase and the market launch of globally standardised innovations. This article presents an indicator-based methodology that attempts to approximate the Lead Market attributes of EU-25 countries for the Electrical/Optical/ ICT Industry. A Lead Market is defined as a country where users prefer and demand a specific innovation design that not only appeals to domestic users, but can subsequently be commercialised successfully in other countries as well. A system of five particular demand- and country-specific attributes - the so called Lead Market factors – is regarded as critical for the probability of the market becoming a Lead Market. These factors, which influence a country's Lead Market potential, are as follows: price advantage, demand advantage, export advantage, transfer advantage and market structure advantage. The aim of this paper is to identify and operationalise indicators to measure and compare the Lead Market properties at international level. The indicators used are taken from the Community Innovation Surveys (CIS-3 and CIS-4), the Eurostat/OECD PPP and Expenditure Database at BH level, the UNCTAD FDI-Database, the EU Business Demography Statistics, and the Eurostat Foreign Trade Database (Comext). Based on the Lead Market analysis, implications for policy makers are outlined.

Introduction

In politics and business management alike, taking stock of the national innovative potential is an important strategic task. In the evaluation of technological performance on the political stage in particular, there has, for many years, been a tendency to concentrate on "supply-side" assessment of the national innovative potential. Patent applications, R&D expenditure and spending on education are naturally important input factors for the process by which innovations come about and are disseminated. However, it is always assumed that the supply of innovations created by a "technology push" will be matched by demand on the market.

There is surely no need to go as far as some economists, who claim that the graveyard of innovations that have not caught on is full to bursting (Real, 1990). Nevertheless, there is no argument about the fact that promising new sectors are, on the whole, supported rather than driven by technology. New technologies are not without importance, but often tend to "play second fiddle"

as new markets develop (Wengenroth, 2002). The literature offers up numerous examples of cases in which products that - from a technological point of view - were superior, failed to become the standard on the world market (cf. e.g. Beise, 2001). Innovation policies and company innovation strategies that define additional benefit exclusively in terms of the technological efficiency of products ultimately run the risk of producing goods that are inappropriate for the demand of different markets. The following sections are dedicated to a description of the worldwide market appeal of European companies' innovations. The focus will be placed on demand pull, an aspect that has largely been left on the sidelines of innovation research.

This paper is dedicated to a description of the worldwide market appeal of European companies' innovations. The focus will be placed on demand pull, an aspect that has largely been left on the sidelines of innovation research. The research is carried out within the framework of a Lead Market Analysis – a methodology that has been developed to assess the Lead Market potential of the Electrical/Optical/ICT Industry in the EU-25 member states and to provide targeted policy recommendations on how to stimulate innovation activities in these markets.

Another version of this paper has been prepared as part of the "Innovation Watch – Systematic" project, which has been sponsored by the European Commission, DG Enterprise and Industry, to monitor innovative capabilities of firms in the EU-25 member states and to provide implications for policy makers within the course of the Lisbon agenda to foster innovation in Europe.[1]

Customer acceptance for innovation

A large number of empirical studies show that customer proximity is of great importance for the innovation process.[2] The results of the third Community Innovation Survey (CIS-3)[3] once again confirm the prominent role of clients in

[1] See Commission of the European Communities (2005) and Cleff, T, Grimpe, C., Rammer C.: The Role of Demand in Innovation - A Lead Market Analysis for High-tech Industries in the EU-25, ZEW Dokumentation Nr. 07-02 (ISSN 1611-681X), Mannheim 2007.

[2] See e.g. Gemünden, H.G., Heydebreck, P. and Herder, R. ([1992]); Cooper, R.G., Kleinschmidt, E.J. (1987).

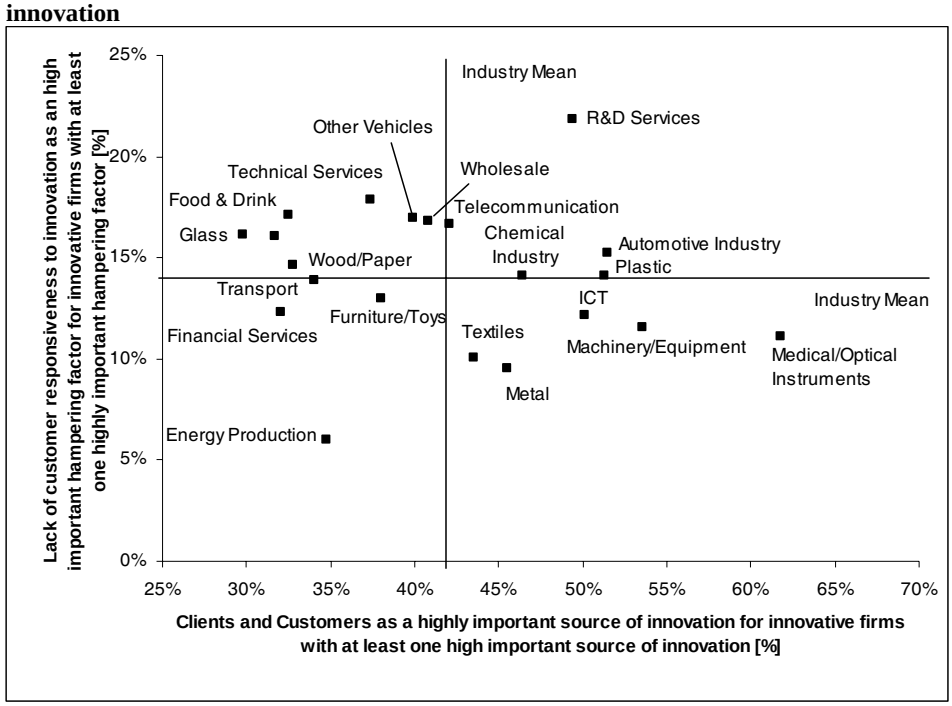
[3] The Community Innovation Survey (CIS) is a survey on innovation activity in enterprises covering EU Member States, EU Candidate Countries, Iceland and Norway. CIS-3/CIS-4 data covers in general the period 1998-2000/2202-2004. In the present study the micro-aggregated data were available for Belgium (1,210 firms), Czech-Republic (3,300 firms), Estonia (2,255 firms), Germany (2,905 firms), Greece (1,365 firms), Hungary (932 firms), Iceland (329 firms), Latvia (1,863 firms), Lithuania (1,804 firms), Norway (3,119 firms), Portugal (1,787 firms), Slovakia (1,546 firms) and Spain (7,627 firms).

providing momentum for the innovation process. A total of 26 percent of innovators assess their customers' role as high. Only 12 percent of companies judged competitors and other firms from the same industry to be a high important source of innovation, while 20 percent gave this rating to suppliers and 14 percent to fairs and exhibitions. Only 5 percent of innovators received their most important impulse to innovate from universities or other education institutes and only 4 percent from government or non-profit research institutes.

It is in the field of product innovations that customers have the most influence. Nearly 33 percent of such innovations and nearly 35 percent of the market novelties can be traced back to customer input. Whether or not it is considered necessary to intensively involve customers in the innovation process varies from sector to sector. Such sectors as Biotechnology (46 percent), Machinery/Equipment (42 percent), the Automotive Industry (42 percent) and the Electrical/Optical/ICT sector (41 percent) cite customers as a highly important source for innovation. This raises the question of how the importance of demand for the innovation process should be ranked compared to other key sources of information from outside the firm.[4] In the biotechnology sector, for example, demand is likely only to be one important source of innovation among many, like commercial laboratories/R&D enterprises, universities or other high education institutes and government or private non-profit research institutes. The other sources may well be more technological in nature - e.g. R&D enterprises or consultants. To reflect this, Figure 1 compares clients' and customers' role as a source of innovation with their role as a hampering factor. This is done by plotting the relative frequency of innovative firms that cite clients and customers as an important source of innovation against the relative frequency of those that list clients and customers as a hampering factor, provided that they named at least one important source of innovation and at least one important hampering factor.

[4] Suppliers of equipment, materials, components or software; competitors and other firms from the same industry; consultants; commercial laboratories/R&D enterprises; universities or other high education institutes; government or private non-profit research institutes.

Figure 1: Clients and customers as important source and hampering factor for innovative firms with at least one important source and at least one important hampering factor for innovation



Source: CIS-3, unweighted, ZEW calculations.

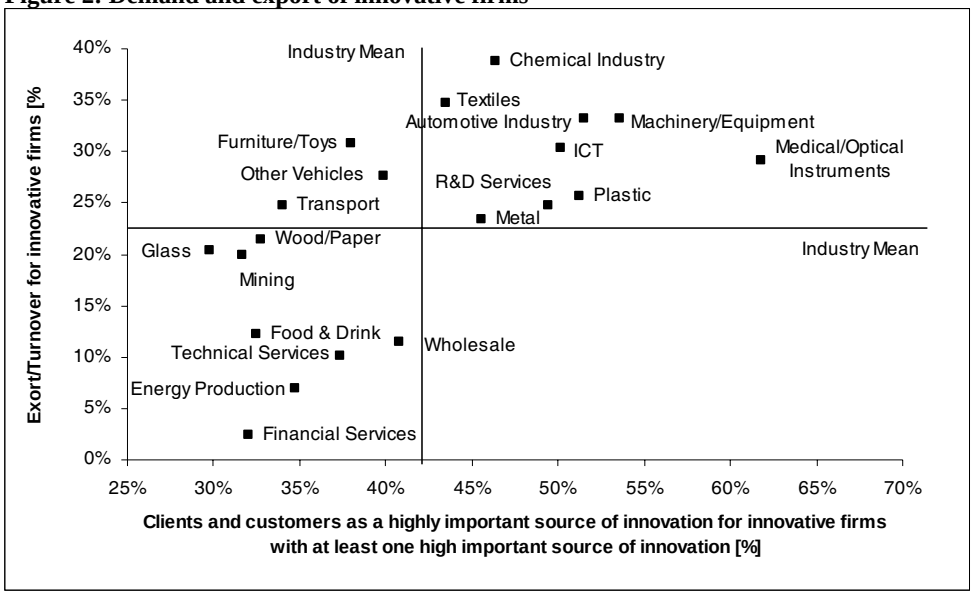
The following sectors consider demand - compared to other sources of information - to be highly important more frequently than average: The Medical/Optical Instruments industry, the Automotive industry, Machinery/Equipment, ICT, the R&D Services industry, the Plastics industry, the Chemicals industry as well as the Textiles and Metals industry. In the Automotive industry and in R&D Services, demand is also named as a hampering factor for innovation more frequently than average. In these sectors, demand is therefore of above-average importance both as a source of innovation and a hampering factor. Sectors like the Medical/Optical instruments, Machinery/Equipment and ICT industries are in a better position than most in this respect: in spite of an above-average importance of demand, the frequency with which innovations are hampered is below average.

It is clear that the relative importance of demand compared to other sources of innovation increases as soon as firms become active mainly on international markets. In markets with a strong international focus, innovations must also aim to meet the needs of foreign customers. It is more difficult to take such international customer needs into account, because customer preferences can vary between different countries/markets. This is the crux of the problem for innovation strategy. The company's customers may be in different regional or

national contexts and sometimes at different stages of technological development. Nonetheless, they all expect innovations perfectly adapted to their respective technical applications.

How do individual sectors manage to utilise demand as a source of innovation in a way that leads to success, not only in the home market but also in international markets? If innovations bring in high export revenues in a context where customers are important in pushing innovation, this is a sign that the innovation design that meets demand preferences can also come to dominate abroad. The sectors to which this applies appear in the upper right quadrant of Figure 2 below. They include ICT and Medical/Optical Instruments. In contrast, sectors in which innovations are, to a great extent, responses to customers' wishes, but which only achieve a low export ratio, have something of a problem. In particular, Financial Services, Energy Production, Technical Services, Wholesale and Food & Drink only achieve below-average export ratios.

Figure 2: Demand and export of innovative firms



Source: CIS-3, unweighted, ZEW calculations.

However, increasing costs for R&D and the increasing need for standardisation and interface compatibility mean that there are economic and practical barriers to national or customer-specific solutions. These barriers compel manufacturers of new products to choose a particular path for their technological development or to opt for a particular design of innovation. Customers will only be prepared to forgo innovations tailored to their needs if the cost savings offered by a new design, which result from standardisation and network effects, are high enough

to justify abandoning the current technology. The question remains, however, of where – i.e. in which region and with which customers – the "successful" innovations of the future will be designed. We can consider "successful" designs to be those which firstly enjoy early national success, are then successfully commercialised worldwide and force other innovation designs out of the market in the medium term, to become the world standard.
The answer to this question goes hand-in-hand with the answer to another, regarding which customers a company must concentrate on in its future R&D and innovation activity. That is to say, which customers have a close relationship to the so-called Lead Market? Lead Markets are regional markets (usually countries) that generally take up a particular innovation design earlier than other countries. They have specific properties (Lead Market factors) that increase the probability of a wide take-up of the same innovation design in other countries (Commission of the European Communities, 2006). Where the scientific and technical knowledge for this purpose was actually generated is mostly not relevant, as companies in the Lead Market can appropriate this knowledge. More important for competitiveness is the ability to learn on this market about the applications and production of innovations (Meyer-Krahmer, 1997). A Lead Market is characterised by the fact that the innovation designs adopted there have an advantage over other country-specific innovation designs competing globally to set the international standard. This advantage makes consumers from other countries follow the technological standard of the Lead Market and adopt the design preferred by users there. In some cases this means abandoning a design that was previously preferred on the national market (Beise et al., 2002). Therefore, a theoretical Lead Market model should respond to the following question: Under which demand and market circumstances are a country's demand characteristics appropriate to the adoption of technological innovations that will succeed internationally and mark out the technological path to be followed worldwide?

The Lead Market model

The Lead Market construct was first suggested in the 1980s by Porter (1986) and Bartlett/Ghoshal (1990) and is receiving increasing attention worldwide (e.g., Gerybadze et al. 1997, Johansson 2000, Commission of the European Communities, 2006). Bartlett/Ghoshal (1990, p. 243) consider Lead Markets as "markets that provide the stimuli for most global products and processes of a multinational company". Local "innovation in such markets become useful elsewhere as the environmental characteristics that stimulated such innovations diffuse to other locations". It is often observable that a technical design preferred by the Lead Market squeezes out other designs initially preferred in other countries and becomes the global dominant design. A Lead Market can be defined as a country where users prefer and demand a specific innovation

design that not only appeals to domestic users, but can subsequently be commercialised successfully in other countries as well. Beise (2001) and Beise/Cleff (2003) have been investigating Lead Markets on the basis of detailed case studies. They derived a system of five particular country-specific attributes, the so called Lead Market factors that increase the international competitiveness of innovations and increase the probability of the market becoming a Lead Market:

The price of an innovation is the main aspect in Levitt's (1983) globalisation hypothesis, in which the consumers in foreign markets "capitulate" to the attraction of lower prices and abandon their initial innovation. Markets can gain a **price advantage** if the relative price of the nationally preferred innovation design decreases which should compensate for differences between the design and the demand preferences in foreign countries. Price reductions occur mainly due to cost reductions based on static and dynamic economies of scale. Country-specific factors behind economies of scale can be the absolute or the relative market size and market growth.

A national **demand advantage** results from local conditions that facilitate the adoption of nationally preferred innovation designs in foreign markets. This advantage occurs mainly because a country stands at the forefront of an international trend. This trend can for instance be a demographic trend, an environmental trend, other socio-economic trends or simply a higher per-capita income (Vernon, 1966). A trend can also mean a time lead in the build-up of infrastructure complementary to the innovation. When other countries catch up, they will prefer the innovation that is already established in the leading country. Another possible causal factor for a leading demand is that users in the country are sophisticated, meaning that they know more about what characteristics an innovation should have.

The attributes of a market that support the foreign demand and the export of innovation can be summarised as **export advantage**. This advantage appears if the domestic demand responds sensitively to global developments. In such cases, domestic users are frequently more aware of global problems and needs than potential adopters in other countries. Domestic firms are pushed into a global perspective and increase their ability to meet global problems before firms in other countries. Additionally, innovations can be exported more easily if the foreign and domestic market conditions are very similar or if the innovation design can respond to needs in a variety of environments (Dekimpe et al., 1998 and Vernon, 1979).

A country can have a **transfer advantage** if its market has strong communication ties with other countries (Takada/Jain 1991). The adoption of

one innovation design in one country can influence the adoption decisions of users in other countries because the perceived benefit of an adopted design increases for users in other countries. The perceived benefit increases when information on the usability of the innovation design is made available. Information on the innovation not only enhances the awareness of the innovation design but also reduces the uncertainty surrounding new products and processes (Mansfield 1968 and Kalish et al. 1995 and Porter 1990).

The degree of competition in the domestic market is the last Lead Market factor, the so called **market structure advantage**. In general, Lead Markets are very competitive markets. First of all, buyers tend to be more demanding when they face competition than when they are tightly regulated or hold a monopoly (Porter 1990). Second, competing firms are under more pressure to follow those who have already adopted a new technology (Mansfield 1968, p. 144). And third, more innovation designs are tested in a competitive market than in a monopolised market. A competitive market is subsequently more apt to find a design that is not only the best within the domestic environment but also the best across all national environments.

Lead Market Analysis of the Electrical/Optical/ICT Industry

The five Lead Market factors discussed above apply to all countries. In this section we will analyse which countries in particular have Lead Market properties in the Electrical/Optical/ICT Industry. It should be noted that the Lead Market potentials established are for the aggregated sector. In reality, Lead Market potentials within a sector can vary from one product group to another, or even between individual products. The loss of accuracy that results from such aggregation must be taken into account in the analysis. That being said, observations of Lead Market potential that are aggregated at the sector level are still of great interest, as they offer a means of explaining the future competitiveness of different markets. The investigation presented here focuses on the activities of companies from the NACE sectors 30 (Manufacture of office machinery and computers), 31 (Manufacture of electrical machinery and apparatus n.e.c.), 32 (Manufacture of radio, television and communication equipment and apparatus), 33 (Manufacture of medical, precision and optical instruments, watches and clocks) and 72 (Computer and related activities) within the EU 25 countries.

Demand Advantage

A market has a so-called demand advantage if the environmental conditions there foster an innovation design that also anticipates future customer preferences in other markets. Lead Markets are able to anticipate global trends.

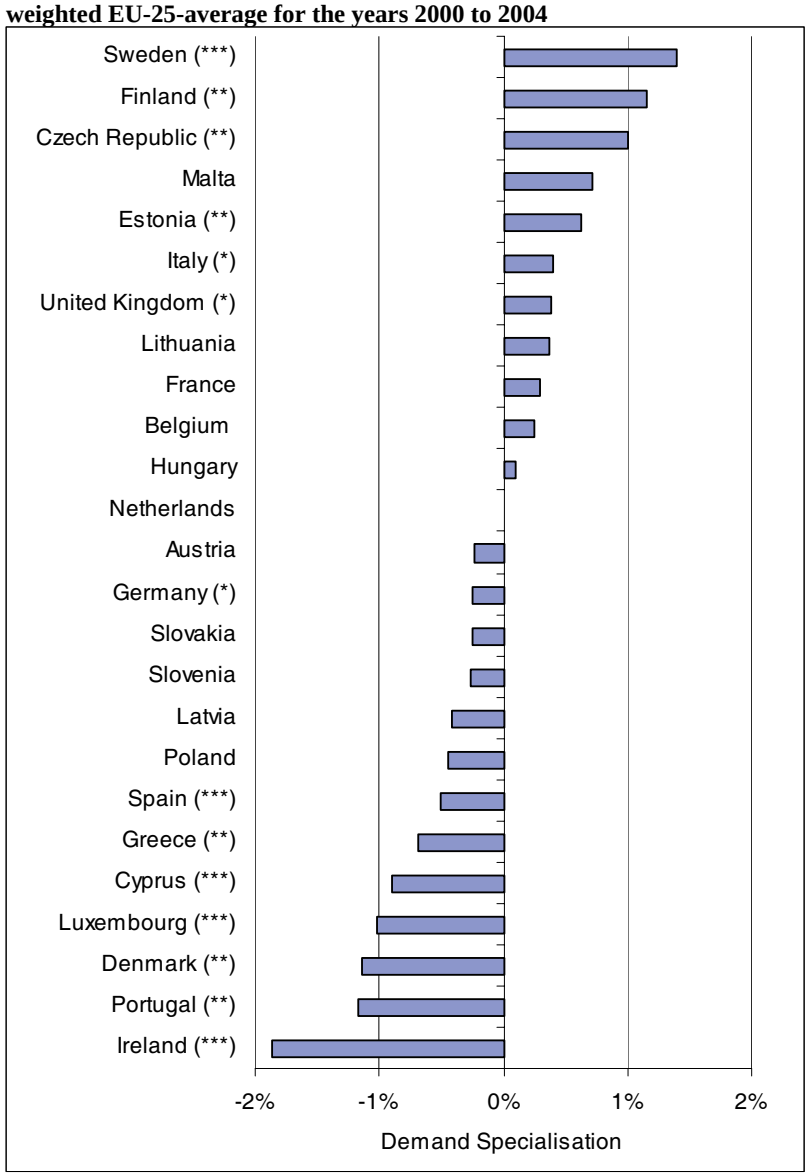
Therefore the difference between different countries' markets does not lie in the direction in which they develop, but merely in the speed with which they move in the direction of the global trend. The innovation design on the Lead Market thus has a "head start". A head start may also come about when the country is the quickest to build-up an infrastructure of complementary goods required by the innovation. The innovation designs from markets at the forefront of a trend offer other markets the answers and solutions to their questions and problems of tomorrow.

One consequence of the different speeds at which markets adapt to or adopt an international trend – following Linder (1961) and Vernon (1966) – comes in the form of demand advantages, which can be expressed as per capita spending on certain products or as the proportion of a country's total consumption accounted for by these products. The idea behind this is that demand for certain goods varies from country to country and that this affects the innovative performance of the companies based there. Companies make greater efforts to develop and improve products in sectors that account for larger proportions of a country's aggregate demand. Porter (1990, p.87) encapsulates the idea when he writes: "The more significant role of segment structure at home is in shaping the attention and priorities of a nation's firms. The relatively large segments in a nation receive the greatest attention by the nation's firms." A greater share of total consumption is a sign that consumers in a country place more value on a certain product. This indicator can be used to compare the situation with other countries. Eurostat's Purchasing Power Parities (PPP) statistics can be used to give a differentiated picture of the segmentation of a country's final demand.[5] Data for the observation period between 2000 and 2004 are available for academic research purposes.

It is possible to directly compare the sector-specific demand specialisation of different countries by subtracting the weighted average share of total demand within the EU 25 from the share of demand for one country. If the share of total demand accounted for by products from a given sector in one country is lower than the average share for these products in the other EU 25 countries, the country in question has a low demand specialisation with respect to the sector. In this case, the value of the specialisation index is negative. A specialisation index of zero means that the proportional demand for a sector in the country concerned is equal to the weighted EU 25 average for the same sector. The index takes on a positive value when the propensity to demand such products on the particular market is higher than average.

[5] For detailed information about the conversion of the PPP-Basic-Headings to the NACE nomenclature and the conversion of different national currencies please see Cleff, Grimpe and Rammer (2007).

Figure 3: Demand specialisation in the Electrical/Optical/ICT Industry compared to the weighted EU-25-average for the years 2000 to 2004



Note: (***), (**) and (*) means significant at 1%, 5% and 10% respectively.
Source: Eurostat/OECD PPP-Statistics for 2000 to 2004.
The countries with a demand specialisation well above the EU-25 average are Sweden, Finland and the Czech Republic, all of which scored around one percentage point above the average. Shares of demand that were significantly below average could be found in Ireland (-2 percentage points), Portugal, Denmark and Luxembourg (all at -1 percentage point).

Government intervention seldom proves an effective means of bringing a country to the forefront of an international trend in the demand for a certain

innovation and creating a demand advantage. Demand preferences are very much culturally determined and can therefore only be changed in the long term. At best, political measures may improve the situation by speeding up technical approval procedures to increase the adaption and adoption of innovations and by providing incentives to react more quickly to certain innovation trends, in the form of tax (=price or cost) reductions. Over the observation period between 2000 and 2004, the demand propensity increased significantly in Malta (increase of around 0.4 percentage point per year) and in France (up approximately 0.3 percentage points per year). Compared to the overall development in Europe (EU 25), the demand propensity in Denmark, Sweden, Portugal, Estonia and Hungary fell by at least 0.2 percentage points annually.[6] Thus in Malta and France, it is not only the demand propensities that are above average – the growth rates of the Electrical/Optical/ICT Industry in these countries are too.

What options in the innovation process are left open to companies from sectors with below-average shares of demand? One possibility is to substitute the inadequate demand in the home country with international demand (see the sections below on price and export advantages). This creates a necessity to involve foreign customers in the innovation process to a greater extent. Another option is to lower relative prices in order to stimulate the domestic and foreign demand. However, this can only be sustained in the long-term if cost advantages are realised.

Price Advantage

According to Levitt (1983), in the context of the internationalisation of innovations, an innovation design sold at a lower relative price on a Lead Market can squeeze out existing – but relatively more expensive – innovation designs on other markets abroad. The limits on price reduction in this case are determined by the potential to reduce production and factor costs now and in the future. Price reductions can be achieved by cost reductions, which, in turn, can result from size advantages.[7] The effects of this price mechanism are

[6]Significant at 5% level.

[7]One example of country-specific size advantages is the potential market size, which offers the potential to exploit economies of scale and learning effects in order to create a price advantage. However, even at the stage of operationalising the potential market size, there are problems in defining and delineating relevant markets. A series of Lead Market studies (Beise/Cleff, 2003) have shown that aggregating "culturally and economically similar" areas was not an adequate way of identifying the different relevant markets, in that it did not allow for sufficient differentiation. For example, heavy goods vehicles in the USA are very different from those in Europe for legal reasons. The scope of the two relevant markets is affected accordingly. For passenger cars - as another product from the same industry -, however, no strong difference of this sort comes into play.

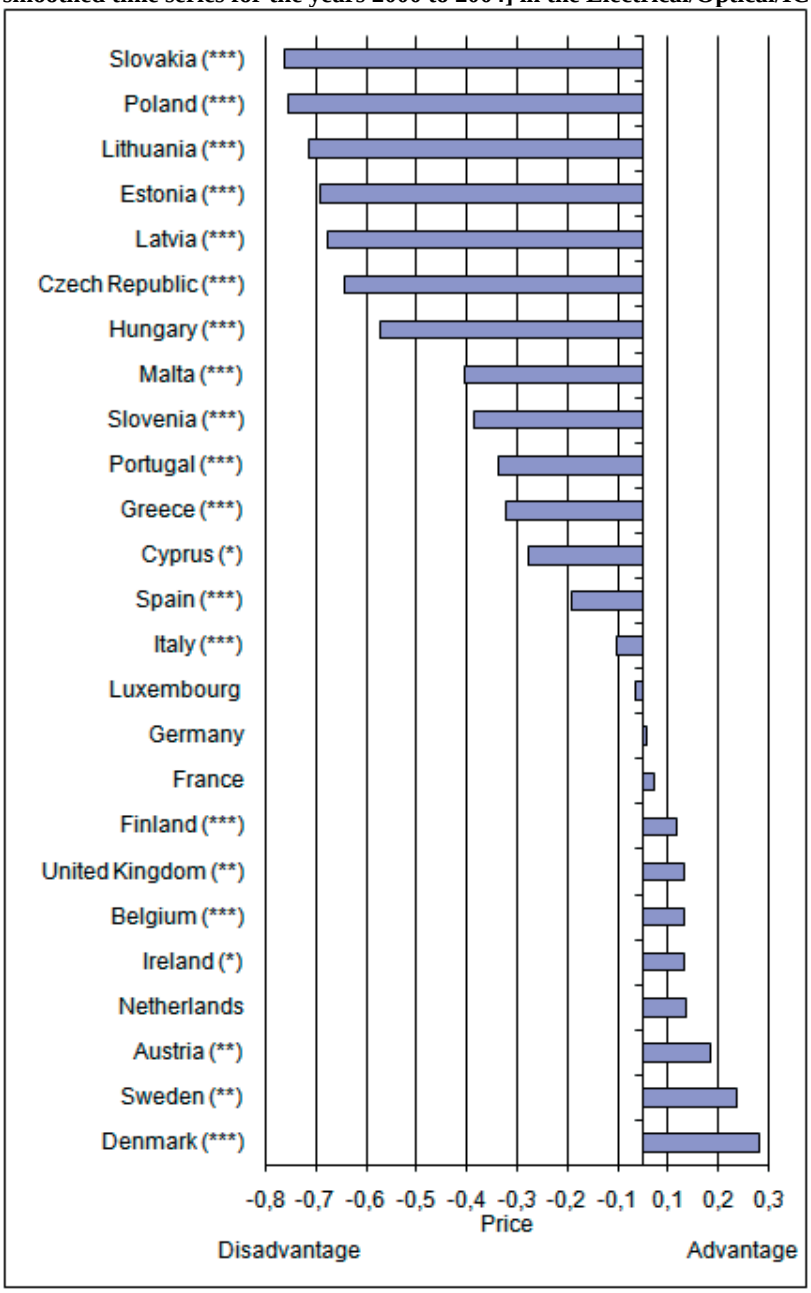
stronger when the relative price differences at the start of the innovation competition are greater. Its effectiveness also increases with increased dynamism of the relative price development in favour of the innovation design. Only when the relative price difference in favour of the innovations on the Lead Market is so great that the transaction costs incurred in changing over to the innovation design can be compensated, will firms and customers in other markets abroad switch over to the Lead Market design.

Price advantages can only be used as Lead Market factors if there is price competition. Therefore in highly regulated or isolated markets it may not be possible to exploit the price advantage of an innovation design. Competitive markets exist for most goods produced by the Electrical/Optical/ICT Industry and for many knowledge-intensive and related services. This means that price advantages are indeed of relevance in this context (Beise et al., 2002). For this reason, it is worth investigating which countries already have long-term price advantages. Similarly to the data for demand specialisation, this price information is available for the period 2000-2004.[8] This provides a basis for the calculation of relative prices within a country, by taking the ratio of sector-specific PPP to the average PPP for all sectors in a country's economy. A relative PPP level calculated in this way controls for country-specific differences in pro-capita income and the different price levels that result. The negative logarithmic quotient of a sector's relative PPP level and the price level for the same country's economy is a direct measure of sector-specific price differences between countries.[9] A positive log-value for a country means that the price level in question was below the average for the EU 25 countries in 2004. A negative value implies that the price level is above average. Figure 4 shows the price differences of the EU 25 countries for 2004, calculated from the smoothed time series for the years 2000 to 2004 in the Electrical/Optical/ICT Industry.

[8]For detailed information about the conversion of the PPP-Basic-Headings to the NACE nomenclature and the conversion of different national currencies please see Cleff, Grimpe and Rammer (2007).

[9] $ln\left(\frac{PPP^{\text{sector}}_{\text{Country}=i}}{PPP^{\text{all sectors}}_{\text{Country}=i}}\right) * (-1)$.

Figure 4: Price advantages and disadvantages of different markets for 2004 [from the smoothed time series for the years 2000 to 2004] in the Electrical/Optical/ICT Industry



Note: (***),(**) and (*) means significant at 1%, 5% and 10% respectively.
Source: Eurostat/OECD PPP-Statistics for 2000 to 2004.

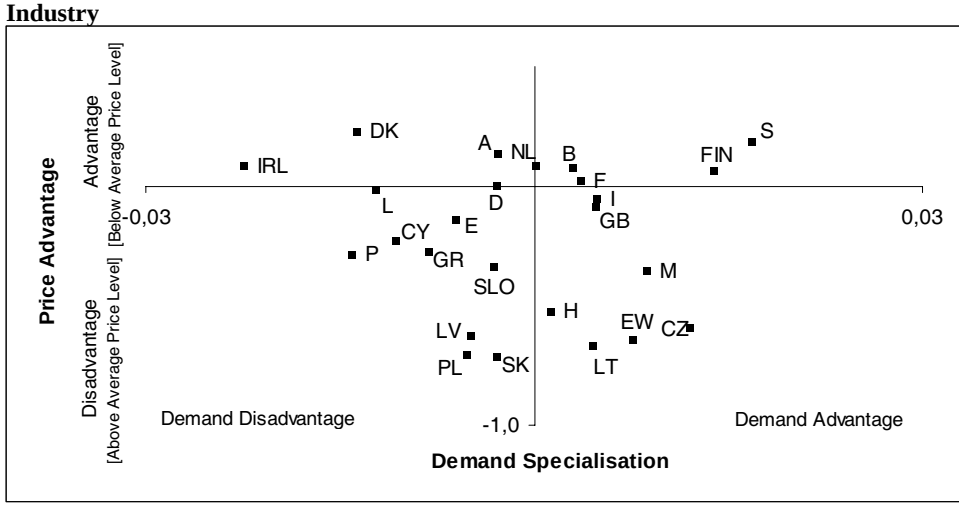
It becomes apparent that the relative prices in the Electrical/Optical/ICT Industry are higher in Eastern European and Baltic countries than in the

remaining Western European countries. Comparatively low relative prices can be found in Denmark, Sweden and Austria.

When considering these statistics it is important to be aware that the price level is not the only indicator of a price advantage, because it is strongly influenced by company strategies and competitive behaviour (see section 4.5). Nevertheless, a low price level and relatively high propensity to consume can be a sign of a price-dependent demand advantage. When this is the case, the demand reacts to a low price level with an above average increase in their demand for the product. In other words, the price elasticity is very high. A low price level thus makes for a clear demand advantage when it is accompanied by high demand specialisation.

In Figure 5, the relative PPP level is plotted against demand specialisation for all countries. The countries that are of interest to us are those located in the upper right quadrant. These are countries with both a low relative price level and a high propensity to consume. The countries in question are Belgium, France, Finland and Sweden. The price level in these countries constitutes a Lead Market advantage. Drops in prices are met by a large increase in demand. Innovation designs that exploit this price elasticity can spread quickly and make use of market size advantages to increase their ability to compete on price. This market characteristic should spur suppliers of innovations to follow a price-cutting strategy from the outset. Innovations designed within this system of incentives should have a marketing advantage over alternative innovation designs, on the basis of price.

Figure 5: Price advantages and demand specialisation in the Electrical/Optical/ICT Industry



Source: Eurostat/OECD PPP-Statistics for 2000 to 2004.

Lead Market advantages can also exist when a low price level comes together with an average, or even slightly below-average, propensity to consume. In these markets, too, the quantity demanded is above average. However, the low price level means that demand specialisation does not appear significantly positive. In some countries, the propensity to consume remains low in spite of a relatively low price level, i.e. the relatively low prices do not lead to increased demand. This is particularly the case in Germany and Austria. When the opposite is true and a high price level is found with high demand specialisation, this suggests that price elasticity on the market is low. The fact that this group of goods makes up a large proportion of total demand is essentially due to the high prices, while the propensity to consume remains comparatively low. Typical examples of this are Hungary, Italy, Great Britain, Malta, Estonia, the Czech Republic and Lithuania. On the whole, these markets are often unfavourable for innovators. Finally, a group of countries can be identified in which the price level is relatively high and the demand specialisation below average. In such cases, the high price level leads to a higher than average (compared with other countries) drop in demand. The high price level is a disadvantage for export-oriented innovators, as it prevents lower-cost innovation designs from coming into being. The countries Portugal, Greece, Poland, Slovakia, Latvia, Slovenia, Cyprus and Spain in particular are faced with this problem.

Of all the Lead Market factors, the price or cost advantage seems to be the easiest to influence by means of political intervention. One form this intervention may take is the use of taxation on particular factors or goods to directly affect the price and cost structure of innovation designs. Any such tax policy should be “trend-oriented” and anticipate future cost developments at an international level. Only then will the industries in question be able to produce innovations that will also subsequently be demanded in other markets. In contrast, a policy of taxation and subsidisation that went against the international cost trend would only increase the probability of idiosyncratic innovation. Price advantages can also be promoted by policies aimed at fostering competition, since intense competition lowers prices for end users. A final important point is the aspect of cost advantages resulting from the size of the market. In the European Union, the market is already large, so innovation policies should be able to set parameters that allow firms to make the most of the size advantage which, in principle, already exists. Such policies include preventing the home market from splitting into regional markets, for example. One example of how this problem can arise is if approval procedures or regulations differ from one region to another.

Export Advantage

The key characteristic of a Lead Market is that innovations realised there will not be limited to a certain country or region, but should be well-suited for export. Vernon (1979) and particularly Dekimpe et al. (1998) find that the exportability of innovations is higher when the exporting and importing markets are more similar in cultural and economic terms. In such cases, customers only suffer a relatively small loss of utility when changing over to a "foreign" innovation design. The number of country-specific innovation designs thus falls comparatively quickly. However, exportability may not only depend on how similar markets are. The "adaptability" of an innovation to different market surroundings is also decisive for its chances on the international market. International marketing proves less complicated when certain features of the innovation design have been planned from the outset to facilitate its use in different environments without the need for any substantial changes. The Lead Market approach is not based on the traditional view that export successes are indicators of a country's technological – or, more generally, economic – competitiveness. Instead, pronounced export activity is seen as an input factor for a country's success in innovation. A strong position in terms of exports in the past may encourage innovators to make their products suitable for international markets. This, in turn, promotes innovation designs that will be a success when exported.

Interaction with customers and demand orientation are not export factors in themselves. Only interaction with the "right" customer and the presence of the "right" market conditions actually lead to innovations that will be taken up in the world market. Innovations driven by demand which only come into use in their home country and thus have no impact on exports are a sign of idiosyncratic demand. In this case, there is a demand preference for innovation designs that do not represent a competitive advantage in other national markets. There are a range of possible root causes of idiosyncratic demand, which may be natural (specific environmental conditions), may have come about through national legislation (regulations that are not extended to the international sphere), or may be due to an insistence on sticking to the individual national standards set by large clients (e.g. postal service, railways, electricity suppliers). On the other hand, the idiosyncratic demand may simply be a result of the consumers' or business customers' preferences being different from those in other countries.

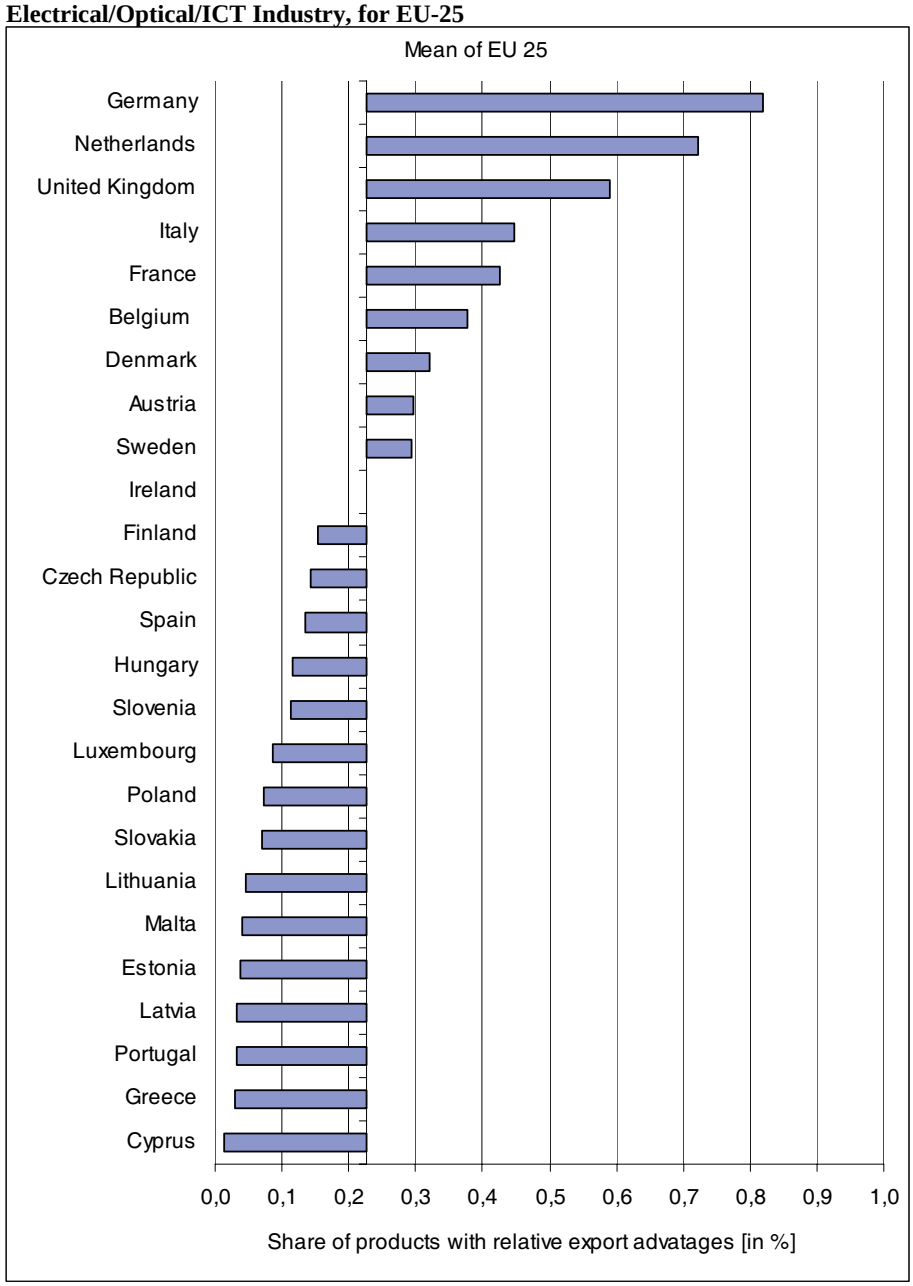
To assess what affect demand in a particular market has on exports we can again make use of the share of aggregate national demand from Eurostat's Purchasing Power Parities (PPP) statistics, in combination with the European foreign trade statistics. The two sets of statistics are based on different systems

of classification, so correspondence tables must first be used to convert to the NACE nomenclature before they can be compared.
The first step is to find the extent of export success for every country. An above-average export performance shows that new products are successfully marketed internationally. The more a country succeeds in working out an export surplus within a group of homogeneous products in bilateral trade, the higher the estimated competitiveness will be (Grubel 1975). To measure competitive advantages between two countries, the ratio of export surpluses to total trade volume (CA_{tik}) within a product group p should therefore be applied: $CA_{tik} = \frac{x_{tik} - m_{tik}}{(x_{tik} + m_{tik})}$.[10] The chosen indicator of competitive advantage corresponds to the objectives set out by a company when identifying potential supplier countries (Cleff 2006b). The Revealed Comparative Advantage - RCA (Balassa 1965) - applied in the tradition of economics for determining comparative advantages, is considered not to be an appropriate indicator in this case. A positive competitive advantage of a country can be relatively hidden behind a low RCA if the ratio of exports to imports of a particular product group is indeed higher than 1, but the corresponding ratio in total trade of a country turns out to be higher. This can lead to an underestimation of the product-specific absolute competitiveness of nations that have a high overall product export surplus, and vice versa (Cleff 2006b).

The average CA of all countries that export the product in question within the different European countries is used as a reference value for export success. Countries with a smoothed product-specific CA significantly above the average for the last ten years are considered to have an above-average product-specific relative export advantage. If a country has a high share of product-specific relative export advantages in a given industry, this indicates a country-specific export advantage there. On the basis of the foreign trade statistics for the Electrical/Optical/ICT Industry, the following diagram shows in how many product groups an above-average relative export advantage is recorded for each of the EU-25 countries.

[10]The variable x_{tik} stands for the export value from the supplier country k ($k \in \{1,..., n\}$) to the supplied countries i ($i \in \{1,..., m\}$) in a specific year t. The variable m_{tik} represents the respective import value.

Figure 6: Share of product-specific relative export advantages in the Electrical/Optical/ICT Industry, for EU-25



Source: ZEW: Global Sourcing Management Tool, 2007.

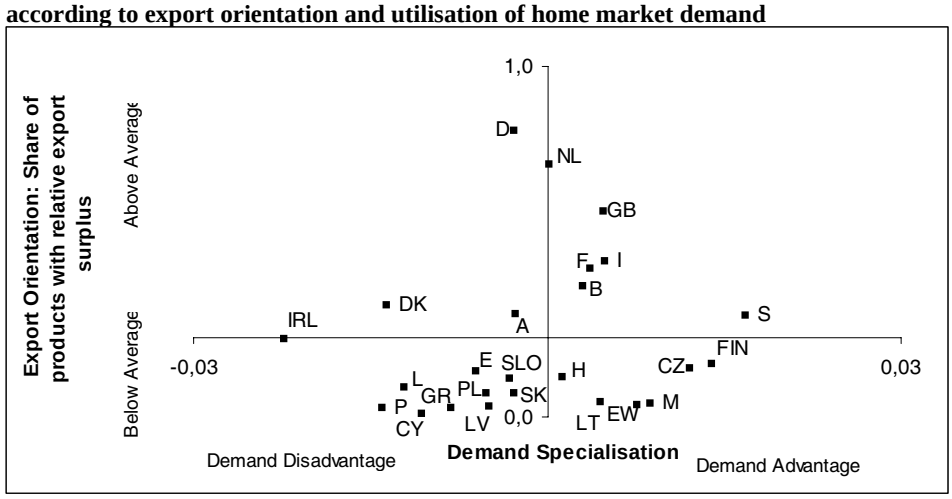
Germany and the Netherlands have particularly large export advantages, with more than 70% of products of the Electrical/Optical/ICT Industry respectively proving successful abroad. UK, Italy, France, Belgium, Austria, Denmark and

Sweden follow, although their export advantages in the industry are slightly above average. The other countries have values well below average.

It is assumed that a Lead Market is always present when demand in a country provides innovating companies with a considerable quantitative impulse to innovate and, at the same time, the companies generate a large proportion of their turnover abroad. If quantities of product innovations exported are high and the impulse to innovate came from customers in the home market, this shows that demand at home prefers an innovation design that has the potential to succeed internationally. Conversely, it is a sign of an idiosyncratic market when companies only export a small share of their goods because they respond too much to the "eccentric" customers' wishes at the home market. In this case, customers appear to prefer product solutions that cannot be marketed internationally (idiosyncratic demand).

Therefore if a country's various export successes, measured as the share of products with above average relative export advantage, can be put down to above-average customer demand, this is a sign that the country has a particular Lead Market characteristic. This is because domestic demand that translates into success on the export market is a typical characteristic of a Lead Market.
Figure 7 shows the extent of demand advantage against the size of the export advantage for the Electrical/Optical/ICT Industry in the form of a portfolio. In the upper right quadrant of the portfolio are countries that develop technologies driven by demand and at the same time exploit the lead-market properties of home demand for successful exports (Lead Market sectors). The home markets in these countries – Belgium, the Netherlands, UK, Italy, Sweden and France - offer particularly favourable conditions for the launch and testing of new products, with the aim of successfully marketing the innovation designs tested at home in other countries.

Figure 7: Lead Market Matrix in the Electrical/Optical/ICT Industry: classification according to export orientation and utilisation of home market demand



Source: ZEW: Global Sourcing Management Tool, 2007 and Eurostat/OECD PPP-Statistics for 2000 to 2004.

Exportable innovations may also originate from sources other than the home market. Innovating companies that are highly export-oriented but do not, to any great extent, rely on home demand as a source of innovation can be categorised into three different types. In the first type, the drive behind innovations that are suited to the world market comes from the company's own R&D or technological know-how purchased externally (e.g. from technology suppliers or academic research).

The second possibility is to base new products on the innovations of foreign competitors, i.e. imitation. The third category comprises firms that are driven to innovate by demand from abroad. This could indicate that the home market is a successful lag market. In this case, home companies may not be leaders in launching product innovations that have international staying-power, but they are good at quickly picking up on new trends from abroad then converting these into export success. For simplicity, we shall denote all of these effects as „technological impulses to export". The upper left quadrant in the diagram above contains the countries Denmark, Austria and Germany, which primarily bring out innovations driven by technology and then translate these into export success.

Finally, if product innovators have little export success and home demand plays no meaningful role as a source of innovation, companies focus on technology specific to the home market. In this case, innovators concentrate on product innovations based of their own R&D or external sources of knowledge, but which do not provide solutions suitable for export. We can speak of

idiosyncratic technology in this context. In the diagrams above, the countries in the lower left quadrant - in particular Luxembourg, Portugal, Cyprus, Greece, Poland, Latvia, Spain, Slovenia and Slovakia - belong to this group of markets.
The most problematic area from an innovation strategy perspective is surely the lower right quadrant. The difficulty is that these countries are largely dependent on demand to drive their innovation activities, yet the demand on their home market is idiosyncratic. The home market acts as an obstacle to export activities, since catering for home demand makes for innovations that are difficult to sell in other countries. Hungary, Finland, Malta, Estonia, Lithuania and the Czech Republic are notable examples of countries with such markets.
If innovation policy is to be efficient from this point of view, it must adapt the incentives it offers to focus more strongly on exports. This applies in particular to technology development projects that receive government subsidies. The potential exportability of the technology could be included as a criterion for subsidisation. Politicians can also support international and flexible Lead Market strategies by not insisting on national solutions, but instead taking experiences from potential Lead Markets into account, for example when approving products and formulating regulations for specific markets. The legislature, too, can influence export orientation, by taking note of international trends and thus preventing infrastructure for science and technology (educational institutions, research establishments, standards agencies etc.) from becoming idiosyncratic.

Transfer Advantage

The concept of transfer advantage covers a range of “classic” diffusion factors. The decision to adopt a particular innovation design in a country is often dependent on which technology has already been adopted in the Lead Market and on the experiences gained during its introduction there. The demonstration effect when the innovation is adopted increases the incentive for users in other countries to adopt the same innovation design, firstly because of the information that is available about the innovation and its use and secondly because of the decreased risk, i.e. reduced uncertainty as to whether the new product or process is reliable. If a product is successfully tried out in the Lead Market, it makes sense to adopt it in other markets too (Kalish et al., 1995). In this case, the Lead Market takes on the role of a test or reference market and is closely observed by agents in other markets. The Lead Market serves as an example for the evaluation of problems and dangers in the introduction of the new technology, thereby reducing uncertainty. More importantly still, the utility of the Lead Market customers affects customers beyond the boundaries of the market.

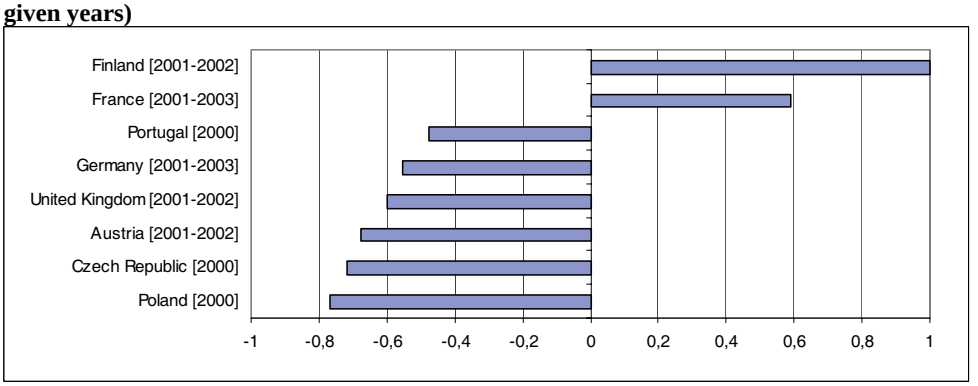
A country's market therefore has a transfer advantage if it raises the perceived utility of customers on other markets as well as those at home. The reputation and high level of development of the Lead Market's users is considered to be a hallmark for high-quality innovation designs. The quality of demand is especially determined by user's know-how and experience with similar products. For example, the markets in countries which often feature in the mass media and television series are potentially Lead Markets for lifestyle products. In a similar way, smaller markets can also bring out products that are competitive worldwide (Beise et al., 2002).

Transfer advantage is difficult to quantify, as analyses related to innovation projects have shown (Beise/Cleff, 2003). Since the differences between countries are less pronounced at the industry level than when it comes to individual products, it is almost impossible to find general indicators for the industry level. Cleff (2006b) used the amount of foreign direct investment (FDI) as a proxy for the potential international diffusion of innovations. One benefit of foreign subsidiaries is that they provide companies with information about the particular nature of demand in a country. Another advantage for companies with subsidiaries in several countries comes in the form of economies of scale. This means that the company can launch a single innovation design internationally, even if the design itself is not optimally suited to the conditions in one of the local markets. This means, for example, that companies may use the same software, the same component assemblies and the same machines in all markets, even though the relative factor prices differ from country to country. Since it is assumed that the parent company is generally the first to make use of innovations or generally makes the decisions about which innovation design to pursue, countries that engage in a large amount of FDI have a transfer advantage.

Unfortunately, data on the quantity of FDI by industry, which would enable a cross-country comparison for the Electrical/Optical/ICT Industry, are only available for eight of the EU-25 countries. The data come from the "United Nations Conference in Trade and Development (UNCTAD)" or Eurostat publications. If we compare the total value of FDI for the specific industries with the help of a measure of specialisation,[11] rather than the number of investments made, we come to the results shown in Figure 8.

[11]The measure of specialisation is calculated by taking the quotient of (1) the industry-specific total stock of FDI by home companies abroad divided by the respective total of FDI by foreign companies in the home market and (2) the overall total of FDI by home companies abroad divided by the respective total of FDI by foreign companies in the home market. To attain a

Figure 8: Specialisation of FDI in the Electrical/Optical/ICT Industry (Average for the given years)



Source: United Nations Conference on Trade and Development (UNCTAD) 2007.

If the proportion of investment abroad is above average, the resulting value is positive. Otherwise the value returned is negative. It becomes apparent that the Electrical/Optical/ICT Industry in Finland and France specialise in FDI more than is average, while the other countries have below-average values.

Countries that succeed in propagating their international standards in innovation design are best placed to realise a transfer advantage. Transfer advantage is the Lead Market factor to which most attention is paid in innovation policy. It is common for government funding for innovations to aim to promote the demonstration effect in the diffusion of innovations (e.g. through application centres designed to give businesses the chance to experience new process technologies). This can be a particularly decisive factor for the international diffusion of a technology if there is a large amount of uncertainty about how readily it can be implemented in practice and how efficient it is in economic terms. However, there is a considerable risk that idiosyncratic technologies will be subsidised, particularly in lag market industries. The degree of openness of a standard should therefore be used as a criterion to determine whether a technology is eligible to receive government subsidies. Equally, increased bargaining power for European politicians and companies in international standardisation committees can help to improve the transfer advantage.

final value between -1 and +1, we take the hyperbolic tangent of the quotient then subtract one:

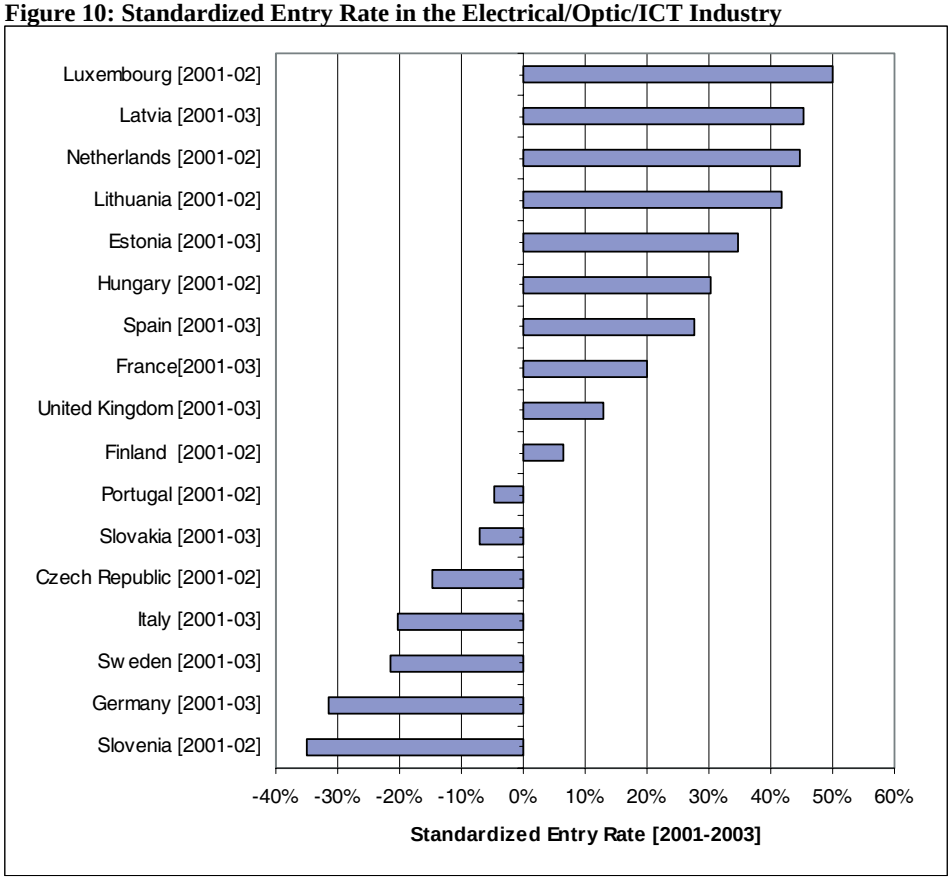
$$hyptan\left(\frac{DI^{\text{sector}}_{\text{home to foreign market}}}{DI^{\text{sector}}_{\text{foreign to homemarket}}} \Big/ \frac{DI^{\text{overall country}}_{\text{home to foreign market}}}{DI^{\text{overall country}}_{\text{foreign to homemarket}}}\right) - 1 .$$

Market Structure Advantage

From empirical studies about successful innovation designs from the Lead Market (Beise, 2001), a notable characteristic of these markets is particularly strong competition. The realisation that international innovation success is correlated with the intensity of competition may not be new (cf. Posner, 1961 and Dosi et al., 1990), but Porter (1990) was the first to find a conceptual link to a cause, namely that customers in very competitive markets can be "choosier" than in oligopolies or monopolies. Faced with strong competition, innovators are compelled to react increasingly to technological development (Mansfield, 1968, p. 144). The resulting competition between very different innovation designs often leads to a refined innovation that best fits customers' needs. This innovation design, which offers maximum utility to customers thanks to the competition on the national market, also has the best chances of winning through in international competition. Competition can therefore be understood as a process of decentralised coordination, by which all the participants attempt to achieve a better innovation design, so that the final design will also have a better chance of succeeding in international markets.
There are a range of known measurement concepts that could be used to establish the intensity of competition. Putting such concepts into practice often proves impossible, however, because of a lack of internationally comparable figures. Using the fact that markets with different degrees of concentration establish their prices differently, an approximation can be found for the intensity of competition on a market. Monopolists set their prices to maximise profits without being subjected to pricing pressure from competitors. In a market with perfect competition, firms theoretically adjust their supply to fit the market price. In this case, the price level is lower than that in a monopoly. Taking this relationship as a starting-point, we can assume under certain conditions – namely that we are dealing with homogeneous goods/services – that the price level on a market decreases with increasingly intense competition. The price level can thus be taken as an indirect indicator of competition on a market. As a cautionary reminder at this stage, it should be noted that the price level has already been used to illustrate the aspect of price advantage, as a relatively low price level is conducive to Lead Market advantages, which arise from the increased inclination to adopt an innovation and its quicker diffusion, in international comparison (cf. section 4.2). Since a low price level is always a positive aspect of demand structure, either as an indicator of prices or of competition, the ultimate result is unaffected by which Lead Market factor the indicator is allocated to. The same indicators can therefore be used to show advantages in price and market structure. This also suggests that although these two Lead Market characteristics can be separated in theory, it is not necessarily possible in practice. The results from section 4.2 should therefore be taken into account.

Furthermore, it is possible to show the intensity of competition on a market by referring to the occurrence of barriers to entry, because the formation of new firms not only promotes innovation but intensifies competition in their markets (Geroski, 1991). „Especially for upcoming technologies and when new product markets develop, divergent innovation designs compete with each other. Start-ups are likely to bring in new solutions and challenge established companies that enter these new markets, too" (Rammer, 2006). The logarithmic quotient of a sector's average market entry rate of new firms in a given country and the respective entry rate in the EU is an indirect measure to compare the sector-specific competition in different countries.[12] A negative (positive) log-value for a country means that the entry rate –and thus also competition on that market - is below (above) the average for the EU countries.

Figure 10: Standardized Entry Rate in the Electrical/Optic/ICT Industry



Source: Eurostat and ZEW Foundation Panel (for Germany).

12 $$ln\left(\frac{\text{Entry Rate}^{\text{sector}}_{\text{Country}=i}}{\text{Entry Rate}^{\text{sector}}_{\text{all EU-Countries}}}\right).$$

In the Electrical/Optical/ICT Industry, relatively concentrated markets with comparatively weak competition are to be found in particular in Slovenia, Germany, Italy and Sweden. Competition in Luxembourg, the Netherlands, the Baltic countries and Hungary, on the other hand, is well above the European average.

It should be noted at this point that there is a clear division between fostering market structures that stimulate innovation and promoting "national champions" to increase international competitiveness. The Lead Market approach is not based on targeting and strengthening individual actors, but instead on strengthening competition between all actors. The idea is that confronting innovators with free competition on the market at an early stage is a more effective way of increasing international competitiveness than offering protection from competition in the hope of building up a strong national position. From a technology policy point of view, this means focussing on measures that guarantee favourable conditions for the development of successful innovation designs. It is particularly important to ensure that (international) competition is enforced in industries in which the home country has few structural advantages. This can be achieved by implementing legal measures to prevent cartels, promoting start-ups, supporting newer technology companies and breaking down non-tariff barriers to international trade.

Conclusions and implications for innovation policy

In the above sections we investigate the influence of demand on the innovation capability and competitiveness of the Electrical/Optical/ICT Industry in each of the EU-25 countries. Although demand is one of the decisive factors for the development of innovations, it has hardly been integrated in analyses of research and technology policy to date. The Lead Market approach brings market demand into the discussion, with the result that innovations can no longer be understood as purely supply-oriented and pre-competitive.

To evaluate the role demand and market structures play in the creation of innovations with international potential, country-specific properties – the so-called Lead Market factors - are derived. These help to explain a country's Lead Market potential in a given industry. If these factors are particularly favourable in a certain industry, the chances that innovations favoured by the national market will meet with high demand abroad are likely to be increased. Findings about the Lead Market potential of different markets must have an influence on the formation of business and political strategies for innovation. Furthermore, the findings could constitute a starting-point for the formation of innovation strategies in firms and for more efficient innovation policies. For these reasons, an attempt was made to determine the Lead Market potential of the EU-25

countries in the Electrical/Optical/ICT Industry on the basis of quantitative indicators. The Table 1 summarises these results once more.

Table 1: Lead Market potential of the EU-25 countries in the Electrical/Optical/ICT Industry

Country	Advantage				
	Price [PPP Statistics]	Demand [PPP Statistics]	Export [Trade Statistics]	Transfer [FDI]	Market Structure [Entry Rate]
Austria	+	-	+	-	**NA**
Belgium	+	+	+	**NA**	**NA**
Cyprus	-	+	-	**NA**	**NA**
Czech Republic	-	-	-	-	-
Denmark	+	-	+	**NA**	**NA**
Estonia	-	+	-	**NA**	+
Finland	+	+	-	+	+
France	+	+	+	+	+
Germany	+	-	+	-	-
Greece	-	-	-	**NA**	**NA**
Hungary	-	+	-	**NA**	+
Ireland	+	-	-	**NA**	**NA**
Italy	-	+	+	**NA**	-
Latvia	-	-	-	**NA**	+
Lithuania	-	+	-	**NA**	+
Luxembourg	-	-	-	**NA**	+
Malta	-	+	-	**NA**	**NA**
Netherlands	+	-	+	**NA**	+
Poland	-	-	-	-	**NA**
Portugal	-	-	-	-	-
Slovakia	-	-	-	**NA**	-
Slovenia	-	-	-	**NA**	-
Spain	-	-	-	**NA**	+
Sweden	+	+	+	**NA**	-
United Kingdom	+	+	+	-	+

Note: +: above average advantage; -: below average advantage; NA: Not Available

One can see that France has the biggest Lead Market advantages in the Electrical/Optical/ICT industry. All the five Lead Market factors show above average values. The French companies are the most successful in aligning their product innovations to the preferences of international customers. Companies in other countries have, for at least one Lead Market factors, below average values – with the possible exception of UK, Sweden, Finland and the Netherlands. What does this mean for the companies in these markets? In innovation strategies based on the Lead Market approach, market research on the Lead Market – not necessarily the home market – takes centre stage when product innovations are in the development phase. Companies in countries that do not have sufficient above average Lead Market attributes should target their product innovations to fit the preferences of users in the Lead Market. In the case of the Electrical/Optical/ICT industry these are the clients in the French market.

A country can seek to improve its Lead Market position by strengthening its Lead Market factors and dealing with any disadvantageous characteristics the market may have. Of the five Lead Market factors, only few are of an "inherent" nature and thus cannot be changed. Most of the Lead Market factors can be influenced by political measures. When formulating innovation policy or deciding on what basis to award subsides in a particular industry, more emphasis should be placed on the situation in the relevant Lead Market. Several factors can make a great difference in this case: Does demand in a country promote innovation on the part of the companies there in a way that strengthens these companies' position in international competition (i.e. they can play a Lead Market role)? Is demand at home following a unique path of its own (i.e. the home market is idiosyncratic)? Or are innovations not driven by demand at all, but instead by technology? For the Lead Markets identified within the scope of this paper, the need for political action is limited to securing these Lead Market properties:

- Forcing or protecting competition at home (including the promotion of start-ups, especially in the fast-changing field of cutting-edge technologies). This does not, however, mean dissolving natural monopolies (e.g. rail networks, etc.) to create competitive markets, as doing so would be disadvantageous for the local infrastructure.
- Dismantling regulatory frameworks which prescribe technological solutions that are too narrowly defined.
- Supporting companies' efforts to internationalise (making direct investment easier, breaking down barriers to trade, unifying international standards).

Lag Markets are characterised by the fact that they take up innovations that have proved successful in other countries. This is not necessarily because there is no desire to innovate on the home market. Companies in Lag Markets would often like to adopt certain (national) innovation designs, but the advantages of doing so are outweighed by those of using an innovation design from abroad. Examples of when this can occur are when the home market is small or when

there is a high degree of uncertainty about the reliability of the home innovation design. It is often not possible to influence these mechanisms on a Lag Market in a decisive manner by means of policy. If this is so, innovation policies should abandon subsidising local technologies in favour of promoting instruments that make it easier to take over designs from the Lead Market. This will serve to prevent the production of idiosyncratic innovations, which would later be crowded out by the Lead Market design worldwide.

It is advisable to make internationally-oriented innovation policies, to make use of the cost advantages of new technologies quickly. Such policies could include supporting small and medium-sized enterprises in their efforts to adopt technologies or in their applied research, provided it is targeted at finding new solutions within the scope of the dominant innovation design. Fast diffusion also creates opportunities to develop the dominant design further, either with a view to occupying new niches in the market, or in order to offer complementary products and services and win market share from Lead Market companies. Countries that are “fast followers” can often attain a high share of the world market, because they are able to learn from the pioneers but do not bear the same development costs. However, any strategy of being a "fast follower" should also be Lead Market oriented. To this end, it is advisable for firms to have some direct, on-the-spot presence, enabling them to receive signals from customers and further develop products. The information disadvantage for Lag Market companies can also be redressed by means of cooperation with firms from the Lead Market. Schemes to promote research should also be open to such international cooperation projects.

Idiosyncratic markets, on the other hand, are characterised by the adoption of a national innovation design, which competes unsuccessfully with other innovation designs, limiting the industry’s export potential. The challenge for innovation policy here is to combat idiosyncratic demand structures. Possible ways of doing this are to relax national regulations or adapt them to better fit with Lead Markets, internationalise technical norms and pluralize government and monopolistic demand by opening the relevant markets. Politicians involved in such processes should, however, be aware that implementing such fundamental structural changes to the basic functioning of a sector’s innovation system is a difficult process which requires long-term commitment.

It should also be stressed once more at this juncture that the Lead Market concept by no means claims to be the single valid model to explain the international success of innovations. Instead, the aim is to include the distinctive features of demand on a given market in discussions of innovation policy, as an additional explanatory factor. The sense of taking the Lead Market concept into consideration in innovation policy is therefore not to oppose the approaches followed up to now by means of a polarising model, but to refine the traditional instruments used in subsidisation and regulatory policy.

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INFLUENCE OF QUANTITATIVE AND QUALITATIVE FACTORS OF BANKING SECTOR DEVELOPMENT ON ECONOMIC GROWTH IN SOUTH EAST EUROPEAN COUNTRIES*

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Abstract

The aim of this article is to determine the level and the nature of the quantitative and qualitative factors' influences on development of the banking sector and their influence on economic growth in South-East European countries (SEE). We used a OLS model with panel-corrected standard errors (PCSE) and panel data from six transition countries for the period 1999-2006. We measure the qualitative development in the banking sector with the margin between deposit and lending interest rates (INT). Quantitative aspects of the banking sector were measured using variables: Domestic credit to private sector as share of GDP and variable Domestic credit provided by banking sector as share of GDP. Quantitative development of the banking sector affects the economic growth in the observed period, since variable Domestic credit provided by banking sector proved statistically significant. However, the second variable, Domestic credit to private sector, did not prove to be significant in the observed period. With respect to the results obtained for the qualitative banking sector development, the INT variable did not prove significant for economic growth.

JEL classification: E58, G21, O42

Key words: banking sector, economic growth, quantitative and qualitative financial sector development, South-East Europe, Europe, OLS with panel-corrected standard errors (PCSE)

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1. Introduction

Numerous empirical studies on growth determinants in transition countries (De Melo et al.; 1996, Havrylyshyn 2001, Berg et al. 1999) attempt to explain differences in economic growth performances. However, the studies did not pay particular attention to the relatedness between financial market and economic growth. Drakos' paper (2002) discusses effects of banking sector structure on economic performances, while Koivu's paper (2002) deals with quantitative and qualitative aspects of the banking sector and their influence on the banking sector. In this context, this paper also attempts to give a modest contribution in filling the gap in the literature. Therefore, we concentrate on banking sectors as they typically have dominated financial intermediation in transition countries. We emphasise the importance of both the qualitative and the quantitative aspects of the banking sector and measure the qualitative development in the sector with the margin between deposit and lending rates used in Koivu (2002). As in many earlier studies, our second variable for the level of financial sector development is Domestic credit to private sector as share of GDP (DCTPS). Besides this variable, the study also used variable Domestic credit provided by banking sector as share of GDP (DCBS), which we did not encounter in earlier empirical studies. We used an OLS with panel-corrected standard errors (PCSE) and data from six transition countries for the period 1999-2006. By empirical analysis, we primarily wanted to test the earlier papers' results, using data for longer tome periods, and then try to gain some new insights using some additional variables.
In section 2 we discuss theoretical framework about financial system development and growth. The following section 3 presents the data used in this study and methodology. Section 4 summarises the empirical results, and section 5 provides overall conclusions.

2. Theoretical framework

Technological changes and capital accumulation are the driving forces for sustained economic growth in most macro-economic growth theories, including neo-classical and endogenous growth theories. The micro-economic rationale for financial systems is based largely on the existence of frictions in the trading system. As the integral part of the growth process is financial systems through provision of funding for capital accumulation and for the diffusion of new technologies. At the same time adequate functioning of financial systems can reduce information asymmetric and acquisition costs, through efficient connection of savers and investors and eventually influenced economic growth. Financial systems perform several functions that serve to ameliorate these frictional costs (Pagano, 1993; Levine, 1997) and thus bear on capital accumulation and technological progress. Four broad groups of services are

examined here: a) mobilizing savings; b) diversifying risk; c) allocating savings; and d) monitoring the allocations of managers (Leahy, 2001).
Postulating a link between financial development and economic growth entails relaxing some neo-classical assumptions. First, in an Arrow-Debreu model with no information or transaction costs, there is no need for a financial system. Hence, it is the costs of getting information and making transactions that create incentives for the emergence of financial markets and institutions. Second, in a neo-classical growth model, only the exogenous technology factor affects the steady-state per capita growth rate. Hence, in this theoretical framework, the level or type of financial development could affect the long-term growth rate only via a very limited route if it directly affected the *rate* of technological progress (Tsuru, 2000).
A recent surge of interest in the link between financial development and economic growth has resulted mainly from the development of endogenous growth models, which raise the possibility of an influence of institutional arrangements on growth rates. These models could thus offer important insights to the impact of financial development on economic growth. Through changes productivity of capital or the efficiency of financial systems and/or the saving rate, financial development could influence the economic growth rate.
As the consequence of finance-growth relationship, more efficient transformation of saving into investment and the effect on the saving rate become the channels through finance influences economy growth. The efficient of a financial system is related to the allocation of funds to the most profitable projects. In such a way, by allocating capital more efficiently, a financial system could improve the productivity of capital, and hence economic growth. However, this process is costly. First, in order to find the most profitable project, financial systems need to monitor or screen alternative projects. Even if high-return projects are detected, their possible high risks might discourage individuals from investing in these projects. Thus, financial systems must play a role of risk-sharing and induce individual investors to invest in riskier but higher-return projects. The role of information acquisition and risk-sharing by financial intermediaries was explored by Greenwood and Jovanovic (1990). Bencivenga and Smith (1991) showed that financial intermediaries have possibility to enhance the productivity of capital and influence the growth rate through funds allocation to more illiquid and productive assets and reducing the premature liquidation of profitable investments.

3. Data and modelling

The empirical analysis used data for 6 transition countries in South East region[†] in the 1999-2006 period. It is well known that there are significant problems

[†] Albania, Bosnia and Herzegovina, Bulgaria, Croatia, FYR Macedonia, Romania,

with transition countries data. Despite the fact that there are different sources for independent variables we used in the models, the aim was to use data from just a few sources in order to avoid problems resulting from different ways of defining the variables and collecting data.
Economic growth is a complex process affected by a number of factors, and theory gives us no clear or single answer to the question about the right model specification. Literature also contains a dilemma as to whether the dependent variable in the empirical analysis of economic growth should be the real GDP per capita growth rate or its value (Mervar, 2002). Most analyses use GDP growth rate, starting from the assumption that changes in the explanatory variables have a permanent effect on the GDP growth rate. Consequently, the dependent variable in the paper is the real GDP per capita growth rate. The source for this variable is the World Banks World Development Indicators database.

The paper analyzed the qualitative and quantitative financial sector development. It is a standard practice in measuring the quantitative development of the financial sector in empirical studies to use measures of components of the financial system (relative to GDP) such as: (1) Liquid liabilities, consisting of currency and interest-bearing liabilities of bank and non-bank financial intermediaries, is intended as a measure of the overall size of the financial intermediary system, (2) Private credit of deposit money banks provided to the private sector, consisting of the total claims of deposit money banks on the private sector, aims to measure the degree of financial intermediation that occurs in the banking system, (3) Stock market capitalisation, consisting of the value of listed shares, attempts to measure the ease with which funds can be raised in the equity market. An alternative measure is total claims of deposit banks and other financial institutions, the latter including insurance companies, finance companies, pooled investment schemes (mutual funds) savings banks, private pension funds and development banks (Leahy et al.; 2001). This study used two variables: Domestic credit to private sector (% of GDP)[‡] and Domestic credit provided by banking sector (% of GDP).
The qualitative effectiveness of banking sector was measured using the interest rate margin (INT) as the difference between deposit and lending rate in the banking market. According to Koivu (2002), the margin is likely a good estimator for efficiency in the banking sector as it describes transaction costs within the sector. If the margin declines due to a decrease in transaction costs, the share of savings going to investments increases. As growth is positively linked to investment, a decrease in transaction costs should accelerate economic

[‡] Credit to the private sector to GDP are the most widely used indicators to measure financial depth, i.e. the extent to which resources are intermediated across time periods and agents via the banking system.

growth. The source of the cited data are Transition Reports published by the EBRD. Deposit and lending rates are unavailable for identical periods for each country. The overall size of the margin, however, should not be affected significantly by lending/deposit periods and should not affect the empirical analysis results. Data that were not published in the Transition Reports were sourced from the data published by national economies' banks and statistics agencies.

Data for the cited indicators were sourced from IMF's International Financial Statistics and World Bank Development Indicators. Use of Domestic credit to private sector and Interest rate margin as variables allowed us to compare results to previous studies such as that by Kiovu (2002).

In order to control other factors affecting the economic growth, a certain number of control variables were used. Macroeconomic stability, as the first control variable, was approximated as the inflation rate – consumer price index. In line with the results of a number of studies (De Melo et al. 1996, Havrylyshyn et al. 1998, Berg et al. 1999), we expect higher inflation to have a negative influence on economic growth. The source for this variable is the World Development Indicators database. Data for independent variables that were missing in the WDI base were complemented with those published by National Statistical Offices in the sample countries.

The second control variable was the Transition index (TI), which consists of ten indices published by EBRD. These indices measure Large scale privatisation, Small scale privatisation, Enterprise restructuring, Price liberalisation, Trade & Forex system, Competition Policy, Banking reform & interest rate liberalisation, Securities markets & non-bank financial institutions, Overall infrastructure reform and Telecommunications. For each country, we have taken a simple average of these indices for each year. The expected sign for this variable is positive.

Liberalization of trade could be closely related to economic growth. The share of exports and imports in the observed countries to GDP was used as the degree of openness. The expected sign of coefficient with this variable is positive.

Besides the described variables, the study controlled the effect of FDI on economic growth. For this purpose, we used indicators of the share of FDI inflow in GDP and the number of foreign banks in the observed countries. Sources for these data included EBRD Transition Report and Vienna Institute for International Economic Studies (WIIW) database for 2006.

In this study, we estimated fixed-effects models (FEM). This type of model is basically an Ordinary Least Squares (OLS) regression that includes a dummy variable for each country to account for country-specific effects (LSDV model). The OLS method is optimal if error processes have the same variance (homoscedasticity) and all of the error processes are independent of each other. Nevertheless, the panel data are typically plagued by complicated error processes (Beck & Katz, 1995):

· panel heteroscedasticity (i.e. variances of the error processes differ from country to country);
· contemporaneous correlation (i.e. large errors for country i at time t will often be associated with large errors for country *j* at time *t*); and,
· serial correlation (i.e. errors for each country show temporal dependence (autocorrelation).

We therefore used tests for checking on the presence of heteroscedasticity and autocorrelation. First, a modified Wald test for groupwise heteroskedasticity in fixed effect regression model reveals the presence of heteroscedasticity, which, while leaving coefficient estimates unbiased, can significantly influence standard errors and therefore affect hypothesis testing. In addition to heteroscedasticity, the estimates using FEM model are also affected by serial correlation. In particular, a Wooldridge test for autocorrelation in panel data rejects the null of first order serial correlation. Suppose that autocorrelation is eliminated from the data, but panel heteroscedasticity and contemporaneous correlation is still present. In this case, OLS yields consistent estimates, but OLS is not optimal: in other words, other estimators exist that are more efficient. But a much more serious problem is that OLS standard errors are unreliable. Since one usually assumes that panel data inherit this complicated error processes, Generalised Least Squares (GLS) methods that account for panel heteroscedasticity and contemporaneous correlation are often used instead. Nevertheless, Beck and Katz (Beck & Katz, 1995 and 1996) showed that these approaches significantly underestimate the variability of the estimated coefficients, especially if the sample size is small. In this study, we followed the suggestions of Beck and Katz and estimated OLS model (with countries dummy variables) with panel-corrected standard errors (PCSE) that account for panel heteroscedasticity and contemporaneous correlation to assure reliable standard errors.

We thus estimate the following regression:

$$GROWTH_{it} = \beta_{0,i} + \beta_1 FINANCE + \beta_2 (CONDITIONINGSET) + \varepsilon_{it}$$

where the dependent variable, GROWTH, equals real GDP per capita growth rate, β_0 is constant, FINANCE equals either INT or DCTPS/DCBS and CONDITIONINGSET represents a vector of conditioning information that controls for other factors associated with economic growth. The error term is ε_{it}. Empirical analysis was conducted for period 1999-2006. Since our panel data set is quite small, we have to keep an eye on the degrees of freedom when specifying the models, giving the priority to specifications with a smaller number of explanatory variables

4. Results

Results from the panel estimations are presented in Table 1.

Table 1: Panel regression results

	1	2	3	4	5	6	7	8	9	10
DCTPS		0,12 (0,11)		0,15 (0,10)		0,10 (0,09)		0,14 (0,12)		0,21* (0,12)
DCBS	0.47** (0.20)		0,47** (0,21)		0,49*** (0,17)		0,66*** (0,26)		0,74*** (0,26)	
INF	-0.07** (0.03)	-0,08** (0,03)	-0,08** (0,03)	-0,09*** (0,03)	-0,08*** (0,03)	-0,08*** (0,03)	-0,06* (0,03)	-0,08** (0,03)	-0,07** (0,03)	-0,09*** (0,03)
OP	0,96 (0,68)	1,23** (0,58)	1,59 (0,96)	1,90** (0,87)	0,80 (0,58)	1,15** (0,50)	0,84 (0,68)	1,21** (0,57)	1,76* 0,96)	2,06** (0,87)
INT	-0.06 (0.22)	-0,04 0,22	0,125 (0,23)	0,15 (0,24)	-0,11 (0,18)	-0,08 (0,20)	-0,23 (0,22)	-0,09 (0,24)	-0,02 (0,23)	0,09 (0,25)
TI			-3,19 (2,46)	-3,58 (2,44)					-4,97* (2,70)	-4,60* (2,53)
FDI/GDP ratio					0,17 (0,14)	0,13 (0,14)				
No. foreign banks							0,03* (0,01)	0,01 (0,01)	0,04*** (0,01)	0,23* (0,01)
R-sq	0.42	0,39	0,44	0,41	0,56	0,49	0.42	0,39	0,48	0,42
Prob>F	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Number of obs.	44	44	44	44	44	44	44	44	44	44

Source: Authors' calculations

Note: Asterisks indicate variables whose coefficients are significant at the 10%(*), 5%(**), and 1% (***) level, respectively. All regressions include a constant and country dummies (not reported in the table).

There is no precise counterpart to R^2 in the generalised regression model. The R^2 from the transformed model is purely descriptive (see Greene 1999:467).

Turning first to the results for the control variables, we note that, in most models, the variables display the correct sign and that coefficients cannot change significantly. This shows us the stability of the model. Of control variables, it should be noted that regression coefficient with INF has the expected negative sign and the statistically significance at the 1%, 5% and 10% in different models. Thus, results lead to the conclusion that the inflation effect, i.e. macroeconomic stability has a influence on generating higher economic growth rates. In case of the INF variable, the obtained coefficients also have the same value. The second control variable, OPENNESS, has the expected positive sign although its significance is different. It is interesting to note that the OPENNESS variable is statistically significant mostly in models that include the DCTPS variable. The third control variable TI does not have the expected positive sign, and is significant only in models that include the proxy variable on the number of foreign banks. The obtained result for this variable can be explained by small within standard deviations, which suggests that

coefficient for TI may not be as well identified as the others (Baum, 2006, 223). Proxy variables for FDI did not prove significant in explaining economic activity in the observed transition period, which is surprising since some studies revealed its significantly positive effect on the transition economies recovery. Certainly, we may assume that the size of FDI is significantly correlated with the achieved structural reforms, and that FDI inflow due to fluctuation is not a good indicator which, coupled with the short data series, probably explains such a result in the empirical analysis. This corresponds with the result obtained by Havrylyshyn, Izvorski and van Rooden (1998), who also did not find the that the link between FDI and growth is important. On the other hand, the foreign bank penetration ratio, which captures financial sector evolutions which are more qualitative, exerts a positive impact on growth.

In all models, domestic credit to private sector is expectedly positive but not significantly (except in model 12). The second variable that approximates the quantitative banking sector development, DCBS, has a significant impact on economic growth. With respect to qualitative banking sector development, the INT variable has the expected negative sign in most models, but is not statistically significant.

Based on the obtained results, it can be concluded that quantitative development of the banking sector affects the economic growth in the observed period, since variable DCBS proved statistically significant. Due to the use of different indicators for the qualitative banking sector development, DCTPS and DCBS, a possible explanation for the obtained results can be found in the credit supply to different target groups (the private and the public sector), which can have a different effect on economic growth. Thus, domestic credit, which includes private credit as well as credit to central government, was more important for growth than private credit. The obtained result corresponds with conclusions by Fink et al. (2004). In line with Breyer et al. (2004), credit to the public sector may be growth-enhancing as well, because foreign banks finance budget and current account deficits. This creates a certain mutual dependency of the public and the financial sector. In turn, the interest of foreign banks in an efficient, sound, regulated, and stable financial sector is aroused in order to mitigate country risk and promote economic development (Eller et al., 2005). Besides, the increasing credit supply) frequently does not suffice to affect investment and achieve higher rates of economic growth. Countries can even have high investment rates but achieve low economic growth rates, such is the case in the former Soviet Union. In such cases, the capital was simply not allocated in an efficient way in terms of the sector the loan was placed in (Eller et al., 2005).

Contrary to quantitative development, the qualitative banking sector development in SEE countries did not prove significant for economic growth. A

possible explanation may be found in the fact interest rate margins were and still are higher (compared to EU and CEE financial markets), and that the increase in credit volume is probably not due to decreasing interest spreads. Thus, the obtained results are not in line with the results of studies such as those by Koivu (2004), who found evidence that increasing financial sector efficiency measured by interest margins has growth-enhancing effects on CEE economies in transition. Admittedly, available time series may be still too short to uncover such an impact, since the reduction in interest rate margins had been faster in the first period of transition.

5. Conclusion

The paper examined the link between the banking sector and real GDP growth in SEE transition economies. We used a OLS (with countries dummy variables) with panel-corrected standard errors (PCSE) that account for panel heteroscedasticity and contemporaneous correlation to assure reliable standard errors and data from 6 transition countries for the period 1995-2006. We used variables to measure the level of qualitative and quantitative effectiveness of financial sector development. Two variables were used as proxy variables for quantitative development of the banking sector: Domestic credit to private sector (% of GDP) and Domestic credit provided by banking sector (% of GDP). On the other hand, the qualitative indicator used was the margin between deposit and lending interest rates.

Overall, the results suggest that quantitative development of banking sector affects the economic growth in the observed period, since variable DCBS proved statistically significant. However, the second variable, DCPTS, did not prove to be significant in the observed period. The most plausible explanation can be found in credit supply to different target groups (the private and the public sector), which can have a different effect on economic growth .
With respect to the results obtained for the qualitative banking sector development, the INT variable did not prove significant for economic growth. A possible explanation may be found in the fact that interest rate margins were and still are higher compared to EU and CEE financial markets, and that the increase in credit volume is probably not significantly due to decreasing interest spreads.

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VEHICLE-TO-GRID - WHAT IS THE BENEFIT FOR A SUSTAINABLE MOBILITY?-

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Abstract

The demand for vehicles in industrialised countries is dropping and the growth rate in developing countries is slowing down rapidly. Driver of this evolution is evidently the current crisis but also the expectation that in the long run oil will not be sufficient and finally. Paper discus about that situation.

JEL classification: D20, L11

Key words: vehicles, mobility

Introduction

The automobile industry is undergoing a deep recession. The demand for vehicles in industrialised countries is dropping and the growth rate in developing countries is slowing down rapidly.[1] Driver of this evolution is evidently the current crisis but also the expectation that in the long run oil will not be sufficient[2] and finally, one cause is a rise in oil costs.[3] Another argument for the change in the current paradigm is the environmental policy. Because of the expected external costs due to global warming and pollution,[4] politics are

[1] See e.g. Deutsche Bank Research: Automobilindustrie am Beginn einer Zeitwende, Beiträge zur Europäischen Integration, February 6th 2009

[2] The Chief Economist of the International Energy Agency declared "We should abandon oil before oil abandons us", cf. Schneider, A.: »Die Sirenen schrillen«, Interview Fatih Birol, in: Internationale Politik von April 2008, S. 34 – 45, p. 37

[3] The American Energy Information Administration (EIA) still expects different scenarios for the future, but forecasts that a higher projection will be more likely. In this case the price of oil would reach 186$ a barrel in 2030. Cf Energy Information Administration (EIA): International Energy Outlook 2008, Washington 2008

[4] See for more details for the cost expectation of global warming , Stern, N.: The Stern Review: The Economics of Climate Change, Cambridge 2006 and Stern, N.: Emissionsrechte zu verschenken ist eine ganz schlechte Idee, FAZ Nr. 229 from September 30th 2008, p. 14. To have a good estimation of the external costs in the European Union, see Nash 2003 p. 36. For

trying on all economic levels to internalise these costs. They think about new frameworks to change the incentives of the different economic actors. This can be observed with the Kyoto Protocol on the worldwide level, on the regional level with new environmental and automotive policy e.g. in Europe[5] and certainly, in several countries[6] (e.g. France[7], California or Germany) or even cities (Frankfurt am Main e.g. London, Stockholm, Paris etc.).
Uncertainties regarding the availability of oil and new legal requirements will deeply impact the future technological paradigm of the automotive industry. Which technical solution will be the most promising: optimized internal combustion motors powered with fossil or bio energy, Hybrid Vehicles, Electric Vehicles, Hydrogen Vehicles? Nobody can make a serious projection but because of the high energy efficiency and limited pollution on a well-to-wheel view[8], Electric Vehicles seem to have good chances on the future markets[9].
Electric Vehicles additionally offer synergies between several stakeholders like car drivers, electric power suppliers, employers and all parties which could be interesting to lower more energy consumption and environmental pollution and their related costs. This debate is discussed especially in the US and is called Vehicle-to-Grid (V2G) concept.[10]

Vehicle to Grid concept

further detailed information about external costs in the transport sector, please refer to European Commission 2008. A study by INFRAS, IWW, Universität Karlsruhe estimates the external costs of transport without traffic congestion to be 650 billion €. See Infras 2004 p. 6 et seqq

[5] See for more details the European Parliament legislative resolution of 17 December 2008 on the proposal for a regulation of the European Parliament and of the Council setting emission performance standards for new passenger cars as part of the Community's integrated approach to reduce CO2 emissions from light-duty vehicles (COM(2007)0856 – C6-0022/2008 – 2007/0297(COD)), http://www.europarl.europa.eu, Texts adopted

[6] To have an overview on the different taxes in Europe see for instance BMW (ed): BMW group Zeitung 9/2008

[7] Similar to the domestic appliance energy efficiency rating, France has e.g. devised a scheme „Bonus Malus“, which evaluates the carbon dioxide emissions from cars. A carbon dioxide exhaust of less than 130 g/km gives a bonus (tax break) from 200 to 5.000€. The tax on new cars with a carbon dioxide exhaust emission of more than 161 g/km is between 200€ and 2600€. See for more details ://www.developpement-durable.gouv.fr

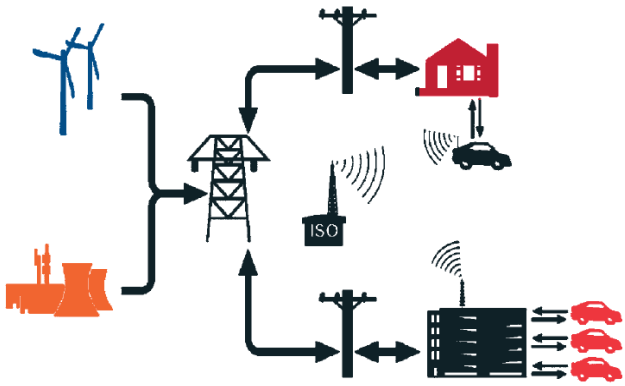
[8] The well-to-wheel approach is a systematic approach assessing energy consumption, greenhouse gas emissions and considers not only the CO_2 produced when the fuel is used in the vehicle, but also the CO_2 emitted in the fuel's production and distribution, whether from crude oil, biomass or other primary energy sources.

[9] See e.g. Deutsche Bank Research: Automobilindustrie am Beginn einer Zeitwende, Beiträge zur Europäischen Integration, February 6th 2009

[10] See e.g. Kempton, W.; Dhanju, A.: Electric Vehicle with V2G – Storage for Large Scale Wind Power, Windtech International 2006

The possibility to receive benefits for all the stakeholders described in a very brief way is seen as follows. The owners of cars with batteries (Electro Vehicles or Hybrid Vehicles) charge their batteries in times when power providers have to face a low demand ("valley filling", see figure 1). The valley filling strategy is just one opportunity to raise synergies with power providers. Another possibility is to use the batteries of electric vehicles for "peak shaving". This means that electric vehicles would send power back to the grid when demand is high. The advantage of this method is that it could make wind energy or other alternative systems more economically viable, more efficient, more stable and reliable.[11]

Figure 1: "valley filling" and "peak shaving"



Source: Kempton / Dhanju (2006)

Environmental benefits and new business models

Beside the mentioned energy efficiency and low pollution of electric vehicles by itself on a well-to-wheel view, a combination of it with power provider can raise additional synergies through "valley filling" and "peak shaving" and, in this way, benefit to the environment. Unfortunately, homogenous and detailed evaluations of the savings do not exist now.
In France for instance, first estimations expect that a percentage of 15% of electric vehicle in the entire car fleet would increase the energy by just 3 % and reduce the CO2 emission by 90%.[12] The energy mix with a high part of nuclear

[11] Ibd.
[12] Gourevitch, A.; Lyon, L. (Boston Consulting Group Paris): La voiture électrique, rêve ou réalité ?, in: La Tribune du 07/10/2008).

energy explains a part of this result. Another Study in Germany projects that the entire German fleet could be powered with just 10% more electricity[13].

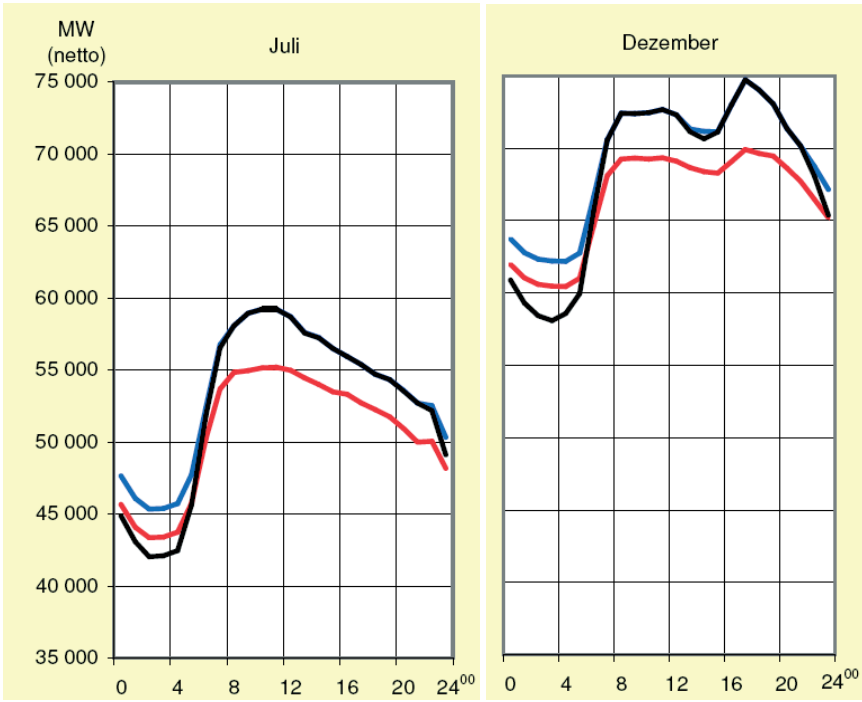
To develop such synergies, an agreement between power providers, the state and automotive industries should be investigated. Such agreements have been signed in Israel, Denmark, Australia, Hawaii (USA), San Francisco Bay (USA) or Canada with "Better Place"[14]. Other similar agreements have been signed in Portugal, Kanagawa (Japan), Tennessee (USA), Switzerland, Monaco and France.
"Better Place" is an initiative to bring the public and private sectors together to create necessary conditions to make zero-emission vehicles on a tank-to-wheel view. The aim is to provide a viable and attractive solution for consumers and to create and operate a nationwide network of charging stations for electric vehicles and related infrastructure. The idea of the business model is to transpose the business model of mobile phone to transportation: instead of buying minutes, the customer buys a range extension through a battery exchange station (infrastructure).
In Denmark, the "better place" project will be introduced by 2011. The objective is "to help reduce CO_2 emissions and increase the consumption of sustainable energy by capturing and leveraging wind power more efficiently".[15] Switching all vehicles to electric could effectively reduce the current emissions of CO_2 in Denmark by 17 percent. This project could help the goal of Denmark to reduce the emission of CO_2 by 21 percent by 2012.[16]

Benefits for the power provider

Thus, vehicle to grid seems to bring environmental benefits and raises interest in a lot of countries and, for companies furthermore provides a basis for new business models. The question now is to clarify if power provider can take advantage of this concept as well.
A specificity of providing energy is that the demand of electricity extremely varies during the daily 24 hours and over the year. The following graphs show exemplified the variety of produced and demanded electricity on the third Wednesday of July and in December 2007 in Germany.

[13] This is due to the high efficiency of electric vehicle and the raising of synergies with energy providers. Cf. Leuhold, J. : Antriebs- und Fahrzeugkonzepte für die Mobilitätsanforderungen der Zukunft, VDI Tagung Innovative Fahrzeugantriebe from 6th to 7th November, Dresden 2008
[14] See the global progress at http://www.betterplace.com/
[15] Anders Eldrup, CEO Dong Energy, cited from LaMonica, M.: Better Place Denmark to plug electric cars by 2011, http://news.cnet.com/8301-11128_3-10150716-54.html
[16] Better place: Dong Energy Close 103M Euro (770M Danish Kroner) Investment for Denmark Electric Car Network, press release from Jan 27th 2009

Figure 2: Output and load of German power plants of energy suppliers at the third of a month in 2007



Source: Bundesverband der Energie- und Wasserwirtschaft e.V. (BDEW). (to be published 2009)

The minimum is around 42 GW and the maximum around 75 GW (see figure 2).[17] This makes a considerable difference of almost 79% between minimum and maximum!

Regarding the necessity of an uninterrupted service on a constant level, the electricity suppliers have two possibilities to meet the market requirements:

- Producing or buying the electricity just in the moment when needed

[17] Bundesverband der Energie- und Wasserwirtschaft e.V. (BDEW). (2009). Jahresdaten der Stromversorger 2007. VWEW Energieverlag GmbH. 1. Auflage, (noch nicht erschienen, in Vorbereitung). Frankfurt am Main.

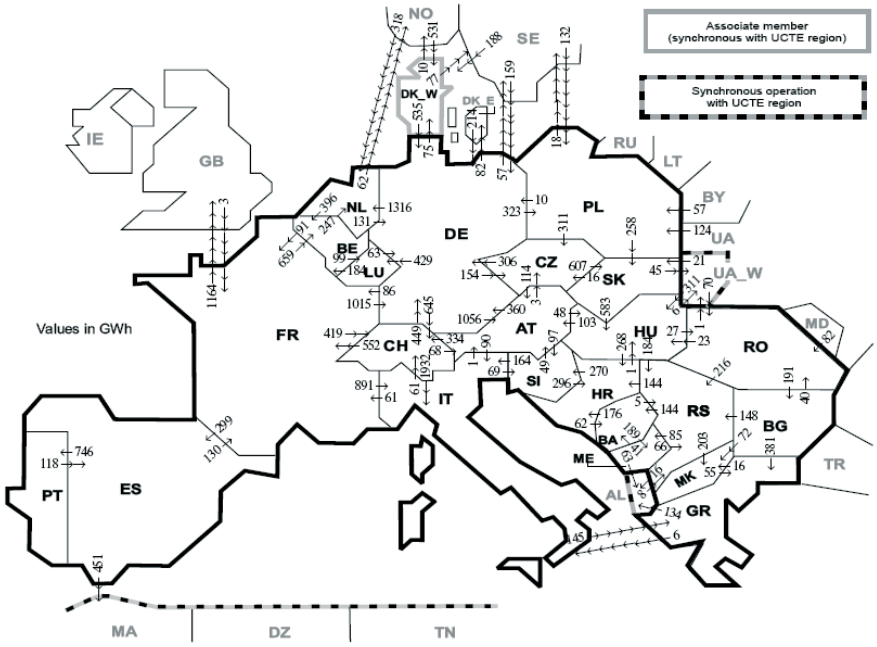
- "Storing" produced electricity during times of low demands to bring this electricity into the grids when needed during peak times of demand.

Both possibilities have technical and/or economical limitations:
To 1.: When production of electricity has to follow an extreme volatile demand, the capacities to produce electricity should be orientated at the theoretical maximum peak demand. Otherwise this demand, whenever it appears, could create a lack of electricity and a grid breakdown. This risk augments strongly with alternative energies like wind. To ensure the reliable production capabilities for the maximum peak means that during the rest of the time there is more or less unused capacity, since there is no demand for the electricity that could be produced. This creates fixed costs. In addition, the growing production of "unreliable" renewable electricity creates even more unused production capabilities. The wind and the sun will not necessarily provide power when demand needs electricity. Sometimes these wells of power even produce when the demand is low. This possibly reduces the utilisation of conventional electricity production capacities again. Buying electricity at a peak level is usually expensive selling at low demand brings only poor or no profits. For example: on Thursday January 29th 2009 the cost of one MWh at the European Energy Exchange Spot Market (EEX) varied between 37,10 € (between 04:00 am and 05:00 am) and 108,49 € (between 07:00 am and 08:00 am). The minimum and maximum price between January the 24th and January 30st was 8,84 €/MWh (2009-01-24; 06:00 – 07:00) and the above mentioned 108,49 €/MWh (2009-01-29; 07:00 – 08:00).[18]
To 2.: The available storing capacities for electricity are limited and expensive. Pumped-storage power stations need a lot of volume and a maximal vertical height. Both limit the geographical possibilities to build these storing capacities. Other storing possibilities like compressed air, batteries etc. are not used in a noteworthy volume. They are obviously too expensive and in the case of compressed air, they need a lot of energy which raises a lot of environmental questions and doubt about efficiency. [19]
As a result of the above described situation and, in order to keep the grid always stable, load management is very important for all electricity producing companies and countries as well as for companies that use very much electricity.
This is true for the course of a day but also for example between the needs of regions like in Europe where "...the (UCTE) coordinates the operation and development of the electricity transmission grid...." to provide "..a safe

[18] See for more details http://www.epexspot.com/en/
[19] See for more details Cyphelly, I.; Rufer, A.; Brückmann, Ph.; Menhardt, W.; Reller, A.: Usage of Compressed Air Storage Systems, Ordered by the Swiss Federal Office of Energy, Les Brenets 2004

electricity supply for some 430 million people..." (UCTE)[20]. The partners of UCTE try to help each other by selling or buying electricity to other partners. The idea is, the bigger the grid, the bigger the possibility to shape regional peaks or lacks of demand. This creates an enormous flow of energy between the partners as exemplary shown in figure 3. But even by using this international dealing for load- and production levelling, there is still the above shown volatility in capacity load and, therefore, in price.

Figure 3: Energy flow between UCTE countries in September 2008 in GWh



Source: UCTE, September 2008, Monthly provisional values, Page 3

Facing this background, thousands or even millions of V2G-batteries, paid or leased by the car drivers or a company like “better place” and used as flexible storing capacity, could be a major part of a smart grid and could create interesting new business opportunities for power providers. For Germany, by the year of 2020, one million electric vehicles (EV) are expected[21]. When each of these electric vehicle’s has a battery with a capacity of only 55 kWh (like today the electric vehicle Tesla Roadster) and only 92% of all vehicles are connected to the grid and the drivers allow a discharge of 50%, this gives an electric energy of 25,3 TWh.

[20] UCTE

[21] Cf. Herz, Carsten in Handelsblatt, 28.01.2009, S. 16

These electric vehicles could be used as buffers for peak shaving, valley filling, spinning reserve[22] or ancillary services[23].
Questions that are not answered yet are the following: How many electric vehicles are needed to provide the above mentioned services in a reliable and economical way to the electricity suppliers? The answer to this question depends on several variables.

a. Important is, for example, how many cars are connected to the grid at a time. For California, Kempton et al. 2001 calculated that in minimum 92%-95% of the electric vehicles should be connected to the grid at any time[24].

b. How much energy can an electric vehicle provide and in what given time can it be discharged? This depends on the further development of the batteries, the connection capacities and the range buffer the drivers need. Even when the capacities of the batteries increase, the volume of discharging per time is limited by technical reasons. The capacity of the grid connection could become another limiting factor since the maximal connection capacity in kw is limited. Range buffer means the minimum state of charge the owner of the vehicle requires to fulfil his or her transportation needs.

c. The technical needs for a reasonable metering and billing seem to be complex and to be corresponding to the level of flexibility for the driver and all other stakeholders. If the driver of an electric vehicle shall have the possibility to connect his or her car at home as well as on public or other private areas, the quantity and time of charging or discharging has to be counted and documented in detail. An identification of the car and the meter it was connected with has to take place and must be documented. Every kwh charged or discharged appears on two meters (car and local) and has to be stored and transported via IT to a clearing and billing unit. This IT-background (hard and software) has to work very reliable and secure at least nationwide, but better over the whole continent. The complexity could be reduced by using a business model like “better place” where just the used kwh are billed.

d. To meet the needed flexibility in connecting the car wherever the driver wants it to, a connection standard has to be established. Parts of this standard have to be for example the plug, the voltage and the clearing and billing software. These standards must be established between the automotive industry and the suppliers of electricity at least all over Europe.

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[22] Today spinning reserves are provided by immediately responding electrical generating equipment to respond when due to a shortly and heavy increase in demand more electricity is needed than produced. Cf. Kempton et al. 2001, P. 54

[23] Ancillary services that include more than spinning reserves are necessary to regulate the grid frequency by adding or subtracting power to or of the grid in response to slight changes in frequency. These services must be available every time since the response time must be extremely short to react to sudden and unanticipated loss of electricity supply. In Europe there is due to the UCTE less necessity for this kind of services than in the US. Cf. Kempton et al. 2001, P. 54

[24] Cf. Kempton et al. 2001, P. 28

e. The power providers have to install the infrastructure for a smart metering as far as this infrastructure is needed outside the cars.
f. The power providers have to create pricing models to meet the needs of the customers and their own needs.

Benefits for the customer of electric vehicles

The electric vehicles in the 1980s and 90s did not arouse emotion or passion. The offer was based on light utility ICE (Internal Combustion Engine) vehicles. Today's design is being successfully used to enhance the acceptance from consumers. Furthermore, new concepts are being designed to arouse greater interest by addressing the (non-existing) sound, the extraordinary acceleration, cutting-edge technology and the new lifestyle of electric vehicle. Besides these new arguments "a little good sense and public-spiritedness can be just as effective as a large amount of technical development".[25]
Different surveys are today confirming the newly founded interest of customers in electric and hybrid vehicles. An international survey, conducted by Continental, came to the conclusion that 45.8% of participants would take the purchase of an electric vehicle seriously into consideration and on average 36% of the customers are prepared to buy a hybrid vehicle. Comparing the attitudes of different countries, China is the country with the highest disposition to buy hybrid cars. Also, it has been proven that tax incentives increase the disposition to buy as the consumer can overcome the initial cost disadvantage of electric vehicle or hybrid vehicle. Looking at the price 50.8 % are not prepared to pay more for a hybrid car. The other half is disposed to pay a 2,781 € more for an environmental friendly vehicle.[26] This shows that a substantial portion of the population has a sense of public spiritedness. A German study comes to a similar result with 37% of the participants saying they would buy an electric vehicle, 15% would choose a hybrid vehicle and 48% would opt for a vehicle with a conventional engine.[27] When comparing vehicle costs, an electric vehicle is currently more expensive than a car with an internal combustion engine. This is especially true concerning the purchase price mainly due to the cost of batteries. As the operating and maintenance costs of an electric vehicle are low, it is interesting to see if the life cycle costs are still higher**.** Considering a usage over 12 years, and taking into account the evolution of battery costs, gasoline and electricity price, as well as improvements in ICE consumption, an ICE vehicle will have lifecycle costs of 38.604 € in 2010. The electric vehicle is 6% more expensive at 40.887 €. In 2020 the situation will probably be different**.** Progress in battery technology and mass production will make electric as

[25] CCFA: CO2 Emissions – Mobilising road transport…, Paris 2008, p.21
[26] Compare Krogh, H.: Alternative Antriebe im Aufwind, Automobilwoche, 27th June 2008
[27] Compare WP Consulting: Elektrofahrzeuge-Endkunden-Marketingstudie, Bremerhafen 2008

affordable as cars with internal combustion engines: The lifecycle costs of an electric vehicle will be 20% cheaper than a car with an internal combustion engine.[28]
A vehicle to grid infrastructure could additionally bring some incomes with the car by connecting it as often as possible to the grid. This gives the electricity suppliers the possibility to use the "electricity buffers" as described above. Also, large companies may see benefits from V2G if their employees connect their cars to the company grid to shave peaks in electricity consumption. The employee as car owners then could receive a part of this benefit. By calculating the costs and benefits of an electric vehicle used with V2G the investments of the meter on board and the shortage of lifetime of the battery, as a result of the increasing number of charging and discharging cycles, have to be taken into account. This degradation of the battery may be 4 to 8 times higher than the costs for the recharging energy.[29]
Another problem related to electric vehicle is the range. Looking from the customer's side, we should first note that since 2007, 50% of the world population lives in urban areas. In Europe and the U.S. the urban population is much higher at 72% and 81% respectively.[30] In developing countries the megacities will continue to grow steadily.[31] Furthermore, 75% of future travelling will be done in urban areas. In France 15-20% of the cars never leave towns and 30% of the vehicles are second cars.[32] Looking at the daily travel needs of the customer, 75% of European drivers use their cars less than 40 km in one day. In Germany the average driver travels 38.5 km a day, in France it is 35.3 km and in the UK it is 29.9 km.[33] Therefore, the range of the car need not to be high. But even when a large range is needed, a vehicle to grid infrastructure could serve as a range extender.

Benefits for the automotive industry

As mentioned above, the automotive industry suffers from cyclical and structural problems. A lot of car makers see electric vehicles as one chance to overcome the actual struggles: GM created the Volt, Volkswagen the TwinDrive-System and it cooperates with E.ON, Daimler cooperates with RWE, BMW starts tests with a fleet of electric powered Minis and Renault

[28] See Valentine-Urbschat, M.; Bernhart, W.: Powertrain 2020: The future drives electric, in: Automotive Insights n° 02.2008, Munich 2008, p.6-13
[29] Kempton et al. 2001, P. 35
[30] United Nations: Urban Population, Development and the Environment 2007, New York 2008, p. 90,92. For a better overview for the growing urbanisation see Weyman, O.: 2015 Car innovation, Innovationsmanagement in der Automobilindustrie, Düsseldorf 2007
[31] See Weyman 2007
[32] Gourevitch, A.; Lyon, L. (Boston Consulting Group Paris): La voiture électrique, rêve ou réalité ?, in: La Tribune du 07/10/2008
[33] Europäische Gemeinschaften, Eurostat: Kurzstreckenmobilität in Europa, Brussel 2005

cooperates with “better place”. These examples may show the seriousness of the trend of the electrification of mobility. Questions like standardisation of connections to the grid for charging reasons occur with all these cars. The step from an electric vehicle to a V2G only adds questions of standardisation of on board metering and IT-connection. This is crucial to meet the synergies between customer, power provider, car maker and the environmental issues.

Conclusion

To conclude, the electrification of mobility and the implementation of V2G offer interesting benefits for the environment. It also brings attractive options and benefits for different stakeholders like the power provider, customer of electric vehicles, their employers and car makers.
We are just at the beginning of a transformation of different techno economic paradigms[34] in our modern societies which are based on energy and mobility.This means that a lot of technical and economical options are possible and can influence, enhance or lower the benefits. This transformation is an opportunity to raise benefits for all stakeholders and to open new business fields. State regulations as well as innovation will therefore be determinant. V2G is probably such an opportunity. Improving our energy efficiency and lowering the pollution will also clear the way for a sustainable development and for future generations.

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[34] More about the techno-economic paradigm see Perez, C.: Structural change and the assimilation of new technologies in the economic and social system, in: Future Nr. 4 from October 1983, Bd. 15, S. 357 – 375; Freeman, C.: Die Verbreitung neuer Technologien in Unternehmen, Wirtschaftsbereichen und Ländern, in: Heertje, A. (Hrsg.): Innovation, Technik und Finanzwesen, Oxford 1988, S. 34 – 63; Freeman, C., Perez, C.: Structural crises of adjustment, business cycles and investment behaviour, in: Dosi, G., Freeman, C., Nelson, R., Silverberg, R., Soete, L. (Hrsg.): Technological Change an Economic Theory, London / New York 1988, p. 39 – 66

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Urban, Rural, and Regional Economics

POTENTIALS OF OSIJEK AS A CENTRE OF CULTURAL TOURISM

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Abstract

Cultural tourism is becoming the leading trend in the world tourism. Ever growing number of travellers put all of their free time and available resources in visiting and exploring of cultural sights. Sites of rich history and preserved tradition take precedence over usual summer arrangements. Active vacation is popular as well as travels that include visits to sights and adoption of cultural patterns of local culture. This ever increasing tourist area and the overall global trend can be also observed in Croatia. The Strategy for development of cultural tourism, which has been in use for several years, recognizes the present issues and shortcomings, and it gives recommendations for their solution. Being a town of rich historical and cultural tradition, Osijek also needs to find its model for development of cultural and tourism potentials.

JEL classification: R11, Z10

Keywords: cultural tourism, Osijek, heritage, model for development of cultural tourism

1. Introduction

In the following period it will not be possible to maintain the usual tourism model that has been dominant throughout the 20th century – 3S (sun-sand-see). What attracts extremely large number of tourists today are cultural attractions, i.e. heritage. Some towns base their cultural and tourist offer on the heritage itself, i.e. on archaeological sites, old buildings, etc. (for example, Egyptian pyramids). Some tourist destinations utilize their potentials through known cultural institutions, while some of the active tourist areas attract most of the tourists through cultural events, that is, projects. Analysis of cultural tourism issues as well as global and national trends will be presented in this paper, along with a proposal on how to develop potentials of cultural tourism in Osijek. The recent literature dealing with issues of cultural tourism and management in culture has been used here as well as various Internet resources. The account of the current situation in cultural offer is provided in the paper

and suggestions are made on how to improve that offer and utilize it to attract more tourists.

2. Cultural tourism and cultural tourists

The Strategy for development of cultural tourism in the Republic of Croatia differentiates between the three types of cultural tourists: "tourists motivated by culture; tourists inspired by culture; tourists attracted by culture2. (Strategy for development of cultural tourism, 2003; p. 6) Tourists motivated by culture find "attractive elite cultural events and tourist packages" interesting, and they make from 5 to 15 percent of the total number of tourists, and 5 percent of the local population. They are also motivated by their wish "to be treated as special guests". They could also be called 'real' cultural tourists. The largest group of cultural tourists is the group of tourists inspired by culture (about 30 percent of tourists and 15 percent of the local population). They are only 'partially motivated by culture', and what characterizes them in particular is the fact that they are attracted by "known cultural sites, attractions and events". They decide to visit cultural attractions in the following situations: "if they have time; if attractions are easily accessible; if attractions offer value for money". Tourists attracted by culture make 20 percent of tourists and 20 percent of the local population. As the Strategy states, "this group does not plan a visit to cultural attractions, but they will visit them if these are offered to them during their stay". (Strategy for development of cultural tourism; 2003; p. 6)
Strategy for development of cultural tourism of Croatia states the following definition of the term *cultural tourism*, in environment of Croatian tourism: "Cultural tourism is one of the special forms of tourism that offers a long-term competitive advantage to that field of Croatian economy". (Strategy for development of cultural tourism; 2003; p. 3) "Cultural tourism is considered a tourism of special interests", and it can be defined as "… visits of people outside of their permanent residence motivated entirely or partially by their interest in history, arts, heritage or lifestyle of the site, region, group or institution". (Strategy for development of cultural tourism; 2003; p. 5) Cultural tourism very often relies on history and tradition, i.e. preserved cultural heritage, and in this sense we can talk about the following type of travelling: "travels – reconstruction of historical events, (…) exploration of a historical period, (…) and religion travels"". (Dragičević-Šešić & Stojković, 2007; p. 175) As a form of cultural tourism there are also the so-called culture-oriented travels, that generally are not related to any particular country or region, "… but the travel is organized for the purpose of learning about a certain direction in arts, most often in the field of fine arts"". Dragičević-Šešić & Stojković; 2007; pp. 175-176) Anyway, we can talk about cultural tourism being not only the ever more propulsive branch of tourism, but also the object of ever growing interest of tourism experts and theoreticians.

2.1. Cultural tourism – management of cultural resources

Kombol states that there is a need for understanding and using culture in four ways: "supporting development of cultural and artistic creation; using arts and culture as a means of achieving objectives outside of culture and forming policies in the way to perceive culture and cultural development as a broad adjustable resource that refers to important features like identity and image of a country and a site; creating and strengthening the well-being of a community; protection of cultural resources by determining the capacity of sustainability or acceptance". (Kombol; 2006; p. 220) Various areas of attraction can become motives in cultural tourism: "archaeological sites; architecture (ruins, known facilities, the whole cities); museums, arts, sculptures, crafts, galleries, festivals, various events; music and dance (classic, folk and modern dance); drama, theatre, movies; language and literature studies (tours and events); religious celebrations, pilgrimages; overall (folk and primitive) culture and subculture". (Kombol; 2006; p. 214-215)

3. Cultural tourism and global initiatives

As the number of cultural tourists is growing every year, more institutional attention is given to his phenomenon. There is a whole range of institutions that are trying to promote cultural tourist destinations, develop certain cities, regions and countries through promotion of cultural forms of tourism, but at the same time to preserve the heritage, that is, the world cultural resources.

3.1. Cultural tourism and UNESCO

UNESCO is among the most important world institutions that are also in charge of cultural tourism promotion. According to UNESCO data, currently in the world there are 878 properties that are under special protection. In 145 countries throughout the world there are 679 properties under special cultural protection of UNESCO, 174 of them are on the list of protected natural heritage, and 25 are in a mixed project of cultural and natural protection. (http://whc.unesco.org/en/list)

Criteria for including a site on the list of protected heritage are extremely strict and hard to meet. There are ten basic conditions that have to be met, and the following six refer to the list of protected cultural heritage: "to represent a masterpiece of human creative genius; to exhibit an important interchange of human values, over a span of time or within a cultural area of the world; to bear a unique or exceptional testimony to a cultural tradition or to a civilization which has disappeared; to be an outstanding example of a type of building, architectural or technological ensemble or landscape which illustrates a

significant stage in human history; to be an outstanding example of a traditional human settlement, land-use, or sea-use which is representative of a culture (or cultures), or human interaction with the environment especially when it has become vulnerable under the impact of irreversible change; to be directly or tangibly associated with events or living traditions, with ideas, or with beliefs, with artistic and literary works of outstanding universal significance". (http://whc.unesco.org/en/criteria/)

3.1.1. Croatia and UNESCO

Currently there are seven sites in Croatia that are under special protection of UNESCO – six as protected cultural heritage (Historical Complex of Split with the Palace of Diocletian, Old City of Dubrovnik, Episcopal Complex of the Euphrasian Basilica in the Historic Centre of Poreč, Historic City of Trogir, The Cathedral of St James in Šibenik and Stari Grad Plain on the island of Hvar) and one on the list of protected natural heritage (Plitvice lakes National Park). (http://whc.unesco.org/en/list)
Historical-Town Planning Ensemble Tvrđa (*Fort)* has been put on the tentative list of UNESCO protected cultural heritage as an old historical city centre. Peczs, in the neighbouring country of Hungary, is a sister city of Osijek and it is an important partner of Osijek as well, because it has experience in candidation of its early Christian cemetery Sopianae for the list of protected heritage.

4. Cultural tourism in Croatia

It is a known fact that Croatia is perceived as a tourist country which bases a large part of its economical development exactly on this branch of economy. "It generates, both directly and indirectly, about 22% of gross domestic product, and more than 40 percent of the total export, which undoubtedly puts it among the key elements of the national economy and foreign trade exchange". (Strategy for development of cultural tourism until 2010, p. 5) However, development of Croatian tourism was mostly based on potentials of the Adriatic Sea, with insufficient or minimum investments in additional attractions. The 3S concept (sun-sand-see) should, nevertheless, be replaced with more advanced forms of tourism strategy – investments in continental (mostly rural), and cultural tourism.

4.1. Strategy for development of cultural tourism in Croatia

During 2003 the Croatian Ministry of Tourism, in cooperation with the Tourism Institute, has developed the key strategic document for more advanced approach to Croatian heritage-based tourism – Strategy for development of cultural tourism.

The following strategic development priorities are given in the Strategy for development of cultural tourism: "to create a positive natural environment that will encourage initiatives for development of products of cultural tourism; to an establish organization system and cooperation mechanisms between sectors; to raise the level of knowledge and skills necessary for development of good quality products of cultural tourism; to raise the level of interpretation, equipment and quality of products of cultural tourism; to improve the flow system of information, promotion and distribution of products of cultural tourism". (Strategy for development of cultural tourism; 2003; p. 17)
Problems, i.e. obstacles to development of cultural tourism are still a common phenomenon in Croatia. Jelinčić emphasizes several reasons for which cultural tourism has not been represented to a sufficient extent: "insufficiently developed system of cultural statistics; insufficient knowledge of project coordinators about cultural management; centralization and bureaucratism of procedures; a lack of a recognizable product of cultural tourism; superficial knowledge of the local population about their own heritage; insufficient or poor organization of promotion; insufficient cooperation between cultural and tourism sector; a lack of a counselling institution for organizers of cultural and tourism projects". (Jelinčić; 2008; p. 266)

5. Model for development of cultural tourism

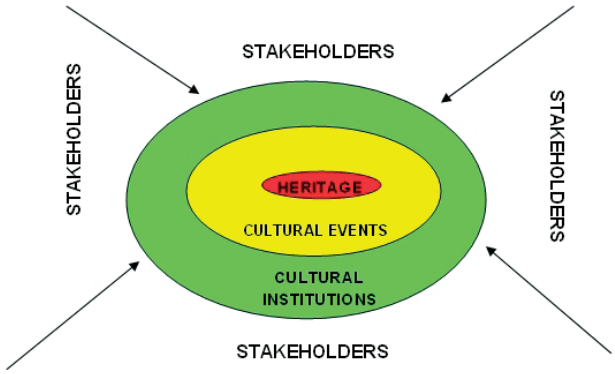
Heritage can be taken as the foundation for development of cultural tourism in any community – town, region, country. Heritage offers an autochthonous story to visitors, which attracts them to the tourist centre. The strategy for tourism development is developed around heritage as the foundation for development of cultural tourism. Heritage shall be approached in an interdisciplinary manner "… as a development path, as a way of thinking, as a way of forming experts in the future and as an only perspective of efficient protection". (Maroević; 1986; p. 51)
The next important element of cultural tourism development consists of cultural events. The existence of a separate form of tourism – festival or event tourism – reflects the importance of events, and it "… is developing at the same time as development of summer festivals (…) but also other large cultural projects (…) that always attract a large number of professionals and students from all over the world". Dragičević-Šešić & Stojković; 2007; p. 176-177)
The next important element in the strategy, i.e. in the model for development of cultural tourism, is cultural institutions, which take care not only about cultural events, but also about the heritage itself. These institutions take care about the culture of a town, a region, a country.
The following, equally important link in the model for development of cultural tourism are stakeholders. Whether these are citizens of a town/region/country,

the state or local authorities, or tourist boards or associations, stakeholders are those who represent the control mechanism and very often they make important decisions, ultimately defining the direction of the strategy itself.
According to this, the four key elements of the model for development of cultural tourism can be stated:

1. Heritage;
2. Cultural events;
3. Cultural institutions;
4. Stakeholders.

The cultural tourism development model can be presented in the following way:

Figure 1: Model for development of cultural tourism



Source: designed by the authors

6. Cultural tourism in Osijek

In order to obtain as good as possible image of the current situation in cultural tourism in the Osijek area, we will conduct a SWOT analysis. By determining internal strengths and weaknesses as well as external opportunities and threats we will find out what the real situation is.

6.1. SWOT analysis of cultural tourism in Osijek

STRENGHTS	**WEAKNESSES**
• Recognizability of cultural heritage – baroque Tvrđa *(Fort)* and Roman remains of Mursa • Long tradition of cultural life in Osijek • Large number of already existing cultural events • Good cultural projects • A range of various cultural institutions • Good position	• Insufficient recognizability of cultural events • Lack of cooperation among cultural institutions • Insufficient tourism activity in promotion of culture • Insufficient promotion and investment in marketing • A lack of linkage between culture and tourism • Insufficient accommodation capacities in the vicinity of attractive sites
OPPORTUNITIES	**THREATS**
• Ever growing interest for cultural tourism • Political will of the local and state authorities for development of cultural tourism • UNESCO and the European Capital of Culture as development potentials • International cooperation on joint projects • International initiatives • Interest of stakeholders for promotion of Tvrđa as a cultural brand of Osijek	• Large competition of cultural and tourist destinations in the country and abroad • Complexity and expensiveness of developing a Strategy for development of Osijek as a cultural and tourist destination • Insufficient investment in development of cultural tourism in the Republic of Croatia • Insufficient investment in modern means of communication (Internet promotion) • A large number of world sites that have invested in cultural tourism for a long time

6.2. Strategy and model for development of cultural tourism in Osijek

Here we are trying to analyze Osijek cultural scene by applying the earlier explained model for development of cultural tourism.

6.2.1. Heritage

Historical legacy, i.e. heritage should be used as a foundation for development of Osijek as the centre of cultural tourism. In case of Osijek, heritage consists of two important elements that are foundation for development of a strategy for cultural tourism: Tvrđa – the old baroque core of Osijek, where mostly the key cultural, scientific and other institutions are situated; and Mursa – the Roman site in the area of Donji grad (a part of Osijek), representing the oldest preserved settlements.

6.2.2. Cultural events

The cultural events that fit in the model for development of cultural tourism in Osijek should be listed.
The most recognizable and known cultural events in the Osijek area are: Osijek cultural summer; Osijek youth summer; UFO – Urban Fest Osijek; SLUK – a biannual selection of the best Croatian puppet performances; EPTA – international competition of young piano artists; Theatre Open Days; Children, the Theatre is Calling You; KristFest – ecumenical festival of culture; Krleža Days; Franjo Krežma Memorial; Graphic Arts Days; Slavonian biennale; A Night at the Museum; Christmas Concert; New Year's Concert; Land Without Borders.

6.2.3. Cultural institutions

In Osijek there is a range of cultural institutions that should be necessarily included in the building and realization of the cultural tourism strategy and implementation of this strategy.
In Osijek there are following cultural institutions:
1) Theatres:Croatian National Theatre in Osijek, The Children's Theatre of Branko Mihaljević
2) Town galleries in Osijek: Waldinger Gallery, Kazamat Gallery, Barutana (performance space), Art cinema (in the process of foundation, situated in the area of the northern town wall in Tvrđa *(Fort)*)
3) City and University library Osijek
4) Matica Hrvatska
5) Museums:Museum of Slavonia Osijek, Archaeological Museum, Gallery of Fine Arts, Puppetry Museum (in the process of foundation)
6) The State Archive
7) HAZU – Institute for Scientific and Artistic Work in Osijek
8) Academy of Arts (part of the University of Josip Juraj Strossmayer)
9) Kinematografi Osijek *(cinemas)*:Kino Europa, Kino Urania
10) Music School of Franjo Kuhač

6.2.4. Stakeholders

Stakeholders in the model for development of cultural tourism in Osijek are represented by the whole range of institutions – from the local authorities, over the University and non-government sector, to tourist offices and boards.

7. Conclusion

In order to have a successful and attractive tourist destination, it is no longer enough to emphasize the natural beauties – it is necessary to manage tourism resources and to direct efforts to develop a new type of tourism. Cultural tourism as a brand new trend was also popular in the past, but with increased education of today's travellers, the number of visits to certain places only because of cultural attractions (culture monuments, cultural institutions, events) is rising. Croatia, especially its continental part, can also seek its opportunity in the new world of tourists interested in culture.
Osijek also has large potentials for developing cultural tourism as a key economic activity. In the first place it is necessary to utilize the existing advantages, and to develop a clear strategy for development of tourism through cultural potentials. A successful model for development of cultural tourism can be created through a combination of heritage, existing cultural institutions and current and new events. Through applications for EU pre-accession funds, but also through participation in various European and global cultural initiatives, Osijek can become a new tourist hit destination.

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THE APPLICATION OF FACTORIAL AND CLUSTER ANALYSIS IN REGIONAL POLICY

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Abstract

The paper deals with the potential use of factorial and cluster analysis in defining a framework for regional economic policy, as well as a statistics framework acceptable to Eurostat. The spatial context of the study is Bosnia and Herzegovina. The paper uses factorial and cluster analysis and comparative analysis. The experience of Croatia in the application of these methods to the grouping of local entities by homogeneity is particularly relevant for the purposes of comparison. The topicality of the research is determined by the need to define an effective territorial or spatial framework for Bosnia and Herzegovina's regional economic policy, and to ensure that the framework will facilitate access to European funds, programmes and projects.

JEL classification: R11, R14, R58

Key words: factorial analysis, cluster analysis, regional policy, Bosnia and Herzegovina.

Introduction

The paper contain the results from scientific and research project Statistic (NUTS) Regionalization – the application of the factor and Klaster analysis on the example of Bosnia and Herzegovina financed by Fund for science. (Osmanković et al, 2009). Direct reason is in the Bosnia and Herzegovina obligation to select methods and manners of statistic, or NUTS regionalization in accordance to the goals, principles, the EUROSTAT criterions and experiences of the countries that defined NUTS regions of the second and the third level within the process of stabilization and association to EU. It understands the acceptance of the NUTS nomenclature, its principles, goals and

criterions. The purpose and essence of the statistic reorganization according to the EUROSTAT is in its use for the collection, improvement, harmonization of regional statistics in the countries EU members for the socio-economic analysis of the region, for defining regional policy of EU, for the accession to the funds, programs and projects of EU intended for the support of regional development. By signing the Agreement on stabilization and association all countries, including Bosnia and Herzegovina, are obliged to, besides others, within five years upon signing the Agreement, deliver to the Commission the indicators on GDP per capita for the level NUT 2. (Anon, 2007; Anon, 2007a) The similar importance was the interest for the application of relevant scientific, research, statistic methods within regional economic researches. The subject is the application of the factor and Klaster analysis in the procedure of the grouping of local units for the needs of the NUTS regionalization in Bosnia and Herzegovina.

The Methods

Certain statistic methods, especially factor and Klaster analysis, may be used in the procedure of grouping local units for the needs of the statistic (NUTS) regionalization in Bosnia and Herzegovina in order to define optimal regions for statistics, leading of regional policy and the access to the funds, programs and projects. It is the basic hypothesis being tested within this material. Its approval may contribute to the finding the solution for the salvation of actual situation which is "burdened" by the events from the first half of the nineties of the last century, by political tensions, by wrong or non systematic advises from local and international experts, by parallel existence of numerous regionalization for the sake of different social, administration, economic, political, social functions (Kronthaler, 2003; Somun-Kapetanović et al, 2007, Osmanković et al, 2008; Osmanković et al, 2008a).

Data contained in the publications of the Federal Institute for Statistics, Institute for Statistics of Republic Srpska, Federal Institute for programming, Central Bank of Bosnia and Herzegovina, tourist communities in Bosnia and Herzegovina, data from local communities, data from Institute for Employment of Republic Srpska, Institute for Employment of the Federation BiH, Institute for the employment in the cantons of the Federation BiH, data from the Ministry of Finance BiH, data from corresponding international organizations and institutions available in hard or/and e-form were used as the sources for the creation of relevant data base for factor and Klaster analysis (Kurnoga-Živadinović, 2007; Lovrinčević, et al, 2005; Marcou, 2005)

Factor analysis is a collection of mathematic-statistic proceedings providing in greater number of variables between which there is certain connection, to

determine smaller number of important variables which explain their connection. Prior to factor analysis, the analysis of coefficient of input correlation (input variables) is done. As input variables the following were used: area in square km, GDP per capita, employment rate in %, structure of employment – primary sector in %, structure of employment – secondary sector in %, structure of employment – tertial sector in %, total number of tourists, and total number of nights and coefficient of vitality. All variables were given for the year 2007. The analysis of the main components leads towards the main dimensions of development of treated areas. Upon conclusion of the factor analysis, its results are used in Klaster analysis in order to get homogenous regions (Klasters) composed from local communities of similar characteristics. (Rašić, 2005, 2). Klaster analysis is a technique of municipalities grouping into the group of municipalities or into the region. Municipalities within one region are similar and regions are different. Similarity between municipalities is identified by using different measures of distance, more often Euclid distance. The methods of the hierarchy Klaster analysis, k-means method, and alternative approach for the grouping of local units in Bosnia and Herzegovina were applied.

In the performing of research, the authors of the study found some difficulties. The first difficulty was related to relatively small number of the indicators of socio-economic development available on the level of municipalities in Bosnia and Herzegovina. The second closely connected problem was related to the fact that some indicators, such as GDP on the municipality level, were the results of the estimation from the Institute for programming of development in the Federation BiH.

NUTS regionalisation as framework for statistic and regional policy

The Decree number 1059/2003 from May 26 2003, users of the European statistics expressed the increasing need for the harmonization in order to get comparative data for the EU territory. Strategy of the Bosnia and Herzegovina integration to EU defined the following necessary measures under the items 3 and 5: to develop system of the official statistics in accordance to the EU and international standards and recommendations and as well to the local demands and assure continuous cooperation with Eurostat. Specific are the articles 88, 87 and 71 from the Agreement on Stabilization and Association between European Union, its members and Bosnia and Herzegovina. In accordance to this, the Commission is of the opinion that those conditions are fulfilled if the region, in accordance to the NUTS 2 level classification of geographic units, has gross domestic product (GDP) per capita, measured according to the parity of purchasing power, lower than 75% from the community average. Certain regions on the level NUTS 2, where GDP per capita overpasses 75% of the

Community average purely as a statistic effect of enlargement, are still, on the transition basis, considered adequate for such kind of help.

Further on, article 71, paragraph 7b of the Agreement says that by the end of the fifth year from the Agreement coming into effect, Bosnia and Herzegovina will deliver to the Commission the indicators on GDP per capita harmonized on the NUTS 2 level. Independent public body which will be formed meanwhile, and which will treat these issues, will together with the Commission make common evaluation on the feasibility of certain regions in BiH and the maximal intensity in this regard in order to complete the map on regional help on the basis of relevant instructions from the commission.

Results of the factor and klaster analysis

Results of the application of factor and Klaster analysis on the basis of socio-economic characteristics in grouping local units for the needs of defining optimal statistic NUTS regions and the frameworks of corresponding economic regional politics on the example of Bosnia and Herzegovina and Croatia show that it is one of possible manners which is not used enough. Those analyses are mostly used in sociological, psychological and research marketing.

Starting from the criterion of homogeneity, on the territory of Bosnia and Herzegovina, more options are identified. Respect of the interpretation reduced their number to two: with four and six Klasters. Analysis confirmed that spatial distance between certain local units does not understand distance or difference with regard to their homogenous according to socio-economic characteristics.

For the grouping of the units of local self-governance a combination of factor and Klaster analyses is used. This methodology is common in a situation in which we have at disposal bigger number of variables. Using factor analysis, the information contained in greater number of analyzed variables are summarized; after this, Klaster analysis based on formed factors is performed.

Table 1: Final centers of Klasters and influence of factors

Factor	Klaster			
	1	2	3	4
Factor 1	0,25832	-0,42543	0,12723	6,66822
Factor 2	1,05733	-0,66823	-0,12798	-1,50965
Factor 3	-0,43768	-0,53538	1,20994	-0,89286

Source: Author's calculation

Final centers of Klasters and influence of factors indicate positive correlation of the first Klaster and factor 1 and 2, third and fourth Klasters and factor 1.

Table 2: Distance between final centers of Klasters

Klaster	1	2	3	4
1		1,859	2,034	6,920
2	1,859		1,909	7,152
3	2,034	1,909		7,008
4	6,920	7,152	7,008	

Source: Author's calculation

Basic socio-economic characteristics of local units grouped into homogenous Klasters are presented in the next table.

Table 3: Basic characteristics of four Klasters according to the results of factor and Klaster analysis

Variable		Klaster 1	Klaster 2	Klaster 3	Klaster 4
Number of municipalities		36	48	35	1
Area in square km		11.822	12.357	23.099	148
Number of population		1.226.369	882.680	1.259.323	304.070
Rate of employment		18,9	10,7	14,1	28,9
GDP per capita KM		4.974	3.229	4.361	13.626
GDP pc % EU[1]		10	7	9	28
Structure %	Primary	2,5	4,7	10,4	0,7
	Secondary	50,5	25,4	30,0	19,8
	Tertial	47,0	69,9	59,6	79,5
Coefficient of vitality		18	11	12	15

Source: Author's calculation

[1] Average GDP pc EU for 2007. is 24.900 EUR according to http://www.economic-growth.eu/Englis/updated_data/chart-EU-GDP-per-capita2007.htm 20. 12. 2008

In the situation when the number of variables being at disposal is lower, there is no need for the creation of factors. In this manner it is tried to avoid the loss of important information. In this case, firstly, the corresponding method of hierarchy Klasterisation is performed. After this, results are used as input in k means Klaster method. Hierarchy method provides to determine a number of groups (Klasters) and centroide of groups. In the next step, k-method is used in order to improve the results of hierarchy method. Namely, the main lack of hierarchy method is that the allocation of units is final, with no possibility of re-grouping into others (more corresponding) groups during the very procedure. K-means method, on the other side, is sensitive to proscribed initial values and may finish in a trap of the local optimum which is far from the global optimum. Empiric proves suggest that it is possible to come close to the global optimum if centroides from hierarchy method are used (Ferligoj, 1989) as the starting points for k-means method.

Table 4: Final centers of Klasters upon performed k-means method

Variable	Klaster					
	1	2	3	4	5	6
GDP per capita	3993,11	6007,91	5571,00	3793,27	4940,00	13626,00
Employment rate	0,1510	0,1971	0,2457	0,1282	0,1991	0,2885
Structure of employment - primary sector	0,0489	0,0203	0,0200	0,0630	0,0011	0,0065
Structure of employment - secondary sector	0,3392	0,3587	0,3059	0,3480	0,1384	0,1976
Structure of employment – tertial sector	0,6119	0,6210	0,6742	0,5890	0,8605	0,7958
Tourists total	3019	12273	29018	412	55902	95644
Nights total	6385	25728	101615	688	184927	187202
Vitality coefficient	0,1604	0,1565	0,1655	0,1555	0,1183	0,1526

Source: Author's calculation

Into the Klaster one 18 units of local self-governance is divided, in Klaster two 11, in Klaster three 4, while Klasters five and six contain only one unit each.

Table 5: Number of cases in each Klaster according to non-hierarchy analysis

Klaster	1	18,000
	2	11,000
	3	4,000
	4	85,000
	5	1,000
	6	1,000
Valid		120,000
Missing		10,000

Source: Author's calculation

Basic socio-economic characteristics of local units which are grouped into six homogonous Klasters are given in the following table.

Table 6: Basic characteristics of six Klasters according to the results of k-means non-hierarchy analysis

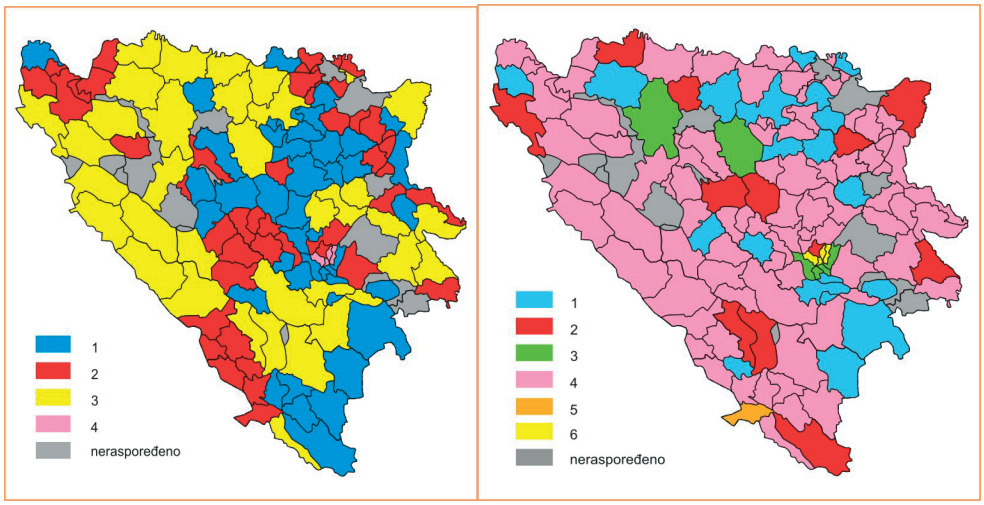
Variable		Klaster 1	Klaster 2	Klaster 3	Klaster 4	Klaster 5	Klaster 6
Number of municipalities		18	11	4	85	1	1
Area in square km		7.627	6.478	2.904	30.045	225	148
Number of population		637.908	740.848	353.992	1.630.944	4.682	304.070
Rate of employment		15	20	25	13	20	29
GDP per capita KM		3.993	6.008	5.571	3.793	4.940	13.626
GDP pc % EU[2]		8	12	11	8	10	28
Structure %	Primary	5	2	2	6	0	1
	Secondary	34	36	31	35	14	20
	Tertial	61	62	67	59	86	79
Coefficient of vitality		16	16	17	16	12	15

Source: Author's calculation

[2] Average GDP pc EU for 2007 is 24.900 EUR according to http://www.economic-growth.eu/Englis/updated_data/chart-EU-GDP-per-capita2007.htm 20. 12. 2008

Results of the performed factor and Klaster analysis may be resumed in the form of two options. The first option is a result of factor and Klaster analysis and the second is a result of the application of the alternative approaches such as k-means approach on the basis of result non-hierarchy analysis.

Map 1: Map 2:



Map prepared by Mulaomerović, J.

The first option identifies four Klasters, and the other six. Within both options, the city of Sarajevo, according to its characteristics, significantly differentiates in relation to its narrow and wider surrounding. As it is about capital city, or a "real city", the city with the highest level of economic development, with the concentration of economic and the most qualitative demographic potentials, with the concentration of functions in education, research, health care, culture, financial sector, it is expectable. Still, demographic size, so as some other criterions, such as historic, institutional, competitive do not support the option according which the city of Sarajevo, as the city community of four municipalities, should be treated as an optimal statistic unit and an optimal framework of the regional policy.

Over two thirds of local units by k-means method are grouped according to the criterion of homogeneity into one Klaster. It directs to BiH as NUTS 2 level, the option which would parallel and in greatest measure satisfy all three criterions: demographic, access to funds and homogeneity. The following comments support this: it won't be a precedent in the formation of regions, there is a statistic system which may, with certain technical assistance, provide more quality statistic base, there are institutions for the preparation of applications, acceptance of funds, their implementation, monitoring and

evaluation, the approach which in the greatest extent decreased arbitration and subjectivism in reaching decisions.

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ENHANCING REGIONAL COMPETITIVENESS THROUGH THE ENTREPRENEURSHIP DEVELOPMENT

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Abstract

Although there is no generally accepted theory of regional competitiveness, competitiveness (regional or urban) has become very popular subject of interest among scholars, business and policy authorities, where the latter are especially interesting in formulating regional policy aimed at boosting it (from the both demand and supply side).
The main purpose of this paper is to discuss issues associated with the interpretation of regional competitiveness under the framework of achieving regional and national sustained economic growth and of contemporary findings in entrepreneurship. Entrepreneurship, briefly considered in this paper, may be the driving force that enables the transformation of regional resources into regional and national competitiveness, added value, economic growth and development. The paper also focuses on the City of Osijek. It is the largest city of the Croatia's region named the Central and East Croatia. The region is positioned below the Croatian average and it is lagging behind. Lessons considering the early-stage process of entrepreneurship development in the City of Osijek and the role of policy authorities are discussed as well.

JEL classification: R11, R58, O18

Key words: economic growth and development, regional competitiveness, regions lagging behind, entrepreneurship development, Croatia, City of Osijek

1. Introduction

To achieve sustainable national growth and development has become the most popular strategic goal of modern countries. Countries growing significantly over a certain time period have the possibility to reduce income disparities among their citizens and considerably reduce the poverty level, to generate the conditions and the need for new and better jobs, to improve the quality of natural environment, to expand the possibilities for health and social protection, to reduce the unofficial economy, the level of corruption, as well as to strengthen their democracy, political stability and responsibility of all their institutions, organizations or individuals. Competitiveness is critical for achieving economic growth and development. Therefore, building and sustaining competitiveness under the condition of globalization and increasing international competition has become the government's top priority at all levels – local, regional and national. Only highly competitive economies can effectively cope with the domestic and international competition and produce

target outcomes in the context of international specialization. National competitiveness - encompassing the components of productivity, efficiency and profitability - contribute to the acceleration of economic growth, increase in standard of living and social welfare, creation of new jobs and resolution of many economic and social problems. For achieving national competitiveness is extremely important to have competitive individuals, a balanced and sustained regional development *(i.e.* social and economic cohesion) and to achieve regional competitiveness.

Regional disparity is a stylized fact for most countries. Recent trends, confirmed by statistical data, show that the differences between the regions in many countries have become increasingly larger even in the highly competitive economies. However, this fact does not mean disparities are an appeasable option for policy authorities. The findings of many regional studies (for review, see DG Internal policies of the EU, 2007) indicate the strong regional disparities may become a significant trig to further enhancement of countries' competitiveness, growth and development. The consequences of regional disparities in regions lagging behind, such as unfavorable socio-economic structure of population, more corruption, worse investment climate, under-utilization of resources (especially human) and uneven capital allocation, degradation of human capital, reduction of available jobs, population-drain in the emigratory regions (being mostly of younger ages and in work force), production of lower technological level, less efficient production, poorer quality of life, less number of growth opportunities and the like have become simultaneously the source of their further deepening. At the same time, the existence of regional disparities indicates there is an urgent need for their minimization and for the creation of sound conditions for all regions in order to be able to create, maintain and enhance their potentials for growth based on their own unique specificities.

Consequently, many scholars have been trying to expand our understanding about regional-driven issues not only from the point of view of regional studies, but also from the point of view of national growth and development. Under the framework of this interest, a special attention can be given to the studies addressing competitiveness, the relationships between national and regional competitiveness, growth and development and their driving forces. Despite the growing interest in this field of studies, there is no consensus on interpretation, measurement and regional competitiveness policy; although, it seems that the opinion on positive relations between competitiveness, economic growth and development has been prevailing. Furthermore, it seems that worldwide policy authorities failed in managing the regional development and that new regional development policy that respects the need for competitiveness should be created (Porter *et al.*, 2004; Ketals, 2004, Thompson *et al.*, 2005).

The main purpose of this paper is to discuss issues associated with the interpretation of regional competitiveness under the framework of achieving regional and national sustained economic growth and of contemporary findings in entrepreneurship. The basic idea upon which the paper is based is that competitiveness is critical for achieving economic growth and prosperity. National competitiveness refers to the ability of policy authorities to create and maintain such environment that will be favorable for the development of micro-competitiveness and entrepreneurship, as well as to ensure the prosperity of a country. National competitiveness is founded on localities (whether this is a region or a sub-region). Regional (local) competitiveness assumes the identification of growth potentials and constraints of certain area, as well as strengthening of its unique combination of resources (innovativeness and creativity, knowledge, technologies, historical and cultural background, natural resources, tolerance, social networks, thrust, responsibility, etc.). Entrepreneurship, briefly considered in this paper, may be the driving force that enables the transformation of regional resources into regional and national competitiveness, added value, economic growth and development. The paper also focuses on the City of Osijek. It is the largest city situated in one of the Croatia's regions – the Central and East Croatia. The region is positioned below the Croatian average and it is lagging behind other Croatian regions. Findings around the world confirm that large cities are often the drivers of their regional and national economies (see Turok, 2004, OECD, 2006). Lessons considering the early-stage process of entrepreneurship development in the City of Osijek and the role of policy authorities are discussed as well.

2. Regional competitiveness and successful regions

According to the simplest definition, regional competitiveness might be defined as the ability of some region to compete with one another in some way, both within and between nations, to grow and prosper in economic terms. From stylized fact that some regions are more developed than another, measured in terms of economic growth or living standard, many scholars come to the conclusion – regional competitiveness matters. Worldwide evidences indicate region compete with one another; sometimes in a indirect and sometimes in a direct way. The difference in competing style depends on the achieved economic specialization (Boschma, 2004).

According to the European Council, regions compete with one another, among others, over shares of (national or international) export markets. This can be confirmed by the statement of the European Commission (1999, p.4) that puts the export performance and activities that expand the export basis in the center of interest. However, the measurement of regional competitiveness by using the export performance is one-dimensional addressing of it. Kitson *et al.* (2004) illuminated that in the basis of such measurement the idea on translating the

concept of national competitiveness on regional one can be found, without of questioning whether it is the most useful and meaningful concept for use at the sub-national scale. Furthermore, they pointed out that the use of this concept in determining the national competitiveness in terms of trade and export is also questionable and thus should be denied.

Kitson at el. (2004) argued that regional competitiveness focuses more on the drivers and dynamics of a region's (or city's) long run prosperity than on more restrictive notion of competing over shares of markets and resources. Camagni (2002) pointed out that regions do compete over attracting firms (capital) and workers (labor) as well as over market, but on the base of absolute competitive advantages rather than comparative advantages. Florida (2002) stated particularly valuable assets that contribute to attracting of creative people: the presence of other creative people, access to technology and technology advances, and the tolerance of the community to diversity and difference.

In a nutshell, regional competitiveness can be defined as the sustained ability of a region to compete with other regions, to ensure sustained economic growth and development, including the ability to attract and keep productive capital and creative talent as well as to be innovative in a broad sense of the word. Regional competitiveness is not referred to the exploitation of resources, but it supposes the identification of growth potentials and constrains of an area, as well as the strengthening of its unique combination of resources (innovativeness and creativity, knowledge, technology, historical and cultural background, tolerance, social networks, trust, responsibility, and so on) in order to create sound conditions for living and working. In other words, it refers to innovative and entrepreneurial conversion of these resources into intellectual capital, value added, economic growth and development.

3. Entrepreneurship development as an option for enhancing regional competitiveness

Economic development refers to a qualitative process that describes changes in the overall economy aiming to enhance the economic well-being of a community regardless of its size. In economic literature, economic development is frequently described as being a three-legged stool where each leg represents one economic development strategy. The first leg usually refers to business attraction; the second one to business retention and the third one to entrepreneurship development. However, because this analogy assumes the existence of equality and separation among economic development strategies, more useful analogy is that of a pyramid as Dabson (2005) pointed out.

Entrepreneurship has attracted most attention in recent years, especially in the areas or communities that are troubled, *i.e.* distressed. Many rural areas are distressed areas and worldwide evidences indicate that poorly performing rural areas cause many problems for a country as a whole (see for example, Dwyer *et*

al., 2002; Porter *et al.*, 2004). Therefore, a new research and rural development policy is needed (Porter *et al.*, 2004; Ketals, 2004, Thompson *et al.*, 2005). Entrepreneurship development - being also known as homegrown development - shows as a good strategic option. It refers to a process of supporting and encouraging people to become entrepreneurs in order to enhance the competitiveness and economic prosperity of a community, by (i) creating the environment being favorable for creativity and innovativeness; (ii), encouraging entrepreneurship as an eligible career option through entrepreneurial education, facilitation and recognition, and (iii) developing institutional support system to entrepreneurs. On the bottom of the development pyramid is entrepreneurship meaning that the policy authorities should invest the most efforts and resources at the base to empower human capital and to enhance the economic prosperity of a community. This will make the basis for expansion of existing business, which in turn makes the same regions or cities attractive to incoming business and investment, as Dobson highlighted (2005).
However, to have a positive impact on economic growth and development, entrepreneurship has to be productive one as implied by Baumol (1990).[1] Productive entrepreneurship cannot be taken for granted and the economic and social incentives (*i.e.* economic-social context) determine what type of entrepreneurial activity is the most prevalent in a given setting (Aidis 2003; Aidis and Estrin, 2005). This is very important for the transition economies. According to Dallago (1997) and Aidis (2003) transition economies, like Croatia, are mostly characterized by high level of unproductive activities. In addition, they are often rent-seeking and economically destructive.

3.1. Regional development disparities in Croatia

There are three NUTS-II regions in Croatia: the North-West Croatia (with the capital), the Central and East Croatia (Panonian) and the Adriatic Croatia. On the NUTS-III level there are 21 counties of which one – the City of Zagreb – holds a double status of town and county. Counties are regional self-government units and they have their own representatives and executive bodies. Croatia's division at the NUTS-II and III levels is shown in Table 1 (the first column). The problem of regional inequalities in Croatia is a well-known fact.[2] Recent growth trends across Croatian regions have actually widened, especially after the Homeland war, not narrowed (NCC, 2005). Measured by selected

[1] Baumol (1990) pointed out the need to distinct between productive, unproductive and destructive entrepreneurship, where productive entrepreneurial activity refers to any activity that positively contributes to net output of the economy.
[2] Data about the growth rate of national income in Croatia before 1990s confirm this fact. See Turcic, 1997 (Table: ND-1, pp. 13-14). Recent studies in Croatia confirmed the existence of regional development disparities (see for example Nujic and Andrakovic, 2005; NCC, 2005; MSTTD, 2005, RCOP, 2007).

development indicators regional disparities are shown in Table 1. Among many causes underlying the obvious disparities, the following ones are usually noted: historical knowledge, geographic position, resources allocation, war damages and the absence of political will, accountability and cooperativeness to minimize this problem.

Table 1: Developmental disparities in Croatia (selected indicators)

Region / county	Population, 2001 Census	Population with high education, 2001 Census (%)	Working contigent (in %) (F 15-59; M 15-64)	Share (%) in GDP, 2005	GDP per capita PPP, 2005, EUR	Administrative unemployment rate (%) (December 31, 2007)
NORTH-WEST CROATIA						
City of Zagreb	779,145	16.80	66.1	32.3	12,908	5.7
Zagreb	309,696	4.90	65.7	5.6	5,446	12.1
Krapina-Zagorje	142,432	3.20	63.1	2.3	5,172	10.6
Varazdin	184,769	5.10	64.2	3.5	5,928	9.9
Koprivnica-Križevci	124,467	4.90	63.2	2.5	6,452	13.5
Medjimurje	118,426	3.70	64.9	2.0	5,323	11.4
Total/avarage	**1658,935**	**6.43**	**64.53**	**48.2**	**9,050**	
CENTRAL-EAST CROATIA						
Požega-.Slavonia	85,831	4.00	60.9	1.3	4,834	19.3
Brod-Posavina	176,765	4.20	61.8	2.1	3,785	24.7
Osijek-Baranja	330,506	6.30	64.0	5.5	5,313	21.9
Vukovar-Srijem	204,768	3.90	63.0	2.6	4,028	27.6
Bjelovar-Bilogora	133,084	4.00	62.0	2.1	5,149	22.8
Virovitica-Podravina	93,389	3.50	62.3	1.4	4,803	25.0
Karlovac	141,787	5.10	61.7	2.3	5,335	23.0
Sisak-Moslavina	185,387	4.60	62.0	3.2	5,525	25.0
Total/avarage	**1351,517**	**4.45**	**62.21**	**20.6**	**4,865**	
ADRIATIC CROATIA						
Primorje-Gorski kotar	305,505	9.90	66.3	8.2	8,376	10.4
Lika-Senj	53,677	3.80	57.8	1.1	6,363	18.7
Zadar	162,045	16.80	62.9	3.0	5,526	17.6
Šibenik-Knin	112,891	5.60	59.9	1.9	5,299	19.9
Split-Dalmatia	463,676	8.50	64.2	8.2	5,395	18.5
Dubrovnik-Neretva	122,870	8.20	62.6	2.6	6,615	14.5
Istria	206,344	7.30	65.9	6.2	9,126	6.6
Total/avarage	**1427,008**	**8.59**	**62.80**	**31.2**	**6,709**	
CROATIA - Total	**4437,460**	**7.90**	64.0	100.0	**7,038**	14.8

Source: Central Bureau of Statistics, Croatian Employment Service

Although there is no generally accepted unique indicator of regional competitiveness, rough approximation of it can be made by analyzing the extent of regional development on which regional GDP per capita indicates. According to GDP per capita the most developed region is the North-West Croatia, while the Central and East Croatia region is the most undeveloped region (see Table 1). The three most developed counties expressed in the same terms are the City of Zagreb, the County of Istria and the County of Primorje-Gorski kotar. The two least developed counties are the counties of Brod-Posavina and Vukovar-Srijem. Their GDP per capita are less than 60% of the national average.

Thisse (2000) stressed that the magnitude of spatial disparities is very sensitive to the design of the regional borders and that this is true especially for small regions, such as those confined to the limits of a city. Statistical data shown in Table 1 confirm this. At the NUTS-II level, the difference measured by GDP per capita between the most and least developed region was 1.9 in 2005 while at the NUTS-III level it was 3.4 times higher. Looking from the NUTS-II level, the Central and East Croatia region is faced with the most significant problems: depopulation processes (for details see RCOP, 2007), the least share of high-educated people, the lowest working contigent and consequently with the highest unemployment rate. The problems are inter-linked; they mutually interweaving and impact each other always with the increasingly stronger impact. Furthermore, the Central-East Croatia region is burdened with problems of low added value, low standard of living, obsolete technical equipment and production based on low-technology, poor export results, huge war damages[3], inadequate educational structure, huge unemployment and strong emigration processes (for details see RCOP, 2007).

Considering entrepreneurial activity in the context of this paper, two positive trends can be noted (see Table 2): (i) entrepreneurial activity in all Croatia's regions has become more intensive and Croatia has made a progress in this field; (ii) the disparities among Croatia's regions have been decreasing although the Motivation Index, *i.e.* the TEA Opportunity to TEA Necessity ratio[4], indicate the entrepreneurial activity in regions lagging behind are still motivated more by necessity rather than by perceived business opportunity (for details see Singer *et al.*, 2007).

[3] It should be also noted that this region includes three of the four most war-damaged counties (Vukovar-Srijem, Sisak-Moslavina, Osijek-Baranja).

[4] TEA index – Total Entrepreneurial Activity Index – measures the ratio of the number of start-up entrepreneurs in the sample of adult population, aged 18 to 64. The term "start-up entrepreneurs" reefers to entrepreneurs who try to start a new business (alone or with others) and to owners of a business that is 3 to 42 months old. TEA Opportunity Index includes those who start entrepreneurial activity because they have perceived a business opportunity, while TEA Necessity Index includes those who are pushed into entrepreneurship by situation they found themselves (for example. could not find another job).

Consequently, the differences among Croatia's regions in terms of entrepreneurial activity are still significant and the domination of entrepreneurs driven by necessity in Slavonia and Baranja and Dalmatia indicates these regions have less entrepreneurial capacity and they are less oriented towards business growth. The GEM researchers[5] found out that the impact of entrepreneurship on economic growth and development depends on the type of entrepreneurship – necessity driven entrepreneurship has no effect on economic growth and development while opportunity driven entrepreneurship has a positive and significant effect (see GEM reports[6], Carree and Thurik, 2005; Audretsch *et al.*, 2006; Acs and Szerb, 2007).

Table 2: TEA Index 2002 and 2007

Regions*	TEA Index				
	2002	2007			
	Total	Total	TEA Opportunity	TEA Necessity	Motivation Index
Zagreb and surroundings	4.89	6.44	3.59	2.29	1.57
Slavonia and Baranja	2.11	7.18	3.43	3.75	0.91
Nothern Croatia	2.83	4.69	2.26	2.26	1.00
Lika and Banovina	2.71	8.81	6.58	2.24	2.94
Istra, Primorje and Gorski Kotar	4.47	9.60	7.45	1.88	3.96
Dalmatia	3.95	8.92	4.40	4.52	0.97
Croatia	3.62	7.27	4.16	2.90	1.43
Rang of Croatia among GEM EU countries	32nd out of 37 GEM countries	4th out of 18 GEM EU countries	10th out of 18 GEM EU countries	18th out of 18 GEM EU countries	18st out of 18 GEM EU countries

Source: Singer *et al.*, 2007 for 2002, Sarlija (Tables, http://oliver.efos.hr/nastavnici/nsarlija/docs/gem**2007**.pdf) for 2007

Note: For the purpose of the GEM project, Croatian counties were grouped into "regions" that correspond to Croatia's geographic and historical regional structure. Region "Zagreb and surroundings" consists of the City of Zagreb and Zagreb county; "Slavonia and Baranja" of the counties Brod-Posavina, Osijek-Baranja, Pozega-Slavonia, Vukovar-Srijem; "Northern Croatia" of Bjelovar-Bilogora, Krapina-Zagorje, Koprivnica-Križevci, Medjimurje, Varazdin and Virovitica-Podravina; "Lika and Banovina" of the counties Karlovac, Lika-Senj and Sisak-Moslavina, "Istria, Primorje and Gorski Kotar" of the counties Dubrovnik-Neretva, Split-Dalmatia, Šibenik-Knin and Zadar.

GEM EU countries include the following countries: Austria, Belgium, Denmark, Sweden, Ireland, Slovenia, Greeece, the Netherlands, Romania, the United Kingdom, Latvia, Italy, France, Portugal, Finland, Spain, Hungary and Croatia.

[5] GEM is a large multinational project focusing on the collection and analysis of internationally comparable data on entrepreneurship and its impact on economic growth.

[6] GEM reports are available on the web site www.gemconsortium.org

It is well known that differences in the entrepreneurial activity within a country are generally connected with the differences in the competitiveness and development of a certain region as it is at the national level. This is also a case in Croatia. Consequently, in order to minimize the regional disparities and create sound conditions for balanced and sustainable development, enhancement of regional competitiveness is necessary. A fruitful option for doing this is by supporting entrepreneurship development. However, to support an entrepreneurship development is not an easy task as the case of the City of Osijek, that will be briefly described in the remainder of this paper, indicates.

3.2. Lessons learned from the City of Osijek

The City of Osijek is situated on the North-East part of Republic of Croatia, and on the South-East part of the Osijek-Baranja county. With the area of 169.74 km^2, it encompasses 4.1% of the Osijek-Baranja county, 0.7% of the Central and East Croatia region and 0.3% of Croatia. Regarding its population, it occupies the fourth position in Croatia with 114,616 inhabitants (2001 Census). In the City of Osijek, there are 11 settlements from which only Osijek has a status of the city. It is the largest city and the regional capital. The City of Osijek has lagged behind the top three Croatian largest cities (Zagreb, Split, Rijeka) from 1970s. This unfavorable tendency dramatically amplified in 1990s due to Homeland war[7], unfavorable events that followed the transition processes (e.g. tycoon privatization), unfavorable tendencies connected to human resource, such as: decrease in the number of inhabitants, negative natural increase, ageing of inhabitants, migration-out processes, especially of young and well-educated labor force (for details see Borozan, 2006). Inhabitants, as a human resource, represent the most important development factor of each community. Pace, harmony and sustainability of economic development depend on the number and quality of this resource. On the other side, economic development should be evaluated considering its contribution to enhancement of all citizens' well-being and quality of life.

In summary, the City of Osijek has undergone dramatic changes over the past decade. Many of these changes have been economic, others demographic, political and sociological. Poor economic situation, negative development tendencies and weakening of the Osijek's development sensibility are the main features of its economic development till the middle of the first decade of the 21st century. Simultaneously, they are heavy burden for its future development.

[7] It should be noted that the whole Slavonia and Baranja, and mainly the City of Osijek were exposed to the direct war activities (1991-1995). Consequently, the war generated a huge direct war damages and even bigger indirect damages and consequences. Till 1988, some parts of the City of Osijek were occupied and in 1998 these parts were integrated in the political and economic system of Croatia.

Under such circumstances, revitalization of the City of Osijek and its transformation in a modern, intelligent city is necessary. This is emphasized in the development strategy of the City of Osijek (Singer, 2006). One should note that the City's economy has experienced mild but positive tendencies at the beginning of the 21st century. After 2005 the economy operated with positive financial results, new value added has been continuously raising, unemployment rate (that was 21.9% in 2007) has been decreasing since 2002. Yet, compared to the larger Croatian cities, the City of Osijek has been developing too slowly. Thus, the economic gap between these cities and Osijek has become increasingly larger (for details see Borozan, 2006).

Formulation and implementation of entrepreneurship development strategy can contribute to community's faster and more qualitative development. Since the entrepreneurship development strategy is directed to the process of supporting and encouraging people to become entrepreneurs in order to enhance the economic prosperity of a community, it is suitable for development of rural or depressed areas as it is the Central and East Croatia – especially the biggest part of it - Slavonia and Baranja. The City of Osijek is the capital of the Croatian geographic and historical region named Slavonia and Baranja that belongs to the NUTS-II region - the Central and East Croatia. Slavonia and Baranja is a rural area that has been faced with poor economic situations at the beginning of 21st century as the whole region.

The entrepreneurship development depends on the quality of entrepreneurial framework conditions, including to which extent the environment and entrepreneurial climate support creativity, diversity, tolerance and continuous innovativeness, to which extent 'can-do' mentality has been developed (in a sense whether people are willing to accept risk, what they think about business failure and the like), and how efficient and effective is the institutional support. Small and medium-sized enterprises in the City of Osijek have had a weak economic power (for details see Borozan, 2007). Even tough they are numerically overwhelming, they employ approximately half of the total employed in the City, operate with smaller financial gains than expected, and are oriented mostly to doing business locally. According to the perception of Osijek's entrepreneurs[8] the biggest business challenges are caused by problems connected to the entrepreneurial framework conditions, *i.e.* to the institutional

[8] Valuable information on entrepreneurial environment and climate in the City of Osijek resulted from a survey conducted in the City from October 17th to December 5th, 2005 in organization of the Administrative department for economy of the City of Osijek. The following institutions were included in the survey: Entrepreneurial incubator BIOS, Center for entrepreneurship Osijek and Audeo – a firm for market research and public opinion pooling. In collecting the opinions of entrepreneurs that started a business in the last four years in the City of Osijek, a method of questionnaire sent by mail was used. From 953 respondents – entrepreneurs that were previously contacted, 308 agreed to cooperation, and 214 of them filled the questionnaire and sent them back by mail.

infrastructural conditions, and the least to inappropriate profiles and inefficiency of local labor force. Drown from these findings, we can conclude that entrepreneurial management system of the City of Osijek should be redefined and that the synergic effects failed.

Building the favorable and encouraging entrepreneurial framework conditions is more than a simple job which, when done, lasts for a long time period. The system of entrepreneurial management has an organic character – it should be developing, adjusting and changing simultaneously with the changes in general national and international framework conditions as well as with the changes in entrepreneurial framework conditions. There is no model for entrepreneurial management that will be applicable in each situation. There are many cases, more or less successful, that offer valuable lessons. Although the case of the City of Osijek is not a representative one considering what is done to expand the city's capacities, to faster economic development in quantitative and qualitative terms and to enhance the entrepreneurial framework conditions, valuable lessons still can be drown.

A community that wants to achieve its development based on the entrepreneurship development strategy should be firstly ready for economic development and than for the engagement of entrepreneurship development strategy (see NCE, 2002). 'To be really ready' means that all community's development actors have to make a commitment of their time and resources to the economic development process. In general, local actors is interested in reaching and further developing fast-growing, but also sustainable economy that will (i) adequately respond to contemporary challenges in a global, highly-competitive, and knowledge, creativity and on-going technological innovations demanded economy, (ii) enable prosperity and social welfare for its citizens. Labor force contingent, available jobs, education, standard of living and prosperity are strongly correlated with efficiency and effectiveness, competitiveness and dynamism of local community and its ability to react fast on real or expected changes in its environment. Thus, public servants, entrepreneurs, scholars, workers and all citizens should be actively involved in on-going reevaluation of their local economy and in creating the better future. Only close cooperation and active partnership between people, business, academics, municipalities and authorities can ensure the progress.

Plans and strategies can be effective, and local community can develop only if all stakeholders participate actively and are devoted in the development process, *i.e.* if there is a consensus and willingness for changes as well as knowledge about how to realize changes in the most efficient and effective way. In order to reach the goals, leading institution should be founded. Its tasks might be, for example, formulating the strategy and programs for the community's vision and goals meeting in the area of entrepreneurship, continuously monitoring, networking and coordinating the work of all entrepreneurship-support institutions. Members of this institution would be the

representatives of all stakeholders (headed by the community leader) that would do their job with commitment and passion. Creation of the dynamic and entrepreneurial community requires: (i) well-understanding of current situation, its past and future trends, (ii) having knowledge of the community's potential and of obstacles that preclude the realization of its potential, (iii) creation of the future by defining the vision and writing the development strategy.
Before such institution is founded or at the beginning of its operation, its members should be involved in educational programs. Workshops, group activities and class work will help members to learn new things about themselves and their community, to develop and practice new skills, and to recommit to building a better community. Certainly, such programs would be maintained on the regularly basis to keep the knowledge, skills and spirit of creating better life and helping alive. Programs should contribute to the development of a new energy and new leadership, and these starting collective efforts should result with a positive momentum and attitude shift about the future prospects of living and prospering in a community.

The question of readiness for the entrepreneurship development strategy involves reevaluation of many issues being important for the community development and full engagement of the entrepreneurship strategy. Some of them include:

- the extent to which existing capacities (human, physical, institutional, financial, *etc.*) meet the current and future needs of people and firms;
- openness of the community's value system and norms, *i.e.* culture to diversity, tolerance, novelty, learning, innovative and creative behavior, attitude to responsibility;
- propensity to risk-taking behavior; to entrepreneurship as a career choice, openness to entrepreneurs, business failures and business restart;
- propensity to use new technology and ideas, to generate new knowledge and commercialize profitable ideas;
- propensity to team work and partnership relations, toughness of social networks.

Political events and twists in the City of Osijek (marked by quarrels, charges and scandals among town councilors) have marked 2007, 2008 and the beginning of 2009. Breaking up the leading coalition and early election in December 2007, failure in setting the new president of town council in January 2008, resignations of new town councilors in January 2008, reelection in March 2008, breaking up the leading coalition and setting the new town councilors in January 2009 are examples of such events and twists. They grew too often into the city's political crises. In the circumstances when politicians are preoccupied by themselves, development challenges have been put away. Although the development strategy of the City of Osijek was written in 2006, it was adopted

in 2008 and has not been implemented yet. Obviously, there is no consensus considering the city's need for building the future and consequently its economic development.
When the readiness for engaging the entrepreneurship development strategy comes into question, many prerequisites are met – especially physical infrastructural capacities, although they can always be better. On the other hand, 'can-do' culture has not been developed, there is not an open and creative community leadership, institutions aimed to support entrepreneurship are not networked and they do not behave fully in the responsible and entrepreneurial way. Each local community – the City of Osijek does not differ – owns its unique combination of local conditions that support or not support the creation of more prosperous future, *i.e.* that enhance or reduce its development potential. Local conditions refer not only to its natural and physical resources, but also to its soft and strategic resources such as human, cultural, spiritual, institutional ones and the like. These resources have become the most important challenges which the communities have been facing in the increasingly competitive global economy.

4. Concluding comment

As the concept, competitiveness of the localities (whether it is a nation, region or a sub-region) provokes many doubts, especially regarding its interpretation, measurement and policy recommendations. Despite this, it is the most popular concept nowadays. This is especially true for the regional competitiveness. Regional (or urban) competitiveness assumes the identification of the growth potentials and constraints of a place, as well as strengthening of its unique combination of resources (innovativeness and creativity, knowledge, technologies, historical and cultural background, natural resources, tolerance, social networks, thrust, responsibility, etc.). There is now widespread agreement that by enhancing regional competitiveness countries could reduce regional disparities, enhance the process of wealth creation and speed up the sustainable economic growth. There are many drivers of the competitiveness but this paper focused on entrepreneurship. It was portrayed as the the driving force that enables the transformation of regional resources into regional and national competitiveness, added value, economic growth and development.
In order to enhance competitiveness and consequently economic growth and development the entrepreneurship development strategy has shown as a beneficial option, especially in a rural or depressed region. The Central and East Croatia is the most undeveloped region considering many socio-economic indicators in Croatia. The largest part of this region is also a rural area. Entrepreneurship development as a strategic option for enhancing competitiveness in the largest city of this region – the City of Osijek - has been recognized by academics and many other local actors. It is built to the draft

version of the Development Strategy of the City of Osijek. However, it seems that there is not enough political will to fully implement it. Between real and proclamative commitment there is always a significant gap. Furthermore, such gap disenables the implementation of the strategy.

In general, local authority capability of the City of Osijek for enhancing the local conditions, expanding its economic capacity, improving the business climate, raising the productivity and competitiveness, enhancing its socio-cultural capital, improving the quality of life, and creating the new business opportunities depends on their ability to understand the nature, characteristics and structure of local economy, its strengths and weaknesses, tendencies that bring it to pre-existing conditions, as well the global tendencies that will influence the living and operating, *i.e.* depends on their ability to act in a strategic and proactive way. The success of a community regardless of its size is dependent on the behavior and strategic choices of all actors, its inhabitants, businesses, institutions, public authorities, and at the same time on its inherited and created resources. The transformation of competitiveness into economic growth and development demands commitment from all the actors.

A successful or a competitive region (or city) is the place where all citizens and firms want to live and invest in. Their opinion is very important because it comprises their assessment of the present, past and future conditions of the place regarding its economic, cultural, health, infrastructural and similar prospects. In the City of Osijek there are mixed signals. Data on migration processes in the city indicate that from 2004 more people have emigrated from the city than immigrated. However, the findings of survey of young people (age 18-27), *i.e.* student population at the J.J. Strossmayer University of Osijek (n = 548), of interviews and surveys of the members of local self-government (n = 15) and business people (n = 19) conducted in 2006 for the purpose of the strategy formulation showed that optimism exists (see Singer, 2006). They grounded their optimism on the better development programs, especially in the field of infrastructure (entrepreneurial and physical) and expected benefits that will be generated by the accession of Croatia to the EU (Singer, 2006). General optimism or the public's positive view of the future might be a very useful soft resource for managing the changes needed for enhancing the competitiveness of the place.

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FINANCING REGIONAL DEVELOPMENT THROUGH DEVELOPMENT BANKS*

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Abstract

A combination of various sources of financing is a necessary prerequisite to finance any development as well as regional development. Sources of financing can be monitored and evaluated from the aspects of suitability (cost aspect), availability and abundance. Ultimate users of funds give advantage to financial sources whose availability and abundance is at the maximum level, and costs are at their minimum. For the most part, development bank funds meet the above mentioned requirements, since the main function of these banks is to finance certain activities under special (more favourable) conditions. The significance, justification and evaluation of this form of financial resources in the regional development segment are becoming more and more prominent.
The subject of this paper is the amount and conditions of development bank loans in the area of Osijek-Baranja and Vukovar-Srijem Counties.

JEL classification: E51, G32, O16, O19, O23

Keywords: financing, regional development, development banks, sources of financing

1. Introduction

Every country, region, company, as well as individuals, face the problem of financing their needs. Traditional credit institutions are often not interested in financing certain projects and providing financial support to specific activities. There are multiple reasons for that, among which there is a long financing period for these activities, lower income from interests, long turnover periods, increased loan repayment risks and inadequate collateral.
Countries try to overcome this specific problem and satisfy the need for financing by establishing specialized credit and development institutions whose

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mission is to provide financing and to encourage development of certain segments and sectors of economy in this way.

2. Characteristics of Development Banking

Some specific needs, including various infrastructure projects of great value and special activities, like agriculture and related activities, often require special terms of financing. As business credit institutions are not interested in providing finances for this segment of economy due to specific conditions of financing these activities, financial support is partially taken over by states through specialized credit and development institutions. This form of financing is present to a varying extent in all countries of the world as well as in various associations of countries (unions). Main sources of financing of these institutions are funds from the state budget, then funds provided by long-term debt in country and abroad, and funds raised by issuing an emission of debt securities.

Compared to business banks, credit and development institutions have different sources of financing and very often they are beneficiaries of permanent government privileges[†], which helps them in providing better terms of financing. As a rule, their activity has a development impact on certain branches of economy, regions and countries.

Development banks have one of the following ownership models:
- State owned only,[‡]
- Owned by several countries,[§]
- Owned by individual regions.

2.1. Croatian Development Bank

The newly acquired independence of the Republic of Croatia and the need and necessity of overcoming the situation at that time, transition, war and occupation of some of the territory, lead the Republic of Croatia to realize the need and advantages of having a development bank as one of the instruments of development activities. So in 1992, at the beginning of the sovereignty,

[†] Free from income taxes, not liable to bankruptcy proceedings or liquidation, country(ies) guarantee for all of their obligations. These banks have no obligation of calculating, maintaining and allocating required reserves.
[‡] The operational area of this type of a development bank is mostly defined by state borders of a certain country(ies), because the state is at the same time the only founder and owner. In the Republic of Croatia this function is obtained by Croatian Bank for Development and Reconstruction (HBOR).
[§] This type of ownership is characteristic for multilateral development banks.

Croatian credit bank for reconstruction[**] (HKBO) was founded, which soon after, in 1995, changed its name in Hrvatska banka za obnovu i razvitak[††] (HBOR) – *Croatian Bank for Reconstruction and Development*. This credit institution today acts as a development and exporting bank[‡‡] of the Republic of Croatia and provides support through[§§]:

1. Financing of reconstruction and development of Croatian economy,
2. Financing of infrastructure,
3. Encouraging exports,
4. Providing support to development of small and medium entrepreneurship,
5. Encouraging environmental protection, and
6. Insurance of exports of Croatian goods and services against non-market risks.

HBOR implements its main activities by providing financing through[***]:

1. Approving loans and other placements
2. Issuing bank and other guarantees
3. Concluding insurance and reinsurance contracts
4. Making investments in equity and debt instruments and
5. Performing other financial work and services.

Unlike the previous period in which it had offices only in Zagreb, HBOR expanded its activity by opening five regional offices[†††] throughout the Republic of Croatia. Organization structure of the bank in form of branch offices facilitates collection of information as well as communication and availability of the "products" to potential clients.

2.2. Multilateral development banks –goals and ways of financing

Globalization and problems in uneven development of certain countries-association members or regions within certain countries impose the need and necessary activities in order to overcome such situation. Multilateral development banks have a relatively successful performance in that direction.

[**] Official Gazette 33/1992, 76/1993 108/1995, 8/1996

[††] Amended Act on the Croatian Credit Bank for Reconstruction, Official Gazette 108/1995 Art. 1.

[‡‡] Act on Croatian Bank for Development and Reconstruction, Official Gazette 138/2006, Art.2.

[§§] Act on Croatian Bank for Development and Reconstruction, Official Gazette 138/2006, čl.10.t.2

[***] Act on Croatian Bank for Development and Reconstruction, Official Gazette 138/2006, čl.10.t.2

[†††] Regional office for Slavonia and Baranja, Regional office for Dalmatia, Regional office for Istria, Regional office for Lika, Regional office for Primorje and Gorski kotar

The major multilateral development and bank institutions are[‡‡‡]:

1. International Bank for Reconstruction and Development (IBRD),
2. International Finance Corporation (IFC),
3. Inter-American Development Bank,
4. Asian Development Bank,
5. African Development Bank,
6. Council of Europe Development Bank (CEB),
7. Nordic Investment Bank,
8. Caribbean Development Bank,
9. European Bank for Reconstruction and Development (EBRD),
10. European Investment Bank (EIB),
11. European Investment Fund (EIF),
12. Multilateral Investment Guarantee Agency,
13. International Finance Facility for Immunisation,
14. Islamic Development Bank,
15. Inter-American Investment Corporation,
16. Black Sea Trade and Development Bank and
17. Central American Bank for Economic Integration.

Comparing the role and significance of multilateral development banks in financing of regional development, it is possible to observe the same or similar goals and reasons for incorporation and directions and ways in which they act (Table 1).

Table 2: Goals, ways of financing and other business operations of multilateral development banks active in the Republic of Croatia

	Goals	Ways of financing and other operations
World bank group[§§§]	Millennium development goals 1: reduce poverty 2: guarantee education for everyone 3: promote gender equality and empower women 4: reduce child mortality 5: improve maternal health 6: combat HIV/AIDS, tuberculosis and other diseases 7: ensure environment sustainability 8: develop a global partnership for development	Loans Guarantees Technical Assistance (various consultant services)

[‡‡‡] Decision about adequacy of the guarantee capital of loan institutions Art.2.t.5 OG 1/2009
[§§§] The Group consists of: International Bank for Reconstruction and Development, International Development Agency

European Bank for Reconstruction and Development (EBRD)	Depending on the strategy for a certain country	Loans Investments in equity Guarantees
European Investment Bank (EIB)	Contribution to more balanced development of the Community by ensuring economic and social cohesion of member countries	Loans Technical Assistance (various expert consultant services) Guarantees Venture capital funds
European Investment Fund (EIF)	Assistance in development of small and medium entrepreneurship in Europe	Loans Guarantees Venture capital funds
Council of Europe Development Bank (CEB)	Assistance in overcoming social inequalities and difficulties Assistance in revitalization of economy in disadvantaged regions	Loans Guarantees Trust account Interest rebate

Business policy of multilateral development banks is highly harmonized with the development guidelines and strategies of countries/unions, regional development guidelines and strategies at the local level.

3. Credit placements of multilateral credit and development banks in the Republic of Croatia

In addition to providing loans, multilateral development banks also have a significant role in the technical assistance segment and guarantee-related business operations, but the dominant activity is credit placement.

Direct credit placements of multilateral development banks in the Republic of Croatia in the period since becoming a member of these institutions until today has amounted to: €5.673 million.

According to the placement structure, the most important creditors are[****] IBRD with €2.164 million of approved funds, EBRD with €2.247 million, and EIB/EIF with €1.303 million of approved funds.

International Bank for Development and reconstruction (IBRD), as one of more important international credit and development institutions in the Republic of Croatia, financed 46 large development projects worth €1.847 billion in the period from 1994, when the Republic of Croatia became a member of, until

[****] All amounts are denominated in €

2008. The projects were mostly related to investment and improvement of infrastructure, improvement of state administration work and harmonization with European legislation, then to the fields of de-mining and environmental protection. A trend of activity growth of this credit and development institution can be observed in the Republic of Croatia (Chart 1).

Out of the total amount of funds that this institution invested in the Republic of Croatia, €50,8 million of credit funds were directly invested in two projects in the area of Osijek-Baranja and Vukovar-Srijem counties (Eastern Slavonia, Baranja and Western Srijem Reconstruction Project, €50 million, and Kopački rit Wetlands Management Project).

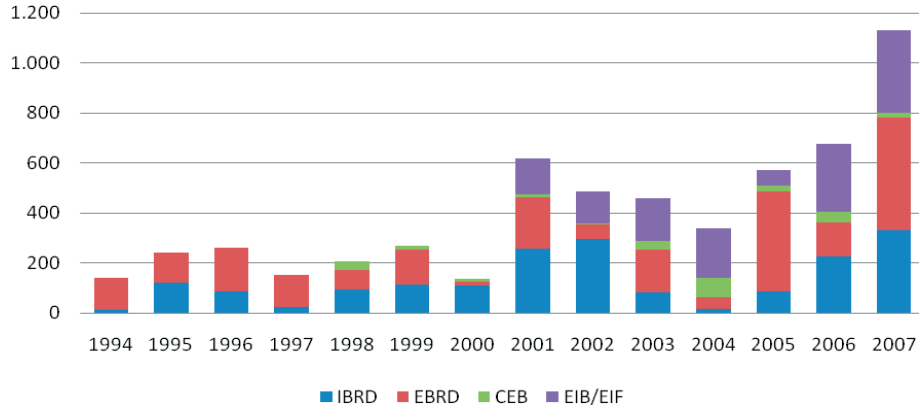
European Bank for Reconstruction and Development (EBRD) has been financially active in the area of the Republic of Croatia since 1994. It has invested €2.247 million, €75 million of which have been directly invested in the area of Osijek-Baranja and Vukovar-Srijem counties.

European Investment Bank (EIB) and European Investment Fund (EIF) are specialized credit and development institutions of European Union that have the status of multilateral development banks. Their main goal is to encourage integration, even development, economic and social cooperation among the countries – EU members and provide assistance in financing small and medium entrepreneurship at the state, regional and local level. The Republic of Croatia has been a member of these institutions[††††] since 1997. Activity and significance of these institutions in the Republic of Croatia can be observed from the data about the amount of their placements, which was €1.303 million in the period from 1997 to 2007 (Chart 1).

Council of Europe Development Bank is a credit and development institution, and the Republic of Croatia has been present in it as a member since 1997. Its activity is primarily socially oriented and its assistance is directed to overcoming inequality and difficulties and providing assistance to disadvantaged economies in the region. This credit and development institution has been active in the Republic of Croatia since 1998. It invested the total of €276 million of credit funds until 2007 (Chart 1).

[††††] The Republic of Croatia is a member of the European Investment Fund through Croatian Bank for Reconstruction and Development, and it will become a member of the European Investment Bank after joining the EU, since the membership in this bank is reserved for EU members only.

Chart 1: Amounts of credit placements of multilateral development banks in the Republic of Croatia in € mil



Source: Annual reports and statistical data of IBRD, EBRD, CEB, EIB/EIF

For placements of multilateral development banks it is typical that they are not separately monitored by regions (no geographic differentiation), and in some banks also by activities. Certain standards of their activities can be observed, and these are:

1. Credit placements intended for development are mostly invested through
national development banks, and rarely directly to the client/company,
2. Most of finances are allocated through loans,
3. Interest rates are mostly fixed
4. Purpose-specific spending of approved credit placements is strictly controlled and monitored.

4. Credit activity of HBOR in the area of Osijek-Baranja and Vukovar-Srijem counties

The time period included in the analysis of trends in credit placements of HBOR in Osijek-Baranja and Vukovar-Srijem counties is 5 years, i.e. includes the period from 2004 to 2008.

In the last few years of the analyzed period a trend of growth of credit placements of HBOR as well as its more significant participation in financing development in the area of Osijek-Baranja and Vukovar-Srijem counties can be observed (Table 2).

Table 3: Credit activity of HBOR in the area of Osijek-Baranja and Vukovar-Srijem counties

OSIJEK-BARANJA COUNTY					
	2004	2005	2006	2007	2008
Credit programme	€ approved	€ approved	€ approved	€ approved	€ approved
Programme of crediting reconstruction and development of business entities	1.267.728	7.081.836	17.408.137	45.167.528	11.511.672
Exports credit	5.893.341	8.613.148	12.290.298	16.178.908	18.262.045
Programme of reconstruction and development in the Republic of Croatia	1.040.276	121.621	498.855	1.228.048	852.090
Small and medium entrepreneurship credit programme	1.919.461	4.732.296	6.769.968	10.221.808	13.276.597
TOTAL	10.120.806	20.548.901	36.967.258	72.796.292	43.902.404
VUKOVAR-SRIJEM COUNTY					
	2004	2005	2006	2007	2008
Credit programme	€ approved	€ approved	€ approved	€ approved	€ approved
Programme of crediting reconstruction and development of business entities	271.330	7.076.024	7.394.434	23.254.994	22.182.616
Exports credit	1.867.742	7.226.857	7.749.461	1.068.413	13.039.681
Programme of reconstruction and development in the Republic of Croatia	5.555.702	270.269	0	1.156.810	0
Small and medium entrepreneurship credit programme	1.283.219	2.947.257	7.993.966	6.672.908	8.696.900
TOTAL	8.977.993	17.520.407	23.137.861	32.153.125	43.919.197

Source: Internal data of HBOR

The average amount of credit placement of HBOR in Osijek-Baranja county has ranged from €389 thousand in 2004 to €887 thousand in 2007. The average amount of credit in 2008 was about €418 thousand.

The average amount of credit placement of HBOR inVukovar-Srijem county is somewhat different. The lowest amount was recorded in 2007, when the average amount was about €518 thousand. There were no significant oscillations n the observed period and the amount ranged between €518 to 700 thousand. In 2008, the last year of the observed period, it amounted to €665 thousand (Table 3).

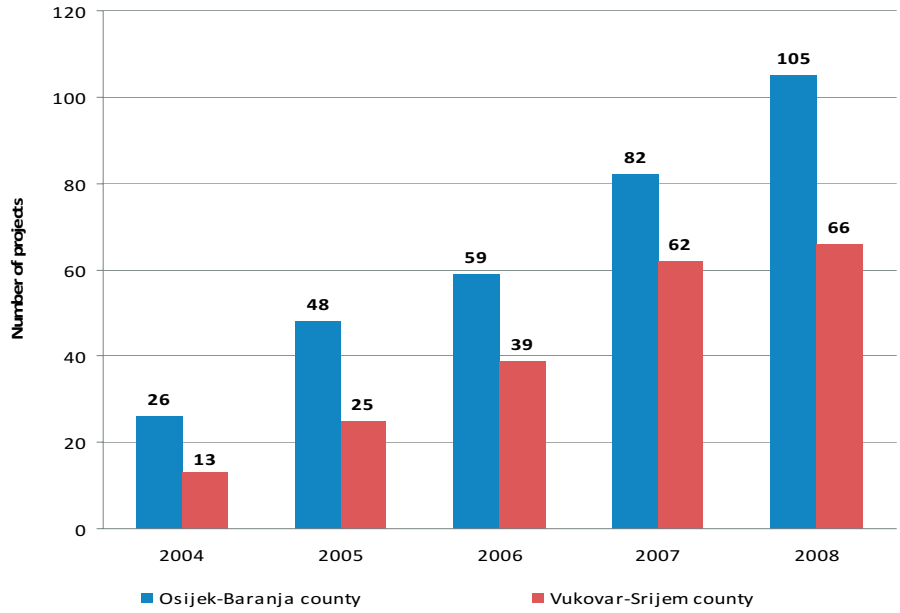
Table 4: Average amounts of credit placements

The average amount of loan	2004	2005	2006	2007	2008
OSIJEK-BARANJA COUNTY	389.262	428.102	626.564	887.760	418.118
VUKOVAR-SRIJEM COUNTY	690.615	700.816	593.278	518.599	665.442

It is possible to connect the increase in financial activity of the Croatian Bank for Reconstruction and Development to the change in its business philosophy, i.e. opening of a network of regional offices.

A trend of growth of the number of projects/loans can be observed in the observed period, going from 26 in Osijek-Baranja county and 13 in Vukovar-Srijem county at the beginning, to 105 projects/loans in Osijek-Baranja county and 66 projects/loans in Vukovar-Srijem county in 2008, which makes an increase of 304% in Osijek-Baranja county and 408% in Vukovar-Srijem county (Chart 2, Table 4).

Chart 2: The number of projects financed by HBOR



Source: Internal data of HBOR

Table 5: Trends in the number of loans in indices

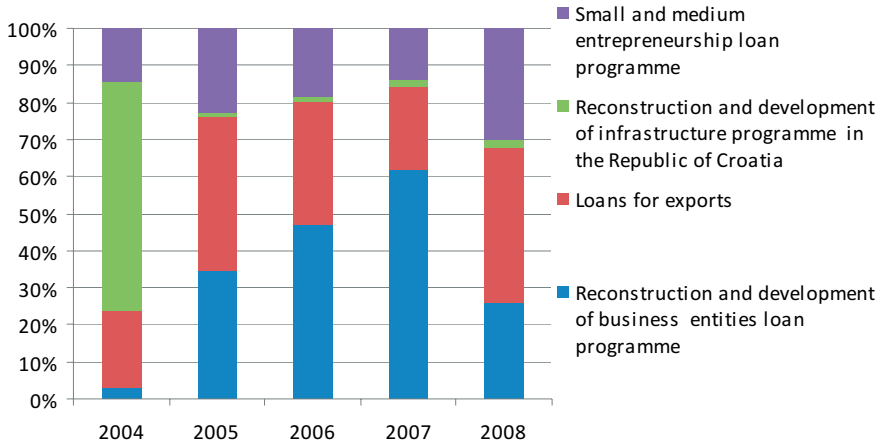
	2004	2005	2006	2007	2008
OSIJEK-BARANJA COUNTY	100	185	227	315	404
VUKOVAR-SRIJEM COUNTY	100	192	300	477	508

Source : Internal data of HBOR, calculation of the author

From the structure of credit placements by credit programmes in both of the counties in the period from 2004 to 2008, a significant reduction of credit placements can be observed for the reconstruction and development of infrastructure programme as well as a more significant credit activity in reconstruction and development of business entities loan programmes, small and medium entrepreneurship loan programme and loans for export, with

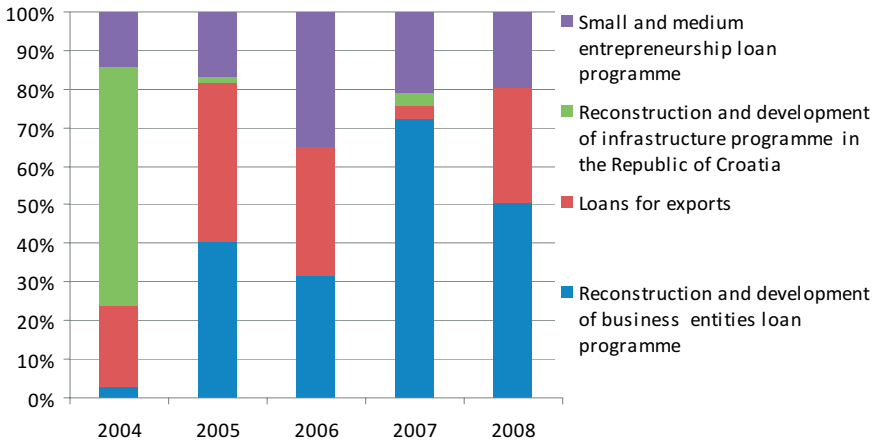
significant decrease of this programme in 2007 in Vukovar-Srijem county (Charts 3 and 4).

Chart 3: Structure of loan programmes for Osijek-Baranja county



Source: Internal data of HBOR

Chart 4: Structure of loan programmes for Vukovar-Srijem county



Source: Internal data of HBOR

4. Conclusion

Financing as a key factor in sustainable regional development requires specific forms, ways and combinations of various sources of financing. Such circumstances resulted in the establishment of credit and development

institutions, which to a greater extent take the lead in financing regional development, especially in developing countries. Therefore, financing through credit and development institutions is becoming more popular, largely due to the fact that these institutions promote common interests and use other government benefits at the same time.

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PORTER'S DIAMOND MODEL OF OSIJEK-BARANJA COUNTY INDUSTRY

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Abstract

Industry in Osijek-Baranja County has suffered from multiple direct and indirect consequences from the defensive war. It is estimated 60 per cent reduction in production capacities. Difficult situation was even worse as at the same time serious reduction of business activities, closing off its largest export markets, Former Yugoslavia, privatization process, and impossibility for facing foreign competition, occurred. Old technology, indifference to technical science with young people, brain drain to more perspective counties and states, and lack of financial sources, have only increased the existing problems that industry in Osijek-Baranja County is facing. In these conditions, it was hard to keep in step with global production trends and with orientation of traditional industry into "new industry" based on development and application of scientific and research work results. Industry is changing. It is changing in the way that it is becoming based on knowledge, innovation, creativity, sustainable development and new technology application in all business spheres. Because of that, industry has an influence on developing new businesses, most common non-production ones. From the moment of signing Stabilization and Association Agreement, the Republic of Croatia has possibilities to use financial resources from the European Union pre-accession instruments and funds. Thereby, Osijek-Baranja County can use great financial resources and use them to start reindustrialization in accordance with European Union industrial policy and Lisbon strategy.
By creating Porter's Diamond model of Osijek-Baranja County industry, the goal was to detect all possible opportunities and convert it to strengths, and also to include possible environment threats into long term industry development strategy. This model was used for creating implication of all factors in SWOT terminology.

JEL classification: F14

Key words: Osijek-Baranja County industry, "new industry", Lisbon strategy, Porter's Diamond model

1. Introduction

The last few decades have been marked by important political changes, outstanding scientific and technological shifts, positive growth of global trade, development of international companies and supranational institutions. The conditions in which the Internet sale exceeds 436 million dollars in 1995 to 30

billion American dollars five years later (Brown & Duguid; 2000), or the situation when Chinese or Indian engineers who in terms of work quality equal those in European Union or USA work for less than 20 thousand dollars a year (Ridderstråle & Nordström; 2003), are certainly great challenges for many leaders of macroeconomic politics of individual countries. Under the influence of these kinds of global movements, Hawksworth (Thurow, L.C.; 2006) emphasizes the changes in industry which are about to happen in 2050. and which will make some of today advanced industries losers of globalization, and the winners will become industries which are based on branding, media, health, financial services of fast growing countries (China, India), energy, and business services. Undoubtedly, there is a new „economy scene"emerging on the horizon in which simplicity, creativity and productivity play key roles. As an answer to these kinds of global changes, EU, through the document known as Lisbon strategy, set itself an extremely ambitious goal: till 2010 it has to become the most competitive and the most dynamic economy of the World based on knowledge, capable of sustainable economic growth with larger number and higher quality workplaces, and bigger social cohesion. Eight years after establishing this strategy, there have been many positive shifts, and yet not sufficient for accomplishing the basic aim of the European Union (Barrell & Kirby; 2007; COM374; 2007). In 2005 EU revised the Lisbon strategy and directed it towards the productivity growth, employment and economic growth. In order to accomplish the aims there is a need for measures on national level that will enhance public investments for research and development, encourage private investments for research and development through tax relief, improve the quality of the whole educational system, and above all high education.

Croatian economic growth is impossible without export expansion feasible through the development of industry based on knowledge and application of new technologies. As the chain breaks at its weakest link, so is the whole economic growth impossible if Croatia does not balance development of all its counties. Osijek-Baranja County has next to Vukovar-Srijem County, Sisak-Moslavina County and Šibenik-Knin County suffered multiple direct and indirect consequences of the defensive war. It is estimated that the overall production capacities of the County have been reduced by about 60% and that the direct war damage amounts to 3 billion euros (Borozan & Barković; 2003). Mined areas, killing of cattle, destruction of production capacities, reduction of production, loss of market, clumsy privatisation and unfavourable investment climate resulted in unenviable economic situation. The problems of this County are evidenced in almost every aspect of the economy. From the high unemployment rate, negative migrations, unfavourable investment climate, to the slow industrial production growth and the production which wholly underestimates the role of the scientific research, innovations and application of the high technology. This kind of industrial base can not enable the development of new competitive industries for the present global market. Long-

term sustainable economic growth should be based on industry based on knowledge – so called "new industry", application of new technology, innovations and production of value-added products. The opportunity for this kind of development can be found also in applying for financial resources of European Union pre-accession funds, and participating in national and county programs. Furthermore, stimulation of export-oriented production, the proximity of Josip Juraj Strossmayer University with its associated faculties, simulative measures for retention of young population, investing in scientific-research activities, innovations, stimulation of creation of value-added products and branding, are possible solutions to the problems of this County and a way towards the opportunity for success in the conditions of global economic scene.

2. Theoretical review

2.1.Definition of industry

Current structure of industrial production in Croatia is defined according to the National Classification of Activities. Pursuant to Article 4, paragraph 2 of the Law on National Classification Activities (National Gazette; NN 98; 1994), the Government of the Republic Croatia has at the sitting on May 31 2007 passed a Provision on National Classification of Activities – NCA 2007 (Cro NKD). On the date of entry into force of this Provision expires the earlier Provision on National Classification of Activities – NKD 2002 (National Gazette; NN 13; 2003). National Classification of Activities from 2007 is adjusted to the Classification Activities of the European Union known under the abbreviation NACE[220]. According to NCA the industry comprises mining and quarrying, the whole processing industry, electricity, gas, steam and air conditioning supply, and overall water management.

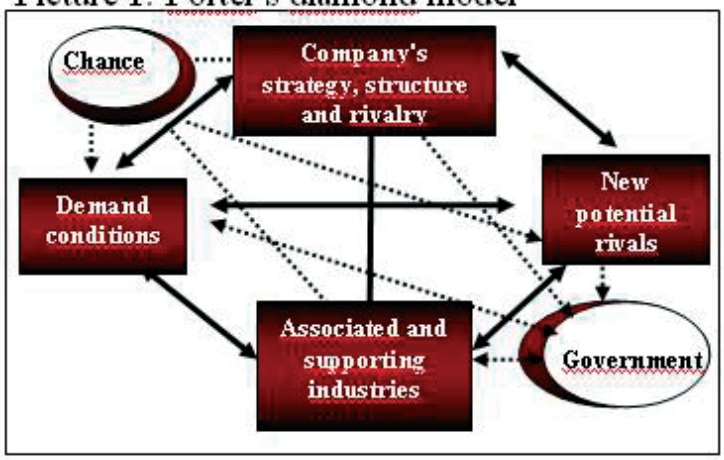
2.2. Porter's diamond model

Small countries have a relatively weak diamond of competitive advantages (Vlahinić-Dizdarević; 2006). According to Porter (1998) the analysis of competitive forces or advantages should be directed towards the key factors of the competition and the analysis of its impact on the company. Porter' s diamond model (Picture 1.) offers a holistic and flexible concept which enables all interest groups in some country the analysis of competition in all its complexity, and constructive communication about surroundings improvement with an aim to improve competitiveness. The national, as well as local prosperity is not inherited – it has to be created (Porter; 1998, p.155). This

[220] Available at: http://ec.europa.eu/comm/competition/mergers/cases/index/nace_all.html Access on: (20-02-2009.)

prosperity depends on the industry's ability to perpetually innovate and upgrade itself, and that is possible solely by means of increase in productivity – in all areas of economic activity. Porter's diamond model involves attributes that indirectly or directly influence competition advantage. These attributes form a surrounding in which a certain industrial company, industrial branch, overall industry, region or state act and learn how to "compete" in that surrounding. (Porter; 1998, p. 166).

Picture 1. Porter's diamond model



Source: Porter; 1998, p.127

Every field of the diamond and the diamond as the entire system comprises key factors which lead to competitive success. Those factors involve: all resources and abilities crucial for industry's competitive advantage; information which form the opportunities and give the answer to how available resources and abilities should be governed; aims of all interest groups; and what is most important, specific pressure of the company to investing and innovating. The diamond involves the four basic factors, mutually linked: 1) factor conditions, 2) demand conditions, 3) company's strategy, structure and rivalry, 4) associated and supporting industries. Apart from these four factors, the diamond involves two separate factors: the government and the chance. These two factors refer to the factors which can secure or contrary make "the fertile ground" heavier for the actions of industrial companies. The main role of the government is not to create rivals, but to create conditions in which the industrial companies will alone become competitive. SWOT analysis enables the evaluation of every item of Porter's diamond model, which can refer to individual product, individual company, industry branch, individual sector, the whole nation… It enables the linking of Opportunities and Threats in the surrounding with Strength and Weaknesses, in this case, the Osijek-Baranja

Country industry through alternative strategies and policies of the creator of macroeconomic policy on county, national and global level (Buble, et.al; 1997, p. 154). All items of Porter's diamond model or competitive advantages are listed hereafter by using the summary.

3. The position and industry trends in Osijek-Baranja County in the context of Porter's diamond model

3.1. Factor conditions

3.2.

Existing situation	Implications in SWOT terminology
Basic factors • Natural resource wealth • Outstanding human potential (3. counties according to the number of inhabitants (Croatian Bureau of Statistics; 2007) • Relatively good share of young and mature population (16% of the population from 0 to 14 years of age and 20% of the population from 15 to 34 years of age) (Croatian Bureau of Statistics; 2007.) • Relatively outdated technological basis • Insufficient number of highly educated population and professionals compared to the needs of "new industry" • Lower work costs as a result of lower salaries from average salaries in Croatia **Advanced factors** • Availability of the Airport Klisa • Good telecommunication and information technologies coverage • Growth trend in awareness about the importance of investing into scientific-research projects, innovation and lifelong learning • Business and administrative procedures acceleration through the government service hitro.hr, e-PDV (e-VAT) etc. • Insufficient financial resources for investing into productive investments – extremely small percentage of direct foreign investments • Insufficient awareness about the need to invest in the human factor, and scientific-research activities of the entrepreneurs	**Strengths** • 152 year old tradition of industrial production • Relatively many institutions for entrepreneur support and stability of J. J. Strossmayer University in Osijek – the centre of high education with 16 associated faculties **Weaknesses** • The problem of "brain drain" into other counties or abroad • Relative rigidness of company hierarchical structures, sluggishness of the controlling staff; slowness in adapting to changes on the market • Insufficient financial resources for capital investments • **Opportunities** • The possibility for applying for resources of European Union pre-accession funds, as well as national funds • Relatively good share of graduate students (11% of graduate students in Croatia) (Croatian Bureau of Statistics; 2007.) • Participation in projects for encouraging investments like „Enterprise Croatia", „Hrvatska izvozna ofenziva" etc. **Threats** • Growth of production capacities of South-Eastern economies which rival with low production costs and low product prices • Globalisation of production and loan jobs • Strengthening of regional competitiveness of neighbouring economies, and thereby strengthening of activities for attraction of direct foreign investments

3.2. Demand conditions

Existing situation	Implications in SWOT terminology
Domestic demand • Continuous growth of demand for products and services • Growth trend of demand for domestic, ecological, functional and products alike • Higher unemployment rate, a bigger share of supported population and the bigger share of the poor population in the County – smaller local demand for industrial products • Relative rigidness of industrial companies to the real consumer needs and wishes • Liberalisation of import offers a wide range of industrial products – bigger competitiveness on domestic market **International demand** • Trend of growth of demand on the world market • Existence of various demand : demand for extremely cheap and less quality products, demand for quality and cheap products, and demand for extremely quality and expensive products • Growth in demand for "individualised" products, specialised products • Fierce international rivalry	**Strengths** • Recognizability of domestic products quality • „local patriotism" • Existence of encouraging projects for consumption of domestic products like „Izvorno hrvatsko", „Kupujmo hrvatsko", „Hrvatska kvaliteta", „Kupujmo osječko" **Weaknesses** • Slowness in reacting to market changes, demand trends and market demand prediction • Neglecting the real wishes and needs of the consumers, and sluggishness in creation of new wishes and needs **Opportunities** • Export opportunities through growth trend in introducing the quality standard into industrial companies • The opportunity for the industrial companies to create a recognizable brands through investments in design and increasing the level of value-added products • Geographical position and Airport Klisa **Threats** • Fierce international rivalry which "steals" domestic consumers • International higher value-added products, more innovative products, more attractive products in design of relatively the same prices

3.3. Company's strategy, structure and rivalry

Existing situation	Implications in SWOT terminology
Structure * • 509 County industrial companies • County industry employs 37% of the employed • County industry makes 30% of the total profit • Processing industry makes 86% of export, and the whole industry 92% • Small share of direct foreign investments in the County (1,6% of all investments in Croatia) and industrial sector (18,7% of all investments in Croatia) *(FINA; 2008) **Strategy** • Industrial companies mostly base their production on reduced working costs, and	**Strengths** • Increase in efficacy of intellectual capital by 4%, increase in investing in certification (114 certificates in 2008) (Hrvatsko društvo za kvalitetu; 2008) **Weaknesses** • Significantly smaller productivity of workforce than the Croatian average (-40.741 kunas) (Croatian Bureau of Statistics; 2007.) • Insufficient share of County industry in national proportions (5,8% of Croatian workers, 5% of the total value of the industrial products sales etc.) (Croatian Bureau of Statistics; 2007.) • Manager nepotism, marketing

very often lower quality • Small investments into product innovations and patents • Small investments into marketing activities and making of recognizable brands • The trend of increase of import **Rivalry** • Very strong competition on domestic market and strong competition on foreign market • Relative overload for existing industrial production of the County, and slowness in orientation towards "new industries"	underdevelopment and lack of success in sales in Croatia **Opportunities** • The possibility for applying for resources of European Union pre-accession funds • Tax relief prescribed by State Aid Law (National Gazette; NN, 140/05) and Investment Incentives Act (National Gazette; NN, 138/06) • Encouraging the networking and interest grouping of the companies (clusters) **Threats** • „disparity" of export products with EU demand for high quality and innovative products • Strengthening of other world industrial rivals from the area

3.4. Associated and supporting industries

Existing situation	Implications in SWOT terminology
Offer of industrial products, raw materials, an equipment • Relatively good connection between raw materials basis and industrial production (food industry) **Educational institutions** • Stability of J.J. Strossmayer University in Osijek – the centre of high education with 16 associated faculties • Stability of the large number of vocational schools • Various kinds of additional business specialization courses and seminars **Institutions for entrepreneur support** • Osijek-Baranja County • HGK (Croatian Chamber of Commerce), HOK (Croatian Chamber of Trade), HUP (***Croatian*** Employers' Association) • Development Agency of Slavonija and Baranja; Agency for Development of Osijek-Baranja County • Faculty of Economics in Osijek • Entrepreneur centers and Technological Development Centers **Trends** • Strengthening of awareness about advantages interest grouping • „making of" numerous development strategies and operational programs	**Strengths** • Stability of the huge number of institutions for entrepreneur support and educational institutions • Developed business network in the County and Croatia by means of fairs, magazines, portals, counseling, seminars etc. • Connection between raw materials basis and industrial production in food industry • Connection between metal-processing industry with similar activities (e.g. mechanization for agricultural production) **Weaknesses** • Insufficient connection between educational and vocational institutions with industrial companies and other institutions for entrepreneur support • Insufficient awareness about the importance of good presentation on fairs, as well as the importance of economic fairs alone– very little competent staff in booths for offering of adequate information about products • Relatively outdated equipment and the very production technology **Opportunities** • CIP and FP7 EU programs for research potential and innovativeness • International cooperation by means of

• Clusterization in Croatia • Numerous business forums, business counseling, business magazines, business portals and business services	transfer of technology, joint scientific-research projects, and regional cooperation **Threats** • Slowness in adjusting to market changes and trends, and even neglecting of these trends • Insufficient interest grouping • Slowness in implementing or even neglecting the implementation of strategies and operative programs

3. Conclusion

Osijek-Baranja County industry is today set before a great challenge. In conditions of intensive technical and technological innovations and fast transformational processes, the County industry is an integral part of Croatian and world industry. Long-term survival of the company and rival defining of all local, national and global economies is possible solely and only by means of investing in "new industry", namely industry based on knowledge, innovation and creativity, and sustainable development. Osijek-Baranja County industry represents a relatively small industrial unit of national industry. However, through all opportunities offered by the surroundings and existing industry forces of Osijek-Baranja County, a great economic prosperity could be accomplished. Since the existing industrial production structure does not offer big development possibilities in the long-term sense, still by appreciating it, the development of industry focused on exploitation of the existing agricultural-food resources should be encouraged, and chemical, metal, wood, food and other production could be developed by means of production modernization. Due to all circumstances, the industry of Osijek-Baranja County objectively must search for its own development possibilities in the existing structure, but it can also find its true development chances through scientific research and cooperation with experts from the area in order to influence production improvement and the development of "new industry" which enables a long-term prosperity. Synergy of all factors will also influence the development of other activities, and thereby the development of the whole Osijek-Baranja County economy. Osijek-Baranja County industry is and can be a perspective activity branch which will produce and sell competitive products on more and more demanding domestic and foreign markets.

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FINANCIAL MEASURES AND INSTRUMENTS FOR ADJUSTMENT OF AGRICULTURE FOR EU ACCESSION

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Abstract

Agricultural development is the first and the main priority of the Republic of Croatia. Agricultural land comprises more than a half of te land area of the Republic of Croatia, almost 48 % of the population live in rural areas and the share of agriculture in GNP amounts to approximately 10%.
Since the Republic of Croatia wants to join the EU in near future various sorts of harmonisation of Croatian legislature with acquis communautaire are necessary. The process of harmonisation in the field of agriculture is especially demanding and multi-layered.
Sustainability and multifunctionality of agricultural production and rural regions are the very bases of modern agricultural policy in the most developed countries, including the EU. The negotiations held on agriculture between the Republic of Croatia and the EU make even 50% of the total negotiations, which additionally emphasizes the importance of agriculture.
Competitiveness of the national agriculture can increase substantially with the help of the preaccession funds, which is the topic of the paper. SAPARD stands out as the most important among them; within this fond the Republic of Croatia can have use of 25 million euros. The same amount is provided for the new preaccession fund IPARD that will replace SAPARD next year. The aims of these funds are to prepare the candidate countries, i.e. Croatia for their participation in EU common market when it comes to accession.

JEL classification: G32, K20, K40,

Key words: agriculture, EU, preaccession funds, SAPARD, IPARD

1. Introduction

Taking the expected crucial changes in different segments of our society into consideration as preparation for future EU membership it has become clear that

the harmonisation process in the field of agriculture is extremely demanding and complex.
Croatian agriculture of today does not have a developed competetiveness of its farmers as is the case in most EU countries. Therefore the rapid building up of competitiveness of our agricultural farming is the key prerequisite of their successful integration into common European market where all existing barriers seize to exist.

The new budget awards agriculture with 98 million kuna less and this by reducing subventions and support for rural development[1], which can be understood as a supplementary impetus by introducing the Croatian farmers to the advantages of pre-accession funds.

2. General information on pre-accession funds

The European Council presented in Essen in 1994 a pre-accession strategy for the states of Central and Eastern Europe to improve adjustment and prepare for EU membership. Financial aid for the countries in the process of EU accession is an important part of the strategy. Pre-accession funds were formally open for Croatia in 2005, which means that Croatia just like all other candidate countries has the right to financial aid with an aim of better preparation for full EU membership.
The EU pre-accession funds PHARE, ISPA and SAPARD could be implemented until 2007 and from 2007 to 2013 these three pre-accession funds were integrated into one. Besides, the fund application will be easier to manage and types of projects for financial aid will diversify.

Image 1. The targets of EU pre-accession funds

Programme	Targets
PHARE	For the process of cofinancing of common projects for institution building necessary for the process of integration, economic and social cohesion (building of state institutions for the investment necessary for implementation of the acquis)
ISPA	Finances structural projects in candidate countries in the fields of environment and transport infrastructure
SAPARD	Assists the candidate countries and prepares them for participation in the common agricultural policy and internal market on the basis of a wide range of adjustment measures relating to agricultural structures and rural development

Source: http://www.businessnavigator.biz/kreditni_vodic/eu_fondovi/pretpristupnifondovi

[1] Nevertheless, the Osijek-Baranja county will increase the 2009 budget for agriculture from 65 to 80 million kuna since it holds 17.5% of total arable land in the Republic of Croatia.

It must be mentioned that the money from the mentioned funds is not without charge. The European Union does not finance the projects in their entirety but 75% of the project whereas the remeinaing amount of 25% must be financed through state or local budget and when it comes to SAPARD this proportion can amount to 35%. This would practically mean that regardless of the project quality the amount of the finances from pre-accession funds would be limited by the amount of the means that potential fund user is ready to invest. It must be mentioned that the potential fund beneficiary must provide for the entire amount at the beginning of the project that will then only after the project realisation be refunded from EU funds and national cofinancing. Moreover, it is worth mentioning that the European Union monitors both the application of funds and project implementation.

Image 2. Pre-accession funds financing proportions

Fund	Financing proportions
PHARE	EU and the state finance the entire amount of the project
ISPA	EU finances 75%, up to 85% of the costs of large structure projects The remaining amount is financed from the state budget, loans and/or public private partnership
SAPARD	EU finances 75% of the project costs (in extreme cases up to 100%) In commercial projects, maximum EU financing amounts to 50% (if lesser subsidizing limit has not been stipulated by the Law)

The experience of the former candidate countries has shown that the preparation of the project is crucial. Some funds such as SAPARD require intensive preparation[2]
It is also important to mention that amounts awarded to Croatia are apparently lesser than amounts awarded to some other member states at the time when they could use financial assistance through pre-accession funds. The explanation to this can be found in the opinion of the European Commission that Croatia would for its general development and preparation need less means within the membership preparation. However, contradicting itself, the European Commisssion also considers Croatia not to be at the level that could enable the implementation of pre-accession funds to the full so that for that reason the awarded amounts are lesser than expected.

3. The Republic of Croatian and pre-accession funds

Agricultural development is the first and the greatest priority of the Republic of Croatia. Agricultural land comprises more than a half of its land area, nearly

[2] The experience of former candidates has shown that ISPA and SAPARD require more extensive preparations taking up to two years.

48% of the population live in rural area and the agricultural share in GDP amounts to 7%.[3]

Considering the fact that the Republic of Croatia wishes to join the EU in near future there are various sorts of harmonisations of the Croatian legislature with acquis communautaire that are necessary. Particularly demanding and complex is the process of harmonisation in the field of agriculture. Croatian agriculture has been regulated by many laws and regulations. The Law on Agriculture[4] regulates objectives and measures of agricultural policy, beneficiaries, agricultural or family farms, institutional assistance, administrative monitoring and reporting on agriculture as well as administrative and inspection supervision (art. 1). It is the Law on Agriculture that makes a legal framework for implementation of agricultural policy measures. The Law on Agriculture, the Agricultural and Fishery Strategy of the Republic of Croatia[5], the Rural Development Strategy of the Republic of Croatia and Law on State Subsidizing in Agriculture, Fishery and Forestry[6] make the bases of the National agriculture and rural area programme for the period 2006-2008. Besides mentioned regulations there are numerous legislative instruments and strategies for agriculture.

The sustainability and multifunctionality of agricultural production of rural areas are the bases of moder agricultural policy of the most developed countries including the EU. Negotiations on agriculture between the Republic of Croatian and the EU take almost 50% of the total negotiations, which additionally speaks for the importance of agriculture. The future of Croatian agriculture will be largely determined by EU negotiations. The competitiveness of Croatian agriculture on the market can be gained through EU pre-accession funds. Special attention should be paid to SAPARD.

3.1. SAPARD[7] is a special EU programme started in June 1999[8] aimed at managing problems in agriculture and rural development for enhancing competitiveness in reference to the EU market and implementation of EU regulations in candidate countries. Candidate countries can implement SAPARD programme until they join EU.

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[4] The Law on Agriculture NN 83/02
[5] Pursuant to art. 80 of the Constitution of the Republic of Croatia, the Croatian Parliament in session of 11th July 2002 agreed on the Agriculture and Fishery Strategy of the Republic of Croatia
[6] The Law on State Subsidizing in Agriculture, Fishery and Forestry NN87/2
[7] Special Pre-Accession Assistance for Agricuture and Rural Development
[8] European Commisssion regulation Nr. 1268/1999

The programme aims at:
- harmonisation with EU legislature in agriculture
- preparation in common agricultural policy (CAP)
- investing in agricultural land
- improvement of soil quality
- afforestation of agricultural areas
- supporting the manifacturers of wood products,
- improving the quality of arable land and parcelling
- land-ownership records
- professional education and training
- agricultural and fishery products processing and marketing building up

As a rule, final users are the producers and not the state. The agriculture market and structural aid authority has been structured to performing the SAPARD programme of the Agency. It is the Agency that fulfills the function of SAPARD implementation starting from instruments preparation and inviting applications, project awarding, funding and field control[9]. SAPARD funding is targeted and grant-in-aid.

The following financing measures have been chosen from SAPARD programme in the Republic of Croatia:
1. investing in farming (final beneficiaries are natural and legal persons, farming registered with the Farming record).
2. agricultural and fishery products processing and marketing promotion
3. rural infrastructure improvement (final users of the infrastructure investment are districts with up to 10000 inhabitants)
4. technical support, information and promotion campaign (final user is SAPARD administrative bord with the relevant ministry)
There were three invitations to application for SAPARD funding:
1 26 July – 31 October 2006
2 28 March – 28 July 2007
3 12 February – 3 April 2008.

In 2006 and 2007 there were two invitations to application for financing activities from Measures 1 and Measures 2 SAPARD programme when a total of 29 project suggestions were awarded. SAPARD programme project funding amounted to 87 million kuna. Since measures 1 and 2 of the SAPARD programme provide for 143 million kuna in February 2008 the Ministry of Agriculture, Fishery and Rural Development made the third invitation to application for measures 1 and 2 as to agree upon the remaining funding.

[9] Field control is done in the following 5 years from the final SAPARD funding.

In 2007 the Ministry announced inviting application on implementation of Measure 3 SAPARD programme- Rural infrastructure development concerning local self-government with less than 10000 inhabitants (2001 census). According to the sector analysis within

Measures 3 the projects will be stimulated linked to the following:
public non-assorted roads (allowed investment in building and/or reconstruction of public non-assorted roads)
building and/or reconstruction of forest fire-prevention paths/ multipurpose roads
building and /or reconstruction of sewage system and waste water purification plants
building and/or reconstruction of heating plants using waste and/or by-products from agriculture and/or forestry.

3.2 IPA

With a new budget period 2007 -2013 the EU introduces new conditions for financing agriculture and rural development both for the member states and candidate countries. Unique programme IPA[10] established by the Council of Ministers [11] on 17 July 2006 will replace the PHARE, ISPA and SPARD programmes.

In 2007 the Republic of Croatia became the beneficiary of IPA programme until EU accession. The Central State Office for Development Strategy and Coordination of EU funds is in charge of IPA programme implementation in Croatia whereas the Ministry of Finance is in charge of entire financial management.

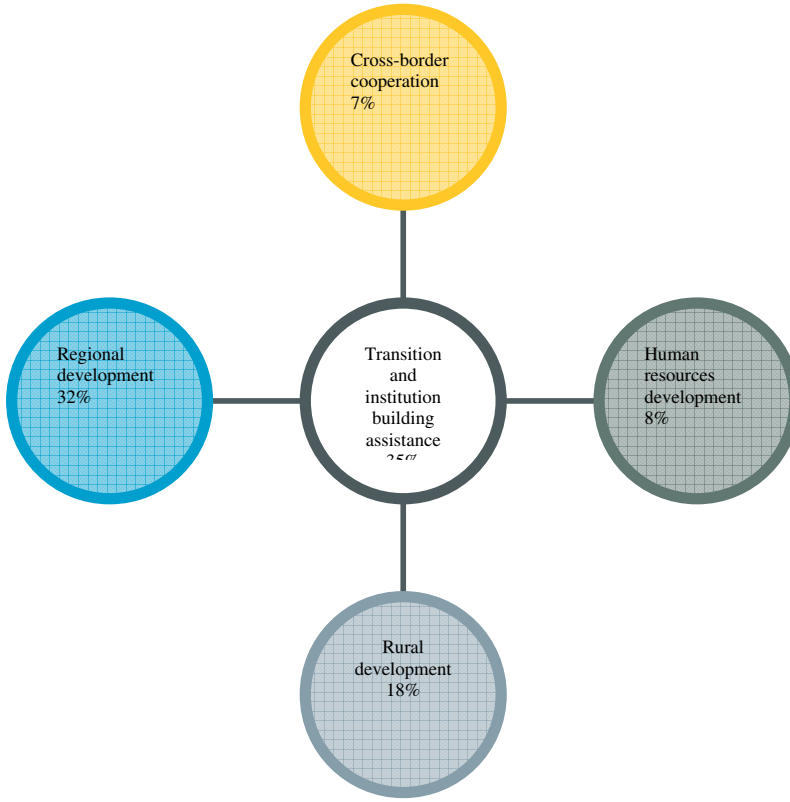
The IPA is made up of five components[12]:
1. support for transition and institution building
2. cross-border cooperation
3. regional development
4. human resources development
5. rural development[13]

Potential beneficiaries are the local self-government units, farmings and other natural/legal persons depending on priority measures.

[10] Instrument for Pre-accession Assistance
[11] EU Council regulation Nr. 1085/2006
[12] www.strategija.hr/default.aspx
[13] This component precedes agricultural funds that will be available to Croatia after the EU accession.

The IPA aims at increasing the rural population income in Croatia through development adjusting it to EU standard. According to the Union criterion the limit of rural-urban population is 150 inhabitants at a square kilometer. Only the City of Zagreb (1215) and Međimurje county (162) belong to the urban zone out of 21 counties in Croatia. Even 91,6% of the Republic of Croatia is considered rural area i.e. almost 89% of the places are situated in rural areas[14].

National accreditation of the rural development component started on 15 September 2008. Accreditation was required for farming investment measures, agricultural and fishery products processing and marketing improvement as well as for the rural infrastructure investment.



Source: http://www.safu.hr/hr/o-programima-pomoci/ipa

[14] http://www.poslovni.hr/106846.aspx

Table 3: Funding allocated for the Republic of Croatia according to IPA components in four years

in mil. Euro IPA programme components	2007	2008	2009	2010	TOTAL
Assistance in transition and institution building	49.6	45.4	45.6	39.5	180.1
Cross-border cooperation	9.7	14.7	15.9	16.2	56.5
Regional development	44.6	47.6	49.7	56.8	198.7
Human resources development	11.1	12.7	14.2	15.7	53.7
Rural development	25.5	25.6	25.8	26.0	102.9
Total	140.5	146.0	151.2	154.2	591.9

Source: http://www.strategija.hr/Default.aspx

4. EU pre-accession funds implementation state

Through EU pre-accession funds[15] the Republic of Croatia was awarded 289.80 million Euro to 1 December 2008, out of which 217.8 million Euro i.e. 75.2%[16] has been agreed. Payments are in action and 102.5 million Euro (47.1%) have been paid of the total contracted means[17]. It should be emphasized that final payment data for particular programmes will be known after each programme finishes i.e. by the end of 2011.

Through SAPARD porgramme the Republic of Croatia has been awarded the total of 25.0 million Euro out of which 8.9 million Euro (35.6%) has been contracted. Final beneficiaries have been paid 2.9 million Euro (32.7%) of the contracted. In the course of preparation for the fourth invitation to application the percentage of SAPARD funding utilization will increase.

[15] CARDS, PHARE, ISPA, SAPARD

[16] The contracting has been still in action for ISPA and SAPARD and it is expected that the total of the contracted amount will increase

[17] www.safu.hr/datastore/filestore/10/Stanje_u_provedbi_pretpristupnih_programa_EU_1_prosinca_2008_godine.pdf

Table 4: Pre-accession assistance programmes total- awarded, contracted and paid

in mil. Euro CARDS	PHARE	ISPA	SAPARD	TOTAL
Awarded means for the Republic of Croatia	75.9	129.9	59.0 25.0	289.8
Contracted	72.7 (95.8%)	111.7 (85.9%)	24.5 8.9 (41.5%) (35.6%)	217.8 (75.2%)
Number of contracts	174	329	13 30	546
Settled out of contracted	58.2 (80.1%)	38.4 (34.7%)	3.0 2.9 (12.0%) (32.7%)	102.5 (47.1%)
Payment deadline	31 December 2010	30 November 2011	31 December 2011	31 December 2009

Source:www.safu.hr/datastore/filestore/10/Stanje_u_provedbi_pretpristupnih_programa_EU_1_prosinca_2008_godine.pdf

5. Conclusion

The results of the development policy by combination of own funding and EU financing will have been seen in 10 years. EU pre-accession funds have considerably been used up and recently the upper limit of the funding has been set, which means that Croatia cannot expect as much money from the pre-accession funds as the countries of the last EU enlargement. It is for this reason that Croatia has to be prepared. The EU assistance can improve living standards but one should know how to get them. There is a will, but we lack knowledge. The state should provide professional assisstance in the course of pre-accession funding absorption in order to avoid the already experienced case with SAPARD when in the course of three years and three invitations to application only 46% of the offered funding was used. It should be emphasized that once they join the Union, the new Member States are no longer entitled to pre-accession assistance since the remaining amount is at the disposal of candidate countries.

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WHEAT PRODUCTIVITY AND PLOUGH LAND INEQUALITY IN RURAL CROATIA

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Abstract:

The unequal distribution of plough land could be according to a prior naive theorizing be a source of inefficiency in wheat production. The paper investigates whether, plough land inequality due to specific less or more egalitarian land distribution, and is a source of possible inefficiency measured by wheat productivity within Croatia's counties. We analyze these issues by using cross-county data on inequality in operational holdings of plough land from Agricultural Survey in 2003. After constructing the Gini coefficient for plough land holdings, and other relevant exogenous variable which cover necessary inputs condition as a average holding size per ha, labor, capital (represented by alternative variables summed by number of combine harvester and tractor), among counties, an estimation of an production function, is done by OLS estimations of wheat output.

JEL classification: Q11, Q16

Keywords: Wheat Productivity, Production Function, Plough Land Inequality, Croatia

Introduction

This paper examines the relationship of plough land distribution and wheat productivity across counties in Croatia by utilizing data on the distribution of operational family farm size within counties calculated by the Agricultural Survey (2003). As a prelude in a core of the problem, consider figure 1 which plots wheat output per hectare against plough land inequality as measured by the Gini coefficient. There is a significant negative relationship, showing that inequality in plough land size within a country is associated with low wheat productivity, or alternatively whit a low operational holding size (see Figure 2).

The robustness of previous scatter relationships is addressed by including the Gini coefficient in the estimation of a wheat production function. The results show that the negative relationship between plough land inequality and what productivity persists even in half-intensive production function for wheat when controlling for input use, as a family farm size, aggregated capital, and labor.

The negative relationship between overall land distribution and agricultural productivity is consistent with the productivity advantages of farms operated primarily with family labor, something documented by several lines of research. A bunch of papers (Johnston & Kilby 1975, Johnston & Clark 1982, Tomich, Kilby & Johnston 1995) examine the variability between unimodal (or equitable) and bimodal (or unequal) agrarian structures among countries. They stress that for most countries the equalitarian land allocation structure among family agents is more productive because it equalizes the marginal product of labor across farms. Labor misallocations arise in unequal land in use structures because labor supervision costs and policy distortions combine to make capital relatively cheap for large farms. This article is leaning on (Vollrath, D., 2007) and his very robust exposition, model construction and econometric methodology. In this paper we should concentrate on testing the excepted negative trade-off between wheat productivity and plough land inequality having only wheat production along various Croatia's counties in mind.

The aim of the paper is to analyze quantitatively production characteristics of the wheat output per hectare based on Cobb-Douglas production function augmented by Gini coefficient and family farm holding size. Obtained elasticity's results are estimated by OLS estimation. The collaterally results as a technical progress in the wheat production is deduct and we discuss their consequences at the end of the paper.

Data source

This paper has quantified the effect of plough land distribution on cross-county wheat productivity by using data from the website (http://www.dzs.hr/hrv/censuses/Agriculture2003/census_agr.htm) (2003) regarding the Gini coefficient for the size of operational land in use holdings within counties.

Measuring Plough Land Distribution

The distribution of plough land among family holdings is measured using data from Agricultural Survey (2003). We computed Gini coefficients for the size distribution of plough land within 22 Croatia's counties using data about

plough land size in ha weighted by distinctive cohort variability (from less than 1.5 ha to the more than 20 ha) . The size classes used are standard across counties, observed in 2003, so that the Gini is comparable across counties. The Gini coefficient in mean is about 0.27, very distinctly measures the average distribution of plough land among family holdings. Because it's nearer to bottom limit than the upper (theoretically the Gini could be in 0-1 interval) we note convergence toward unimodal distribution of plough land and presence larger concentration area on medium range in ha land plots. In Krapinsko – zagorska County County we noticed maximum Gini (0.5) as extreme in and in Grad Zagreb only 0.12 but nevertheless the first figure we should stress relatively egalitarian structure of plough land distribution. Very plausible it is inheritance of agricultural reform after the Second World War and interdiction of land property above 15 ha *per capita.* Now we hypothesize, could the low median value (0.24) for Croatia's counties suggest that low plough land inequality does lead to high wheat productivity. One limit of the (low) Gini coefficient is that it cannot distinguish between a very few extremely big plough land family holdings or numerous small family plough land possession, or shortly it can not properly shed a light among differences in the scale of plough land across counties, But from visual inspection of the data we find that medium range in ha land is overrepresented. However, to address this additional control for average family farm per size (land in use in ha) is construct. Average family holding size per land in use ranges from a high of 4.18 hectares in Bjelovarsko – Bilogorska in 2003 to a low of 1.23 hectares in Splitsko-dalmatinska County in same year. The median land in use size per rural family in the Croatia falls only to 2.75 hectares *per* our calculation in 2003, yet averaged 2.9 ha in 1998 or 6 ha about a century ago according to history review (Mihalj, P, p. 1 ¸ 1998), those figures gives a six fold difference in holding size between the very developed OECD countries (although measured in 1980) and the Croatia's regions. The broad historical and institutional factors with its deep impacts on land inequality and distribution in Slavonia region has been analyzed, thereby we refer to an excellent study (Bosendorf, J., 1950). A plot of the Gini coefficient and the log of average holding size are shown in Figure 2. There is a small (if the farm size increase on average 1 ha the Gini will fall about 0.05 indicate slightly more unimodal structure, and statistically insignificant negative relationship between the two measures. Both measures will be included in each specification to capture both aspects of land distribution.

Plough Land Distribution and Wheat Productivity

Overall wheat output per hectare in the economy, y, is simply a weighted average of the wheat output per hectare of each farm type within each county. Otherwise, y is measure for land plot productivity. If we distinguish between small (θ_s) and large (θ_l) plough land endowment (expressed in average land area) in wheat production and if we conceive for a moment that one portion of all family plough land holdings are small farms and attach $1 - \lambda$ in front that batch, and as a opposite λ stands for large farms, we can specify the following equation for wheat output productivity per ha

$$y = A\,[(1-\lambda)\,\theta_s\, f_s(x_s) + \lambda\theta_l\, f_l(x_l)] \tag{1}$$

The term λ in previous specification is thus a crude proxy for the Gini coefficient of land inequality, A is total factor productivity (TFP), and the terms $f_s(x_s)$ and $f_l(x_l)$ are the per-hectare production functions applicable to small and large farms, respectively, and x_i, $i = s, l$ is the vector of per-hectare inputs used by each type of farm. If there is no difference in production between the types of farms, then $f_s(x_s) = f_l(x_l)$ and the expression for wheat output per hectare in (1) reduces to

$$y = A\,[(1-\lambda)\,\theta_s + \lambda\theta_l]\, f(x) \tag{2}$$

where $f(\cdot)$ is the general production function common to both kinds of farms and x is the vector of aggregate input use per hectare. The term in brackets in equation (2) is simply average family holding size in a county.

In estimating the effect that the distribution of operational holdings has on wheat productivity, a basic assumption will be that all counties share a common production function because of law of one price in a small economy as a Croatia is. Due those assumptions the inputs and output wheat price tend to equalize and converge to one steady value for each county, respectively in given point of time. This assumption is common to the literature on cross-county (or even country which is less plausible because of possibility of different efficiency labor or capital units required per ha unit of wheat production) agricultural productivity. The specification used for estimation follows this literature as well and can be written in its most general form as

$$\ln Y_i = \beta_0 + \beta_1 G_i + \beta_2 \ln Z_i + \beta_X \ln X_i + e_i \tag{3}$$

where Y_i is wheat output per hectare , G_i is the Gini coefficient, l_i is land per holding, X_i is a vector of inputs in per hectare terms, and e_i is a potentially heteroskedastic error term. The coefficients β_1 and β_2 capture the partial wheat productivity effect of plough land inequality and average family holding size, respectively. βX is vector of input coefficients for their respective of control

variables, and β_0 is a constant. Including total land in X_i would allow for the possibility of decreasing or increasing returns. Excluding total land from X_i implicitly assumes the production function is constant returns to scale, if we introduce some restrictions. It is the best that in that context simultaiasly we obtain the TFP contribution to wheat output production among counties. To gauge out partial wheat productivity effect of TFP which could be different among counties we should neglect for a moment previous general to specific strategy (in which we dropped out "statistically insignificant" variable), and focus on intensive form of Cobb-Douglas production function given in per person –worker type due to constant return to scale restriction of following type,

$$\ln \dot{y}_i = \ln \alpha + \ln \beta_x \dot{k}_i , \qquad (4)$$

In (4) $\ln \dot{y}_i$ as a wheat output per ha divided by number of employees on farm (conditioned by workers who are indexed by higher than six hours pro day working) stands for ln Y – ln R (R is number of employment), and $\dot{k}_i$ is aggregate capital inputs measured by number of combine harvester and tractors divided by same labor weight. In a competitive equilibrium, βx is the fraction of wheat income after reselling by unique wholesale price that goes to the capital input, and 1- βx is the fraction that goes to the labor input thus does fulfills condition of the constant returns to scale $(1- \beta x + \beta x =1)$.

The evolution of the wheat output per ha/labor ratio is determined by movements in the capital/labor ratio and by technical progress (incorporated by Solow residual after regression is obtained). Put differently, the Solow residual as a measure of total factor productivity is according to (5),

$$\widehat{A} = \frac{\widehat{Y}}{\widehat{L}^{(1-\beta x)} \widehat{K}^{\beta x}} . \qquad (5)$$

If we determinate (5) that the TFP is dependent on the Gini and family holding size too than the TFP should in half-intensive form be calculated as a

$$\widehat{A} = \frac{\widehat{Y}}{e^{\hat{G}\beta 1} \hat{Z}^{\beta 2} \widehat{L}^{1-\beta x} \widehat{K}^{\beta x}} , \qquad (6)$$

Because the Gini indicators is given in linear form and in log-lin specification the elasticity's of regression is equal to slope which stands before the variable we involved e=2.718282 as a base below the Gini and its elasticity, the other

exogenous variables are given in log form and elasticity are present as a exponents.

Ordinary Least Squares Specifications and Results

The base estimations pool the 21 observations together and uses ordinary least squares (OLS), to estimate specifications of the form found in (3) in various form is given in Table 1. The initial specification in column (1) includes only the Gini coefficient and average holding size as controls.

The Gini is negatively related with wheat output per hectare, and is significant at the 5% level. The point estimate indicates a very strong correlation of land inequality and wheat productivity, with a one standard deviation decrease in the Gini coefficient toward the more unimodal plough land distribution associated with an increase in wheat output per hectare of 13%. Column (2) adds controls for land in use and the most obvious result is that the point estimate for the Gini coefficient remains negative, with increased significance. This result is altered in column (3) when the capital per person-workman is added as control input variable. Now the Gini coefficient drops out as insignificant (and positive) , the size of family holdings predict that 1% increase of the average farm will influence on decrease of wheat productivity by about 0.82% significantly. The elasticity of wheat output value with respect to capital and labor because of half-intensive form (in column 3) and constant returns to scale set-up restriction is fitted as 0.52, and 0.48, respectively., the Gini and family holding size coefficients both have inverse effects on wheat productivity and are significant as determinants.

The Distribution of TFP in Wheat Production among Counties

The intensive form of Cobb–Douglas production function, (in column 4) estimation, provides a good fit to Croatia wheat output and is also a good analytical tool for TFP contribution accounting. The subject under discussion is

the function $Y = AL^{0,29}K^{0,71}$. However, despite the statistical and econometrical acceptability it looks like that the coefficient βx=0.71 is in our judgment certainly overestimated beside if we assume that its size contain a unobservable fraction of the human capital involved in managing with the required tractors, combines, fertilizers etc. If we add various control variables (as the Gini coefficient elasticity par because afore-mentioned theory link: -output, the TFP, plough land distribution, and inputs,…, or land size or both determinants, but than alas operating with less degree of freedom in processing regression we obtained more acceptable ratio of capital – labor share in production value unit of wheat per ha. By virtue of be consistent with exposed theory we choose capital:labour elasticity ratio 0.6 : 0.4. This ratio is obtained according to

column (6) where the Gini is involved as controlled variable (in the benchmark C/D model).

According to this, for the analyses of the distribution of the TFP, two artificially constructed functions will be used, which, satisfies the condition of constant returns to scale.

$$\ln (Ai) = \ln (yi) - ((0.71 * \ln(ki) + 0.29* \ln(li))$$

$$\ln (Ai) = \ln (yi) - ((0.6 * \ln(ki) + 0.4* \ln(li) + 2.1*gi))$$

In Table 2 we try to depicted quantitatively the distributional effects of TFP differences across counties in wheat value output per ha. Because the impact of TFP on the wheat economy hinges on the parametrization of the plough land distribution too, our approach was to restrict these parameters using the cross-sectional heterogeneity within a county. Our results indicate that factor differences in TFP of 70 (even 74 by the Gini involved in) is related among Grad Zagreb county (as a rural producer are the weakest user of TFP in wheat production) and Dubrovačko –Neretvanska (as the strongest county in TFP implementation). Our explanation of such evidence implies that TFP differences across two counties are because Grad Zagreb is not traditionally rural area and the cumulative effects of "learning by doing" in the history of wheat production are very poor in Zagreb area. In other words, differences in TFP accumulation obtained according to Table 2 is substantial; whether plough-land inequality increases or decreases cross-section distribution of TFP across counties is a quantitative question and we can answer on that if we compare column 4 and in Table . We find that counties with lower TFP (as Grad Zagreb, Međimurska, Istarska) feature substantially more cross-section equality (or unimodel land distribution structure).

Conclusion

Our results show that the Gini coefficient and the diversity of wheat productivity degree across the counties are in a significant negative relationship. This effect persists even after controlling for, first by only land in use as a proxy for family holding size, and second for inputs use as a the capital –labor ratio. These results support our hypothesis on the advantages of unimodal or broad-based distributions of plough land in the oligopolistic structure of wheat production within Croatia. Yet if Croatia is country with relatively egalitarian structure of plough land distribution, as we find in this article, our point estimates imply that a drop in the Gini coefficient of one standard deviation would increase wheat output per hectare by 13 %. The

elasticity of wheat output value with respect to capital and labor because of half-intensive form and constant returns to scale set-up restriction is fitted as 0.52, and 0.48, respect, or 0.7 and 0.3 in the pure intensive form. At the end we find that counties with lower TFP (as Grad Zagreb, Međimurska, Istarska), as a paradox, feature substantially more cross-section equality (or unimodel land distribution structure) and this result is in the first view contradictory with previous evidence but TFP as unobservable input in production could be endogenously linked with a specific climate or land quality factor, and in this paper we didn't modeled those issues.

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Appendix

Figure 1: Wheat output and plough land distribution

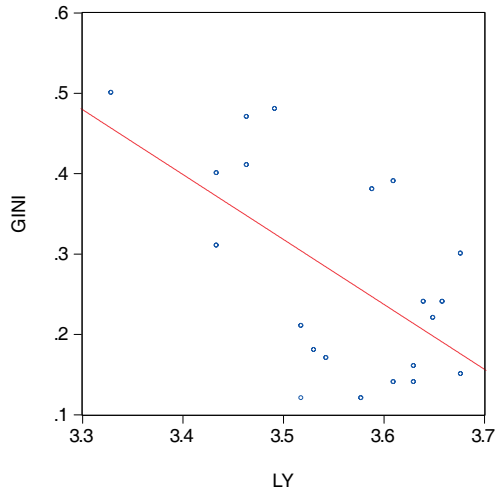

Figure 2: Plough land distribution and average holding size

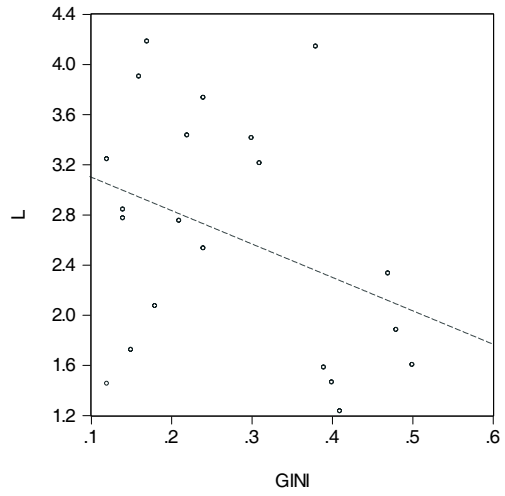

Table 1: OLS Regression Results

	DEP VARIABLE: LOG WHEAT OUTPUT PER HECTARE (IN EURO)			DEP VARIABLE: LOG WHEAT OUTPUT PER HECTARE (IN EURO) – LOG LABOUR FORCE		
Exp Variables	(1)	(2)	(3)	(4)	(5)	(6)
Gini Coefficient - Gi	-0.44** (-3.21)	-0.35** (-2.49)	-2.08* (-2.88)	-2.08* (-2.88)		-2.1** (-2.57)
Log Avg. Farm Size - ln Zi		0.15** (1.44)	-1.37** (-2.77)	-1.37** (-2.77)		
Log((No.Of Combines+tractors)-labour force))			0.51* (10.45)	0.51* (10.56)	0.7* (30.5)	0.6* (14.6)
Constant	3.67* (90.8)	3.59* (51.8)				
R- squared	0.35	0.41	0.54	0.55	0.11	0.34
Durbin-Watson		1.95	1.4	1.3	1.36	1.23

Table 2: The Total factor productivity in Wheat Production

County	TFP	TFP_GINI	TFP in percentage	TFP_GINI in percentage
Zagrebačka	0,04	2,16	0,18	1,66
Krapinsko-zagorska	0,64	3,76	3,05	2,89
Sisačko-moslavačka	0,58	3,40	2,75	2,62
Karlovačka	0,92	4,68	4,38	3,60
Varaždinska	0,54	3,49	2,58	2,69
Koprivničko-križevačka	0,45	3,10	2,14	2,39
Bjelovarsko-bilogorska	0,46	3,07	2,19	2,36
Primorsko-goranska	2,05	12,55	9,80	9,67
Ličko-senjska	1,72	9,74	8,21	7,51
Virovitičko-podravska	1,00	5,03	4,76	3,88
Požeško-slavonska	0,80	4,12	3,82	3,17
Brodsko-posavska	0,65	3,74	3,12	2,88
Zadarska	1,59	8,84	7,59	6,81
Osječko-baranjska	0,68	4,01	3,26	3,09
Šibensko-kninska	1,74	9,82	8,29	7,57
Vukovarsko-srijemska	1,30	6,90	6,22	5,32
Splitsko-dalmatinska	1,04	5,42	4,95	4,18
Istarska	0,52	3,48	2,47	2,68

Dubrovačko-neretvanska	2,80	24,82	13,37	19,12
Međimurska	0,59	3,48	2,81	2,68
Grad Zagreb	0,86	4,20	4,10	3,23
TOTAL			100,00	100,00

TECHNICAL AND TECHNOLOGICAL FACTORS AND ECONOMIC RESULTS IN WATERMELON PRODUCTION

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Abstract

Watermelon production in Croatia has stagnated for a number of years and it could be mostly found on individual farms as their source of income in summer months. According to official data, production in Croatia in the year 2005 amounted to 66.280 tons. Growing watermelons from transplants is the most intensive way of production and it provides the highest yield. In combination with polyethylene mulch and drip irrigation it provides a stable and early yield.
Transplants on mulch with drip irrigation were used in our example. The subject of research of this paper is organization of watermelon production on the area of three hectares. Based on calculated standards and developed technological map, the consumption of 44,3 hours of machine work and 332 hours of human labour per hectare were determined. The total costs amount to €3.475,38, and, with 120 tons of yield and production value of €4.563.65, the realized income was €1.088,27. Based on the coefficient of economy of 1,31, the conclusion was made that watermelon production is efficient, and every €100 invested in production resulted in €31,3 of profit.

JEL classification: O13

Keywords: watermelon production

Introduction

Watermelon is a very old crop originating from the central and southern areas of Africa, where wild and semi-wild types of watermelon can be still found even today. In Europe, watermelon is mostly produced in Greece, Italy, Spain, Romania and Russia.
Watermelon production has no larger significance for economy, but still it has a significant importance for nutrition of population. Watermelon production in Croatia has stagnated for a number of years and it could be mostly found on individual farms as a source of their income in summer months. In the past few years there was a need for larger areas and larger investments in watermelon production, but such investments were never realized to larger extent due to high dependence of the crop on climate

conditions and uncertain end result. Watermelon is mostly grown on individual farms as „bostan“, in combination with melon (Jurišić, 2009). According to FAO data, the world watermelon production amounts to approximately 100 million tons (97.537.564,16 t in 2005). The Table 1 provides account of the world's largest producers. According to official data, production in Croatia in the year 2005 amounted to 66.280 tons.

Table 1: World watermelon production in 2005 according to FAOSTAT (in 1.000 tons)

COUNTRY	China	Turkey	Iran	USA	Brazil	Egypt	Other
PRODUCTION	69.213	3.970	3.260	1.718	1.505	1.500	16.371

In addition to vitamins and minerals, watermelons are also rich in lycopene, which is a very important anti-oxidant, important for cancer prevention and preservation of blood vessels.

Production structure on Kovanović family farm in the village of Soljani (Eastern Croatia)

Kovanović family farm in Soljani has a rich farming tradition. After the break up of the cooperative and limitation of land ownership imposed by the state, crop and livestock production on the farm were continued in the form of an independent family business. After the Croatian War of Independence, arable land area was increased through buying of smaller farms and through land holding and the farm was oriented to crop production.

The total currently cultivated area of the family farm is 86 ha, of which 68 ha is rented and 18 ha is in permanent ownership of the farm.

Kovanović family farm has been engaged in production of larger quantities of watermelons for the market for some 15 years, on smaller areas (up to 10 ha). Watermelon is a suitable crop, because most of the labour intensive works related to watermelon production are done at times when there is no other significant crop farming work to be done. After several years of experimenting with different watermelon production methods (in the field, under mulch with raining irrigation, transplants, etc.), the conclusion was reached that planting very early sorts of watermelon on a smaller area is the most feasible way of production. This refers to watermelons grown from transplants, under mulch and with drip irrigation on the area of 3 ha.

Climate conditions during vegetation

Analysis of climate conditions during watermelon vegetation period (April – mid-August) is given in the Table 2. The Table indicates high

daily temperature, which resulted in increased transpiration and consumption of water which then had to be supplied to the plant through irrigation system.
Precipitation during this period was lower than the average annual precipitation, which could have lead to a serious decrease in yield. The whole area was covered with irrigation system, and the only disadvantage of lack of precipitation was an increased quantity of fuel needed for the pump, and as such it presented only a temporary material loss. The lack of precipitation at the same time reduced the quantity of present weeds and thus reduced the need for investment in herbicides and labour force that would be needed for hand hoeing.

Table 2: Maximum, average and minimum daily temperatures during vegetation

Temperature:	Maximum	Average	Minimum
Maximum temperature	40 °C	26 °C	13 °C
Average temperature	30 °C	19 °C	9 °C
Minimum temperature	20 °C	12 °C	1 °C

It can be observed from the Table 2 that temperature movement in this period was in accordance with temperatures needed for watermelon development, with no extreme conditions that might harm the development of the plant or the fruit.

Watermelon fertilization on Kovanović family farm

The type and the amount of fertilizers that were deposited and ploughed in the soil during autumn fertilization are given in the Table 3. The Table 4 gives account of the type and amount of fertilizers added into soil during spring soil cultivation as nutrition reinforcement.

Table 3: Autumn fertilization

FERTILIZER TYPE	APPLIED IN TOTAL (kg)	TOTAL AREA (ha)	AMOUNT (kg/ha)
MANURE	100000	3	33000
NPK 7:20:30	1200	3	400
NPK 0:28:20	400	2	200
UREA	450	3	150

Table 4: Pre-emergent soil fertilization and nutrition reinforcement

FERTILIZER TYPE	TOTAL DISTRIBUTION	AMOUNT / ha	DISTRIBUTION METHOD	DISTRIBUTION PERIOD
NPK 15:15:15	1500 kg	500 kg	SPREADING	PRE-EMERGENT
PROFERT MARA	6 l	2 l	FOLIAR	VEGETATION
MEGAGREEN	6 kg	2 kg	FOLIAR	VEGETATION
KRISTALON GREEN	120 kg	2 x 20 kg	FOLIAR	VEGETATION
KRISTALON RED	120 kg	2 x 20 kg	FOLIAR	VEGETATION

In addition to foliar nutrition, Profert Mara and Megagreen were also used for fertilization and stimulation of growth of transplants in a greenhouse. According to producer's instructions, several treatments would be necessary for optimum utilization of these chemicals, but they were used only once due to good soil preparation.
Kristalon is a water-soluble fertilizer developed to reinforce nutrition of all plants with exactly what they need and when they need it. Kristalon can be applied on all crops outdoor or under protection, on vegetables, fruits, flowers and decorative plants, with drip irrigation, sprinkling, spraying, or other irrigation systems. All Kristalon fertilizers are labelled by colours in order to provide easier differentiation.

Watermelon seeding on Kovanović family farm

The seed for sowing was purchased from the seed distributor „Pro – Agro" d.o.o. za trgovinu i usluge *(trade and services)* – in Županja. Hybrid seed is usually sold by "piece" in packages from 100-1.500 seeds, mostly in vacuum bags, but often also in cans (Harris-Moran hybrids).
Based on the results from previous years, the decision was to grow four different hybrids in order to provide different ripening periods and more stable yields.
Farao F1 - a medium-early hybrid with the vegetation period about 70 days from the day of transplanting. Plants are extremely exuberant. Fruits are oblong in shape, weighing about 12 kg. The rind is striped in marble fashion, the flesh is light red. This hybrid is intended for growing in open field and in low tunnels.

Celebration F1 - a medium-early hybrid with vegetation period about 80 days from the day of transplanting. Plants are extremely exuberant, and fruit setting is very good. Fruits are oblong in shape, weighing 12-15 kg. The rind is thin and striped in marble fashion, the flesh is dark red. The fruit quality is extremely good, even after the optimum harvest period. This hybrid is intended for growing in open field on mulch. This hybrid also travels well.
Fantasy F1 – early hybrid of medium exuberance, with oblong fruits weighing about 10 kg. The rind is medium thin, with marbled striped surface. The flesh is dark red, very sweet in taste and has some brown seeds. This hybrid is intended for growing in protected areas, low tunnels and in open fields.

Transplant production and planting methods on Kovanović family farm

Production of watermelons from transplants is a usual practice. Although in previous years transplants were also grown by grafting watermelon on a pumpkin, the only way of producing watermelon in this case is from traditional transplants.
Watermelons were sown in containers on March 26 and 27, and three different types of containers were used. Containers were previously filled with substrate (flower soil). After sowing containers were transferred to a greenhouse and watered.
Nutrition reinforcement was applied two times. The first time, some 10 days following the germination, Megagreen was used, which proved as an efficient fertilizer in previous years, especially as a „starter“. The second time mixture Profert Mara + Megagreen was applied a few days before transplanting in order to reduce a shock for the plant and to provide nutrient reserves after transplanting.
Temperature was regulated during the day by opening the door and side opening on the greenhouse, and during the night, if necessary, the greenhouse was heated by gas thermo generator.
After additional soil cultivation by tilling and additional soil levelling by a combination seed harrow, mulch and irrigation pipes were laid.
Watermelons were manually transplanted in two days, April 23 and 24, to previously prepared soil, with mulch and irrigation pipes in place.
In the process of manual transplanting mulch is opened to the extent necessary to successfully plant the transplant in soil. After transplanting, the opening is covered with soil and mulch is repaired, if damaged in the process.Watermelons were planted on 100 cm in-row spacing and 200 cm between-row spacing. Such spacing requires about 70 kg of mulch and

5.000 m of irrigation pipes per hectare. Mulch was produced by Croatian company „MetaloPlast"-Batrina, while drip irrigation pipes were produced by American producer „TORO". Spacing between the holes on pipes was 30 cm, with maximum water flow capacity per hour being 8 l/m^2.

Nurturing and protection of crops was included in all phases of watermelon production. They were conducted according to the envisaged technology of watermelon production, both in transplant production and in field production.

One of the methods of taking care about crops is irrigation. The whole area was irrigated with drip irrigation, which was also used to reinforce nutrition of watermelons.

Irrigation water is usually supplied from a nearby channel or well, and if both possibilities are inaccessible, then water tanks are used. This farm has one tank of 8 m^3 capacity, which, with whole-day irrigation, provides sufficient quantities of water for plants to survive during dry periods, but not sufficient for optimum irrigation. This year water from a nearby channel was used throughout the vegetation period, so that plants had sufficient quantities of water for optimum development.

Table 5: Type, method and quantity of applied chemicals

WEEDS		
FINE LEAVED	RAZZA FOCUS ULTRA	Incorporated in soil 2 l/ha After germination 1 l/ha
BROAD LEAVED	RAZZA	Incorporated in soil 2 l/ha
DISEASES		
POWDERY MILDEW	ANVIL 5-SC	50 ml in 100 l of water
	RUBIGAN EC	0,3 l/ha
DOWNY MILDEW	ANTRACOL WP-70	3kg/ha
	ALIETTE WP	3 kg/ha
	2X RIDOMIL MZ 72	25g in 10 l of water
ANTHRACNOSE	DITHANE M-45	40 ml in 100 l of water
PESTS		
APHIDS	3X DURSBAN E-48	15 ml in 10 l of water
WIREWORMS	DURSBAN G-7,5	20 kg/ha

Due to regular treatment of weeds and pests, there were no larger losses caused by increased weediness or fruit damages caused by pests. In addition to aphids and wireworms, watermelons are usually treated against nematodes and moths, but this year there was no need for such a treatment.

ORGANIZATION AND ECONOMICS OF PRODUCTION

Organization, soil cultivation, fertilization and protection

A projection of standards for utilized machinery was calculated according to the Tables 6 and 7.

Table 6. Soil cultivation machinery standards

Plot length (m)	PLOUGH Distance to the plot (m)			DISK HARROW First time Distance to the plot (m)			DISK HARROW Second time Distance to the plot (m)			COMBINED SEED HARROW Distance to the plot (m)		
	1.000	2.000	3.000	1.000	2.000	3.000	1.000	2.000	3.000	1.000	2.000	3.000
200	1,8	1,8	1,7	5,6	5,4	5,2	7,0	6,7	6,5	8,0	7,7	7,5
300	2,0	1,9	1,8	6,1	5,9	5,7	7,6	7,4	7,1	9,0	8,9	8,3
400	2,1	2,0	1,9	6,4	6,1	5,8	8,0	7,6	7,2	10,4	9,5	8,9

Standards from the Table 6 were calculated based on the following: 15 minutes of machinery maintenance, 12 km/h of average speed from the farm to the plot; 8,5 km/h of average speed during work, and 5 km/h during ploughing.

Table 7: Fertilizer and treatment machinery standards

Plot length (m)	SPREADER Distance to the plot (m)			SPRINKLER Distance to the plot (m)		
	1.000	2.000	3.000	1.000	2.000	3.000
200	9,7	9,3	9,0	4,3	4,2	4,1
300	10,5	10,2	9,8	4,6	4,4	4,3

400	11,0	10,5	9,9	4,9	4,7	4,5

Standards from the Table 7 were calculated based on the following: 15 minutes of spreader maintenance and 30 minutes of sprinkler maintenance; 12 km/h of average speed from the farm to the plot, and 8 km/h of average speed during work.

Organization of watermelon sowing and harvest

Planting of transplants requires two workers working the whole day. Transplanting requires 10 people per hectare on a daily basis. Watermelon harvest is a process requiring experienced workers with years-long experience in order to provide the harvesting of ripe and quality fruits. In addition to finding skilful workers, the problem is also in finding a sufficient number of trailers. One harvest requires over 10 trailers, which are hard to find, and the same applies to labour force. The number of workers during harvest depends on several factors (quantity of watermelons that will be harvested, their size, weather conditions, skills of workers, etc).

Economics of watermelon production

The total production costs, production value and potential loss or gain can be calculated by using the data about costs of inputs, fuel, fertilizers, plant protection, labour force and machinery use, and the data on achieved yields. Exactly such account of costs and realized profit is given in the Table 8.

Economic indicators of production efficiency

Labour productivity represents the ratio of utilized hours per area unit.

$$P = \frac{\text{Q (yield) kg/ha}}{\text{T (h/ha)}} = \frac{\text{40.000 kg/ha}}{\text{372 hours/ha}} = \text{120,5 kg/hour}$$

Production efficiency is calculated based on calculation elements.

$$E = \frac{\text{Production value (kn/ha)}}{} = \frac{\text{4.563,65 EUR}}{} = 1{,}31$$

Total costs (kn/ha) 3.475,38 EUR

Efficiency exceeding 1,0 represents profit.

Production profitability is expressed in a profitability rate in percentage, and it is calculated as the ratio between realized income and total costs. It shows income in kunas on 100 invested kunas during the production process.

$$R = \frac{\text{Income (kn/ha)} \times 100}{\text{Total costs (kn/ha)}} = \frac{1.088 \text{ EUR/ha} \times 100}{3.475{,}38 \text{ EUR/ha}} = 31{,}3\ \%$$

Table 8: Costs and results of watermelon production on the total area (EUR/ha)

Share (%)	**Item**	**Meas. unit**	**Amount**	**Price (EUR)**	**Amount (EUR)**
6,23	Seed	piecekg	5,7	37,99	216,54
3,73	Mulch		70	1,85	129,5052102,60
2,95	Irrigation pipes	t			412,04
11,86	Mineral fertilizers	t	1,2	343,37	68,27
1,96	Manure	kg	33,3	4,10	129,60
3,73	Kristalon	l	80	1,62	14,14
0,41	Profert Mara	kg	2	7,07	40,76
1,17	Megagreen		2	20,38	622,71
17,92	Plant protection	ha	51	12,12	82,08
2,36	Land holding	ha	1	82,08	54,72
1,57	Insurance	ha	1	54,72	13,68
0,39	Water fee	ha	1	13,68	54,72
1,57	Interests	hour	1	54,72	707,79
20,37	Tractor utilization	hour	44.3	15,98	693,88
19,97	Labour	l	332	2,09	73,03
2,10	Pump fuel		67	1,09	59,32
1,71	Other costs				
100	**TOTAL COSTS**		**ha**	**1**	**3.475,38**
PRODUCTION VALUE					
FIRST HARVEST		t	6,7	164,16	1.099,87
MAIN HARVEST		t	26,7	109,44	2.922,05
LATE HARVEST		t	6,6	82,08	541,73
TOTAL		t	40,0	114,09	**4.563,65**
FINANCIAL RESULT			**ha**	**1**	**1.088,27**

Conclusion

The importance of watermelon production is reflected in employment of seasonal workers, because watermelons are harvested on several occasions. However, the most important thing in watermelon production is that producer earns higher income per area unit, not only in relation to some crops, but also in relation to many vegetables.

Growing on bare soil requires smaller investments in production, but plants are more susceptible to diseases. Excessive growing of weeds can also cause problems. Also, fruits ripen much later, and yield and income are smaller than when other production methods are used. Production on mulch reduces problems with weeds, also moisture is preserved under mulch and intensive irrigation is not needed.

Growing watermelons from transplants is the most intensive production method, resulting in the highest yields. In combination with transplanting on mulch and drip irrigation, it results in a very early and stable yield. Such growing method reduces problems with weeds and plant diseases, fruits are usually cleaner and harvest is made more easily. This production method requires large investments, but the outcome is usually better.

In this case transplants were planted on mulch with drip irrigation. The subject of research of this paper is organization of watermelon production on the area of three hectares. Based on calculated standards and developed technological map, the consumption of 44,3 hours of machine work and 332 hours of human labour per hectare were determined. The total costs amount to €3.475,38, and, with 120 tons of yield and production value of €4.563.65, the realized profit was €1.088,27.

Based on coefficient of economy of 1,31, the conclusion was made that watermelon production is efficient, and every €100 invested in production resulted in €31,3 of profit.

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BUCHAREST STOCK EXCHANGE – THE EFFECTS OF THE CURRENT FINANCIAL CRISIS

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Abstract

The current financial crisis had an important impact on economies all over the world. Romania – one of the Eastern European countries, considered just one year ago to have a good growth potential – is also absorbing the shock waves of this crisis. As expected, the first to respond to those shocks was the Bucharest Stock Exchange. The paper will present Bucharest Stock Exchange evolution before the crisis started to manifest and will try to identify the main factors which influenced its explosive growth; the paper will continue with the investigation of the current financial crisis influences on Bucharest Stock Exchange – with an emphasis over the factors which might have deepen the descendent trend for the Romanian stock exchange market. The final part will present the effects of the current financial crisis on the future development of Bucharest Stock Exchange, taking into consideration the position of the Romanian capital market in Eastern Europe.

JEL classification: G22, G31

Key words: capital market, capitalization, evolution, Romania,

Introduction

The current financial crisis influences all the economic sectors. Capital markets are the most affected since they have a peculiar position in any economy – their main role being that of providing instruments for a better/ more efficient allocation of available (financial) resources. But where to invest during periods of distress? As follow, all over the world investors – either institutional or private – redrew their resources invested through capital markets and reoriented their portfolios toward what is considered safe: insured bank deposits, Treasury bonds, gold, and other (traded) commodities.

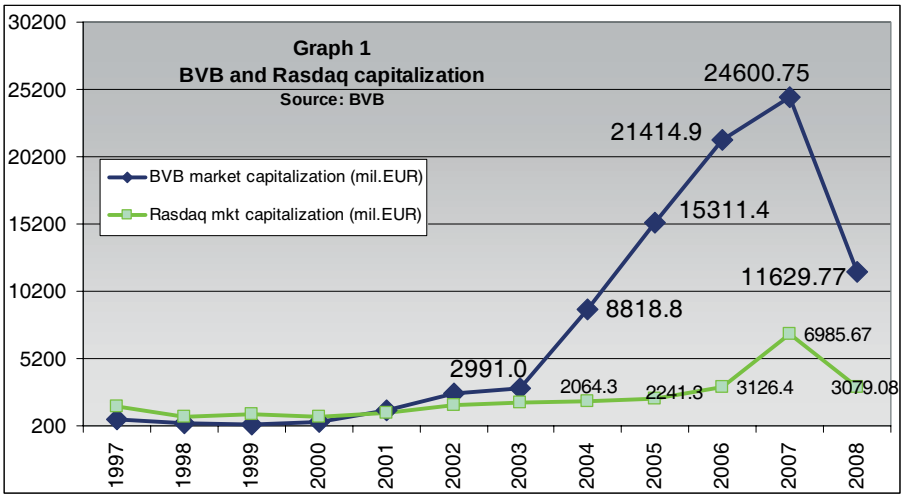
Small capital markets, like Romania's, were immediately affected by the change in investors' mood. The following pages will present the short and volatile success of Bucharest Stock Exchange (BVB) and its perspective for the future.

BVB evolution

The Bucharest Stock Exchange opened for transactions in November 1995. Only companies which fulfilled the imposed conditions were listed. The maximum number of listed companies at Bucharest Stock Exchange was 132, reached between 1998 and 1999. With higher liquidity and transparency, the Bucharest Stock Exchange (BVB) [1] became the main capital market in Romania.

The Rasdaq market was established in November 1996 as an OTC market, following the NASDAQ's model. The Rasdaq market was necessary to intermediate the transactions of privatized companies' shares which did not fulfill the conditions to be listed on the Bucharest Stock Exchange. During 1998, the highest number of listed companies was reached: over 5000. Due to Rasdaq's relatively poor results combined with several scandals involving theft of shares and price manipulation, the Rasdaq was transformed, with the hope of a change in image, in the Electronic Exchange Rasdaq in 2003. The situation slightly improved. The decision of a merger with the main Romanian capital market, Bucharest Stock Exchange (BVB), was taken during 2004. The merger took place in December 2005 and since then Rasdaq market became part of the Bucharest Stock Exchange. The reports for this market segment remained separate from the main market (BVB), but as graph 1 shows, its capitalization is very low and it is expected that companies traded on Rasdaq will be either transferred on the main market, while the remaining ones will be traded on an alternative trading system.

The capitalization of both markets and its importance in Romanian GDP are presented in table 1.



[1] To avoid any confusion with the Budapest Stock Exchange, the abbreviation for Bucharest Stock Exchange used in this study is be BVB, the initials of its Romanian name.

Table 1 BVB and Rasdaq capitalization in GDP (%)

1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008 (9 m)
7.60	3.47	4.16	3.28	5.68	9.07	9.39	17.83	22.01	25.10	25.54	30.02

Source: Based on BVB and NIS data

As it can be observed in graph 1, Romania's market capitalization increased with a rapid pace between 2003 and the mid of 2007.

The evolution is confirmed also by the 3 main indexes reported for BVB:

- BET - including in its portfolio the 10 best traded companies (considered a blue chip stock),
- BET-C(omposite) - including all the companies traded at BVB except the 5 companies for financial investments known as SIFs,
- BET-Fi(nancial) – a sector index including only the 5 SIFs.

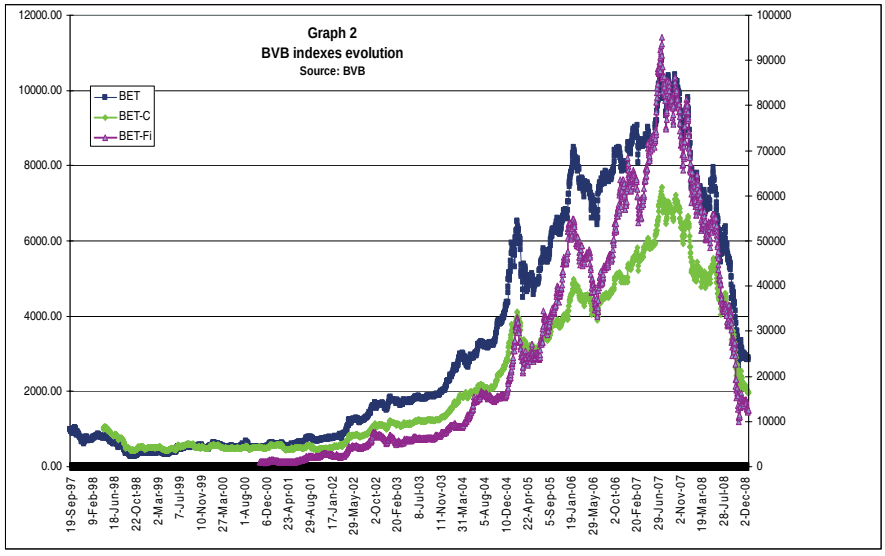
As graph 2 shows, all the 3 indexes are strongly positively correlated. The correlations between the absolute daily values at close are:

- ✓ for BET and BET-C = 0.9936
- ✓ for BET and BET-Fi = 0.9733
- ✓ for BET-C and BET-Fi = 0.9821

The correlations remain important and positive when the daily return series were analyzed, as follow:

- ✓ for BET and BET-C = 0.8864
- ✓ for BET and BET-Fi = 0.6155
- ✓ for BET-C and BET-Fi = 0.6204

It is not the subject of the present paper to analyze further the relations that exists between these 3 market indexes, but it is clear that they follow the same trend and the downward trend was the steepest for BET-Fi



The interest for BVB became obvious during 2002, when it was announced that Romania became a NATO member. Since the announcement was made, the foreign capital confidence in Romania's stability increased, combined with the gradual improvement of Romania's sovereign rate from B to BBB. The second wave of interest for BVB was registered in 2004, when the announcement of the country's accession to European Union indicated that, at latest in 2008, Romanian will be accepted as EU member. Meanwhile, Romania and Bulgaria became member of EU starting with January 1st 2007.
The pick of the positive evolution was reached at the mid of 2007 – when the announcement regarding the problems spreading through the American residential market were made known world wide through media channels.
One of the reason why BVB was considered 'a rising star' in 2002 were the improvements registered in the economic growth which triggered the investors' interest, as the next table shows.

Table 2 GDP growth rate (%)

1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008 (9 m)
-6.1	-4.8	-1.2	2.1	5.7	5.1	5.2	8.5	4.2	7.9	6.2	8.8

Source: RNB (Romanian National Bank)

The efforts made under European Union supervision, for accession process, became visible in 2004 and 2005. During that period (2004-2005) the population consumes started to be strongly supported by credit and mortgage loans became affordable – due to the availability of financial resources, combined with a raise in wage level at country wide. This situation formed the basis for the growth in 2006-2008; the growth was also generated by the government spending was also high, mainly during the last part of 2007 and entire 2008 – an election year (Radulescu, E., 2009[2]). With a growth considered unsustainable at economic level, BVB could not keep the interest of investors during time of distress, like the current financial and economic crisis.

The estimation of Romanian Commission for Prognosis consider that for the entire 2008, Romania's GDP growth rate will be 7.9% and it estimates a growth rate for 2009 of 2.5%, while Romanian National Bank estimates a GDP growth rate for 2009 of 2.2-2.3%, without eliminating the possibility of a recession period.

In 2001 and 2002 not only the Romanian economic outlook attracted foreign investors, but also the obvious undervaluation of Romanian traded shares, as the following table shows. Foreign investment funds – open-end, closed-end, hedge and private equity – entered Romanian market triggering a buy signal for domestic investors (mainly individuals) also. When the foreign investment funds started to exit the market – during the second half of 2007 and entire

[2] Cited by Business Magazin, February 11-17, 2009, pg.11-17. Mr. Eugen Radulescu is consilier of Romanian National Governor.

2008, most domestic investors followed their behavior and the market ratios are comparable with those registered in 2001, but with a pessimistic perspective regarding 2009.

Table 3 BVB's PER and Price/Book value* ratio

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
PER	10.7	8.22	8.82	3.98	4.92	9.12	13.10	35.18	24.05	18.03	19.21	4.11
P/B	n/a	0.38	0.62	0.41	0.45	0.84	1.01	2.29	3.28	2.72	3.03	0.76

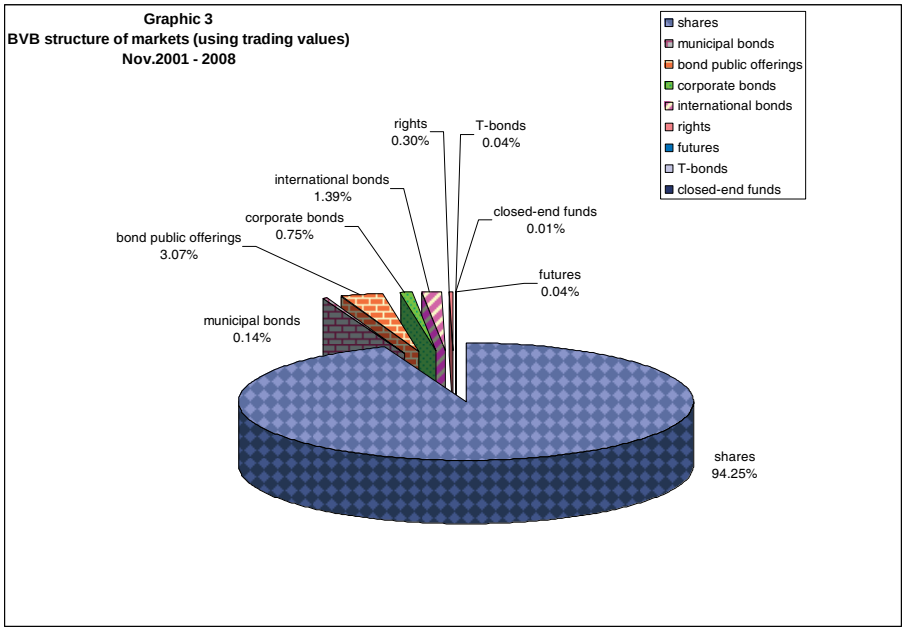
*Considered the book value
Source: BVB data

Between November 1995 and November 2001, the only securities traded at BVB were the domestic shares. Since 2001, BVB made constant efforts to improve and diversify the offer for its investors. Those efforts made for BVB offer diversification, generated the following:

- municipal bonds begin trading November 26, 2001;
- corporate bonds are traded since May 20, 2003;
- rights start trading January 17, 2005;
- the first international bonds, issued by the International Bank for Reconstruction and Development, start trading September 13, 2006, followed by a second issue – made by European Investment Bank – traded since June 8, 2007;
- futures contracts on BET and BET-Fi index start trading September 14, 2007;
- futures contracts on 10 BVB stocks, of which the 5 SIFs, (single stock futures as BVB call them) and currency futures contracts (on EUR and USD) start trading April 14, 2008
- the first international company, Erste Bank – Austria, starts trading February 14, 2008
- Romanian T-bonds start trading August 4, 2008
- the first Romanian closed-end fund to be traded at BVB – since September 22, 2008.

As the graph below shows, despite the diversified offer, Romanian companies' shares remained the main type of security traded, due to their higher liquidity compared with bonds, rights and future contracts. For the products offered for trading during 2008, no clear conclusion can be drawn due to the particular

situation generated by the financial crisis and its acute phase reached during the Autumn of 2008.



While the bond trading increased gradually since 2001, only during the last quarter of 2008 international bonds manage to represent about 8% of total traded value at BVB and this situation was generated by the investors who looked for a safer investment alternative. Romanian T-bonds were to new and their market lacked liquidity, as follow those securities did not manage to attract investors' interest.

Since the equity market is dominant, a brief analysis of it is appropriate. The structure of BVB equity market, by trading categories, is presented in graph 4. The 3rd category/ tier was introduced since November 19, 2007; currently only one company is listed inside this category, but it is expected that a number of companies transferred from Rasdaq market section to be listed here.
The international category/ tier became active since February 14, 2008 – when the Erste Bank starts trading at BVB**.**
The shares listed inside the 1st category are dominating the trading by concentrating 80% of turnover. Currently there are 21 companies listed at 1st category, including the 5 SIFs, 3 Romanian banks, one brokerage company, 2 utility companies – which start trading during the last 2 years, 2 pharmaceutical companies, and 2 companies from the chemical sector.
IPOs have a low presence in BVB's turnover. Between 2004 and 2007 only one or two IPOs were registered every year, while in 2008 a number of 4 IPOs took

place. As expected, due to the market declining trend, those IPOs did not generate the expected interests among investors.

Graph 4

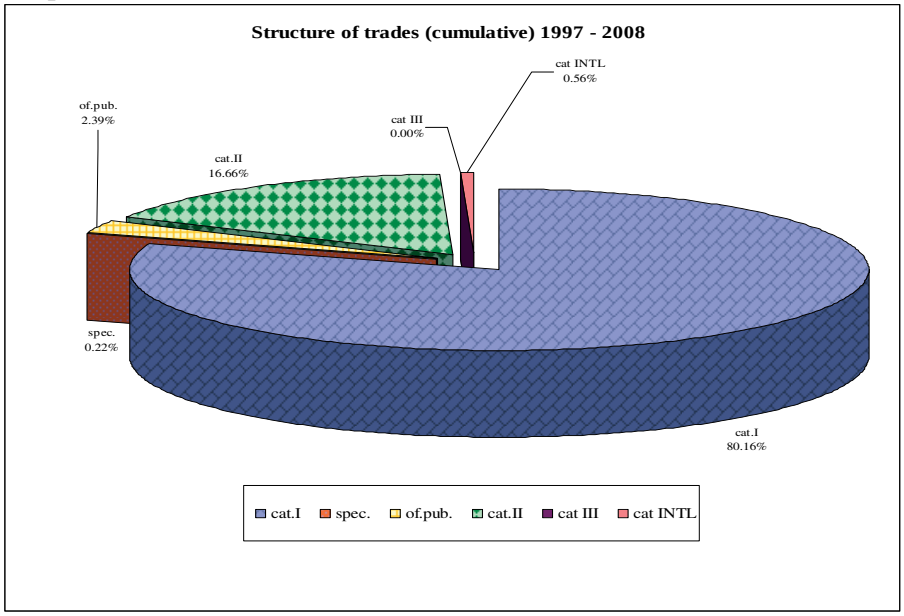


Table 4 Average daily values at BVB

	1997	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**
trades	2949	2283	1611	1968	1416	2680	1776	2494	4664	5789	6112	5317
volume (mil. shares)	2.87	4.30	4.08	7.10	8.95	16.14	15.39	51.20	68.18	54.93	55.33	50.03
turnover (mil. ECU/ EUR)	1.16	0.85	0.34	0.37	0.59	0.91	1.05	2.34	8.62	11.27	16.47	7.54

Source: based on BVB and RNB data

As the table above (4) shows, the average number of trades/ day became significant only since 2005, while the average volume/ day increased during

2004. Despite these, the average daily turnover overpass 10 million EUR only in 2006 and 2007 when the Romanian share prices reached record levels. The financial crisis did not affect, in an important manner, the average number of trades/ day or the average volume/ day, but the steep decline in prices generate an average daily turnover below the level of 2005.

Table 5 BVB equity market performances

	1998	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**
inflation rate (%)	59.1	45.8	45.7	34.5	22.5	15.3	11.9	9.00	6.56	4.84	7.85
market dividend yield (%)	10.66	7.84	7.48	6.70	4.97	2.00	1.45	0.94	1.72	2.18	9.12
BET annual return (%)	-49.4	15.21	18.25	35.71	117.52	27.13	93.15	42.47	18.09	16.29	-69.68
BET-C annual return (%)		-4.99	7.39	-6.47	124.02	22.62	98.29	31.63	25.07	26.27	-69.68
BET-FI annual return (%)				109.92	113.14	24.72	106.94	151.32	24.66	14.95	-83.62
average interest rate for bank deposits (%)	38.3	45.4	32.44	26.16	18.39	10.78	11.34	8.34	6.51	6.70	9.18

Source: BVB data and RNB data

Table 5 presents the BVB's performances as they are reflected through the 3 indexes[3] mentioned above, compared with the inflation rate and the average interest for bank deposits. Starting with 2001, BET and BET-Fi showed positive performances, above the inflation rate or the average interest for bank deposits. BET-C started to show the same positive level since 2002. The 2002

[3] Since March 2005 ROTX index is reported; this index is calculated by Vienna Stock Exchange and it is used as an underlying asset for a future contract; the data in RON for ROTX are not available before 2004. During 2008, BVB launched 2 new indexes: BET-XT which portfolio includes 25 blue chips, among them the 5 SIFs, and BET-NG – and index with a variable number of companies in its portfolio, concentrating those companies in the energy sector or those directly connected with that sector.

BVB annual report showed (pg.3): 'The BSE achievements of 2002 were noticed by the international financial community and highlighted in the Standard & Poor's Fund Research analysis, which indicated the BSE as the world best performing stock market of the year, in sterling terms, with a rise by 93.6 percent'. Exceptional results were also achieved during 2004, the year of accession to European Union of Romania's neighboring countries. 2004 performances might have been induced through a contagion effect, while no relevant studies were made on that subject regarding Romanian capital market. As expected, for 2005 and 2006 the performances of BET and BET-C were lower than those of 2004; the exception was represented by SIFs – included in BET-Fi – which for the second year in the row reported a price increase of over 100%. Romania's accession year to European Union was 2007, but it not yielded the expected results – while the maximum values[4] of those 3 indexes were reached at the end of July 24, 2007 – due to the steep decline of the market which started in August 2007. The worries expressed during the second half 2007 regarding the problems that might arise in the American market due to the announced problems in the subprime sector, started to combine with opinions regarding the lack of sustainability of Romanian economic growth. The year 2008 began in a pessimistic mood and it was enhanced by the acute symptoms of the world financial crisis. By August 2008, BVB was the 3rd in the world (after Bosnia and Vietnam) – loosing more than 50% of its indexes value from the beginning of the year (Chirileasa, 2008a). Some sources indicate a correlation coefficient between BET and DJIA of 0.87 – for the last 3 years (Crihana & Ciobanu, 2008)

As it can be observed also from table 5, the market dividend yield was also low or very low starting with 2001. This situation indicated the lack of importance given by most of Romanian companies to dividend policy. The market dividend yield of over for 2008 is due to the steep decline in Romanian share prices.

Comparative evolutions

When compared with Budapest Stock Exchange, Warsaw Stock Exchange and Prague Stock Exchange, BVB has the lowest capitalization level.

Despite the impressive growth rate in BVB capitalization registered during 2001, 2002 and 2004 – which only showed the huge gap between Bucharest and the other main capital markets in the region – the level of BVB capitalization remained low, mainly due to the relative lack of diversity in the portfolio of listed companies and, also, to the relative lack of transparency at company's level (which improved over the years, but not enough to attract more investors). Another often mentioned reason is the lack of market liquidity, the free float of most companies being low, while no figures are mentioned (Zavoianu, 2007 and Chirileasa, 2008b). The volatile environment of Romanian economy was also reflected by the highest decrease pace registered by BVB capitalization compared with the other 3 markets from the region.

[4] Those maximal values were (indexes expressed in RON): 10813.59 for BET, 7432.63 for BET-C and 95111.01 for BET-Fi.

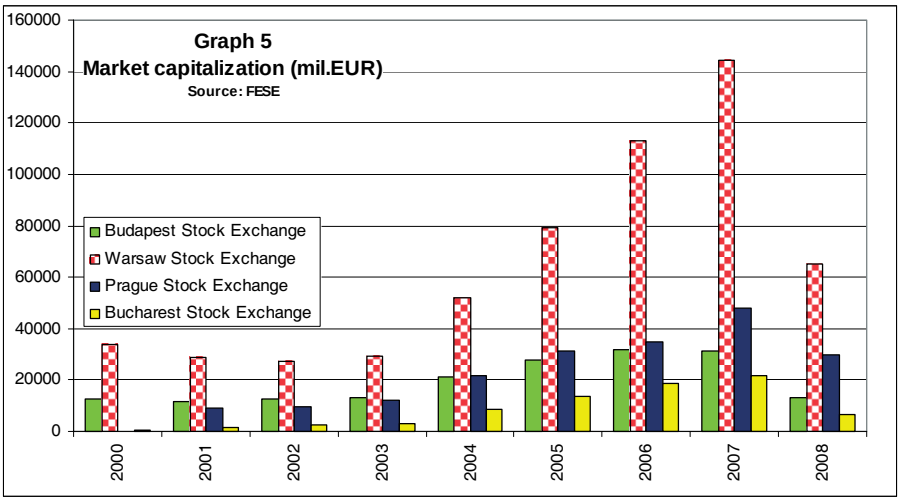


Table 6 The growth rate of market capitalization (%)

	2001	2002	2003	2004	2005	2006	2007	2008
Budapest Stock Exchange	-9.72	8.03	58.80	59.05	31.12	14.86	-0.58	-57.70
Warsaw Stock Exchange	-14.56	-6.21	8.48	76.79	52.93	42.18	27.81	-54.80
Prague Stock Exchange	n/a	8.86	25.43	76.76	42.99	11.70	38.35	-38.30
Bucharest Stock Exchange	202.12	94.44	13.02	194.84	53.48	39.32	14.06	-69.90

Source: FESE and BVB

Table 7 Performance of capital market indexes

	2001	2002	2003	2004	2005	2006	2007	2008
BUX for Budapest Stock Exchange	-9.16	9.36	20.28	57.17	40.99	19.53	5.51	-53.30
WIG Total Return for Warsaw Stock Exchange	-21.99	3.19	44.92	27.94	33.66	41.60	10.45	-51.10
PX-Glob for Prague Stock Exchange	n/a	17.02	41.63	50.89	46.94	9.72	14.22	-51.70
BET-C for Bucharest Stock	-4.84	126.95	26.04	103.50	38.22	28.49	32.64	-70.34

Exchange								

Source: FESE and BVB

Table 7 shows the comparative results between the 4 capital markets considered in this paper. BVB is the only one which yielded results of over 100% in 2002 and 2004, but also is the one with the lowest performance for the 2008 reflecting its higher volatility compared with its neighbors. This situation only reflects that BVB has to improve both its image and its offer in the future through better listed companies, new IPOs which can only improve the market liquidity and capitalization.

Conclusions

The supervision body of Romanian capital market – the Romanian National Securities Commission – made efforts to implement the MiFid Directive in Romania, and some media sources announced that in Romania the new regulations in concordance with EU directive were in place since the end of January 2007 (Barbureanu, 2007). While the new regulations were supposed to enhance investors' confidence in the capital markets – from transactions, to transparency, to an improved quality of intermediation – the effervescence of the first half of 2007, and the dominating bad news regarding the subprime market during the second half of the same year, made the implementation efforts of the MiFid Directive almost invisible and ignored. During the market turmoil that followed in 2008 and the pessimistic attitude of the investors during the last 6 months (since September until March), almost no investors thought about the existing new regulations because the capital market was under the effect of the current financial crisis.

The future will tell if MiFid Directive will be changed accordingly to the new evolutions triggered by the current financial and economic crisis and how those changes will be implemented and will affect Romania's capital market.

While BVB board tried to diversify the offer (as mentioned in pages above) and to improve transparency at the market level, but also at listed companies level, the number of important and interesting listed companies remain relatively low due either to the fact that some companies, mainly those with foreign majority shareholders, choose to be delisted, or to the fact that the promised made by successive governments to privatize and to list several big Romanian companies, were not kept. As graph 3 shows, the importance of Romanian bond market and futures market, is low and both segments need time to develop.

Also, when the equity segment is taken into consideration, the absence of short sellings, of stop orders on some market segments, and the almost inexistent level of buying on margin (launched during 2008 by several brokerage companies) did not make BVB more attractive for investors (Zavoianu, 2007 and Chirileasa, 2009).

2008 was the worst year in BVB's recent history – the steepness of the downward trend probably being enhanced by the downgrade of sovereign rating for Romania from BBB (investment grade) to BB (non investment grade) at the

beginning of November 2008. This action of lowering Romania's sovereign rating came from all the 3 main rating agencies (Standard & Poors', Fitch and Moody) in almost the same period of time. The economic outlook for Romania, as expected, was considered negative, and the combined information had a further negative impact on investors' attitude toward BVB.

The steep decline registered at BVB during 2008 was induced by the financial crisis that started to show its first acute signs during the first quarter of 2008 and generated the world market turmoil since September. As expected, foreign investment funds redrew most of their money invested in Romania (considered a small emerging market or a frontier market) and the domestic investors followed their behavior. The absence of important domestic institutional investors (Chirileasa, 2009) is seen as one of the secondary causes that contributed to the highest decline registered by a stock exchange in the region. The private pension funds began their activity only since 2008 and Romanian mutual fund industry is very small, combined with the fact that during 2008, most mutual fund investors redrew their money due to poor performances. The insurance companies that are present on the Romanian market almost ignore BVB as an alternative for investing some of their available funds. The number of Romanian individual investors is also small – some sources indicate between 90.000 and 100.000 persons that have open accounts with Romanian brokerage companies (Chirileasa 2009); those figures could not be checked while no official reports include the information. As expected, the Romanian individual investors are not trend setters, but trend followers and their behavior generated an increased pressure on the descending trend at BVB.

BVB's perspectives for 2009 are pessimistic. As the financial crisis evolved in an economic crisis, Romania's economic outlook looks poor. The foreign investors' attitude toward the Romanian capital market is excessively prudent and influenced by the fact that the country is not in the 'investment grade' category by the main rating agencies. Domestic investors attitude replicate that of foreign investors and despite the fact that stock market ratios indicate opportunities for (long term) investments, the macroeconomic predictions (mainly the RON depreciation against EUR and USD) are not encouraging on short to medium time horizon.
Also for 2009 a number of companies are expected to give up BVB listing and IPOs are almost absent during the current incertitude. If the number of listed companies will decrease, the future development of BVB will be difficult, despite the diversified current offer which includes bonds (domestic and international) and futures contracts.

As the other stock exchanges around the world, BVB became a PLC in 2006. Its shares are owned by number of around 100 shareholders and any takeover can become a difficult one due to the fact that a limit of 5% is imposed on voting rights of any shareholder. The only stock exchange that expressed an interest regarding BVB was Vienna Stock Exchange. During 2007 and 2008, both Prague Stock Exchange and Warsaw Stock Exchange announced that

important percentages of their shares will be sold and for both important stock exchanges like New York Stock Exchange, London Stock Exchange or Deutsche Boerse expressed their interest.
Without alliances with the neighboring stock exchanges, BVB will remain a small capital market which can easily disappear in the years to come due to the expected integration process of capital markets at European level. The process can create better trading platforms for companies and more efficient investment alternatives for various investors. If BVB can not keep the pace or join one alliance between the capital markets in the region, its future does not promises too much, taking into consideration the current difficult economic environment which is expected to last longer than predicted during 2008.

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THE FUTURE OF INVESTMENT DONE BY UNIT LINKED INSURANCE IN ROMANIA

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Abstract:

One of the most dynamic life insurance products in Romania is unit-linked insurance. The basis principles of this insurance are a combination between protection – insurance perspective, and capitalization - investment perspective. In the moment of buying such insurance, the potential client must choose an insured sum from a given interval, taking into account the individual appetite for protection or investment. During this paper, we will do an analysis of the evolution of this insurance for two major insurance companies in Romania, and a parallel research of the investment done by these insurance companies using the insurance life premiums. The accounts of the insured people are influenced by these investments, especially decreased by the worldwide financial crisis. In the end of the paper, we will present the conclusion and the proposal for both insurance companies and insured people.

JEL classification: G22

Keywords: *insurance, unit-linked, individual accounts, investment, financial crisis*

1. Introduction:

Unit linked insurance are life insurance policies with investment component. The insurance premiums are invested into one or more investment funds, managed by the insurance company. The investment is split into a share part named "unit". Each investment fond has its' own unit with individual prices. The insured persons choose the investments – the funds and the allocation between them. These funds are available only for the insured people of the insurance company. Each time the insured persons want, they must change the allocation of their investment.

In case of a traditional life insurance policy the investment risks are on insurance company - the insurance company will invest the money very carefully, especially in financial instruments with lower profitability – bonds, banking deposits. In case of unit- linked insurance policies the investment risks are on the insurance person's side, but the benefits of the investment depend on the investment funds' evolutions.

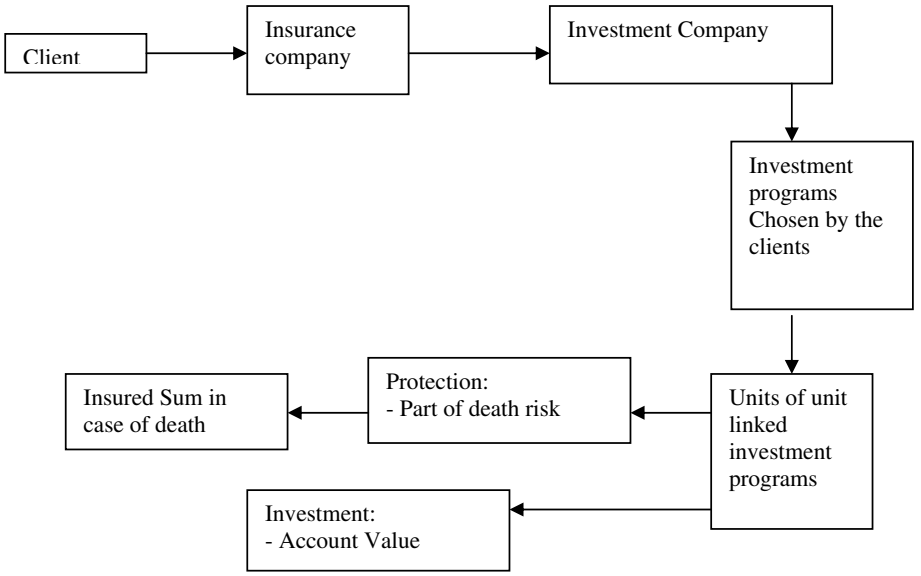
There can be separated the two components of the unit-linked insurance: *protection and investment.*

The protection part refers to the Insured Sum in case of death, and the investment one refers to the client's account. This account includes the present value of the units from the chosen investment funds.

2. Theoretical aspects:

Each investment program is divided in units, these units evaluate by the principle of equities and bonds on a regular stock exchange market.
The insurance premium has a simple circuit that is described in the next figure:

Fig.1. – Insurance premium circuit in case of unit linked life policies



The insurance companies allow the clients to pay extra insurance premiums of they want to modify the initial insurance contract. There can be two types of modification, for each part of the unit linked insurance:

- in case of protection, the clients may agree to introduce supplementary clauses for theirs' health (surgery intervention, accidents, fracture intervention and others). In that case the supplementary insurance premiums are paid and if there no risk occurred the money remain to the insurance companies
- in case of investment, the client may pay a supplementary premium that will entire be allocated to the investment programs. These amounts are directly included into insured people' individual account, and will follow the investment principles

If we analyze the unit linked insurance contracts, there are two situations when the insurance companies have financial obligations towards the insured persons.

In case of insured person' death the beneficiary persons will receive the maxim amount between the insured sum (mentioned in the policy) and the value of the individual account.
The other situation appears in the moment when the contract reaches the maturity and the person is alive. In this case the paid amount is the value of the individual account.
We can observe from these last phrases that the importance of the individual account is a huge one. But the value of the account depends on the investment programs of the insurance companies.
The insured people' thinking is very simple. They expect to receive more money than they paid during the contract period. The logic is a saving account from banking system. But they forget that in case of the insurance companies these are gathering the death risk, instead of banks that are not.

3. Research Methodology:

In these times when the financial crisis is an international problem, when all the international markets, investments funds, stock exchanges are down, the prices of the listed shares are very low, the life insurance companies are confronted with a delicate problem: the value of the accounts of the insured peoples. That is because the investments are done in financial quoted instruments.
The situation is very difficult especially for the persons that have theirs' contracts reached to maturity in this critical period. They find their account with less money than expected, less amounts than a year ago.
Beside this aspect, a lot of insured persons are afraid not to loose their value from the insurance policy account. They have a panic action, and they want to end the contract and to get back the account at this level (in expectation of a lower level).

In the next part of the paper we will analyze the existed situation in Romania for three big insurance companies (Allianz Tiriac, ING and AVIVA – former Commercial Union).
No matter the company is the programs enhance different types of financial instruments, diversified by the risk and profit. The insured persons choose the programs that suits well to theirs' attitude towards risk.

In case of Alianz Tiriac Life Insurance there are the following programs:

1. Conservator – the investments are done in Eur, especially in European bonds (75%) and shares of important companies (25%).
2. Clasic - the investments are done in Eur, especially in European bonds (50%) and shares of important companies (50%).
3. Progresiv - the investments are done in Eur, exclusive in shares of important European companies (100%).
4. Dinamic - the investments are done in Eur in European bonds (25%) and especially in shares of important companies (75%).
5. Euro-Plus - the investments are done in Eur, exclusive in bonds of important European governments (100%).

6. Dollar-Plus - the investments are done in USD, exclusive in bonds issued by US government (100%).

7. Leu-Extra – this program include 100 % savings and deposits in Romanian high solvency' banks (investment are done in national currency RON)

8. Leu-Plus –investment is done in RON and 100 % in treasury instrument with medium and long terms

Allianz Tiriac provide the availability of all data since the company enter in the life insurance market -2001.

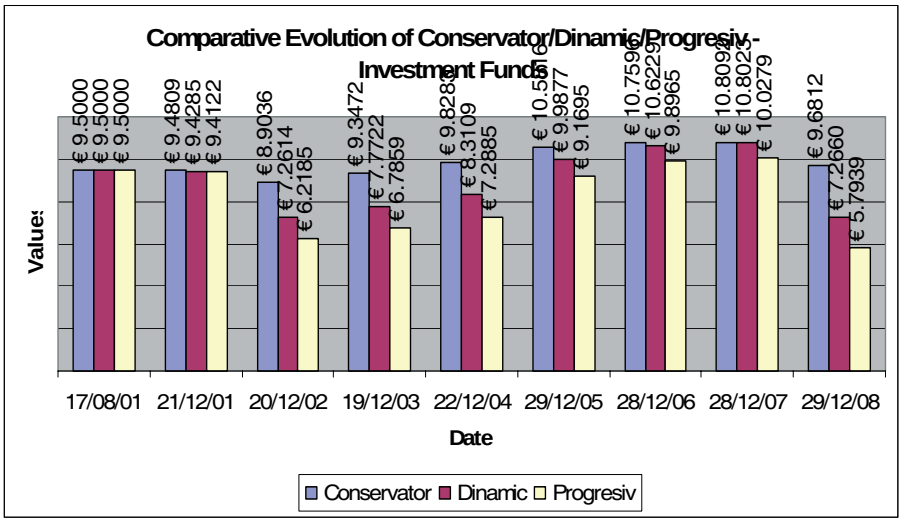
We observe that since 2001, 4 investment funds record a negative evolution, and the rest of 4 record a decent increase. The most risky funds (the ones within the investemnts are done especially in listed shares) with a huge risk apetite realized important decrease.The insured people that choose a lower risk program still may have more value in their account compared to the beginning.

Table 1. – Evolution of Allianz Tiriac investment funds 2001- 2008

Date m/y	**Clasic (€)**	**Conservator(€)**	**Dinamic (€)**	**Dolar-Plus(€)**	**Euro-Plus(€)**	**Progresiv (€)**	**Leu-Extra (RON)**	**Leu-Plus (RON)**
08/01	9.50	9.50	9.50	9.50	9.50	9.50	25.54	25.54
12/01	9.63	9.48	9.42	9.80	9.58	9.41	28.03	28.63
12/02	8.21	8.90	7.26	8.51	10.08	6.21	34.74	36.91
12/03	8.64	9.34	7.77	7.83	10.29	6.78	40.54	42.50
12/04	9.17	9.82	8.31	7.48	10.80	7.28	47.23	49.24
12/05	10.39	10.58	9.98	8.38	11.01	9.16	52.69	54.54
12/06	10.79	10.75	10.62	7.76	10.74	9.89	55.90	56.80
12/07	10.90	10.80	10.80	7.06	10.60	10.02	59.03	59.26
12/08	8.54	9.68	7.26	6.78	11.13	5.79	65.05	65.56

We observe that in the last year – 2008, only 3 funds recorded a increase: Euro Plus (Eur) of 5% and Leu-Extra/Plus of 10.6%. The rest of 5 funds recorded a decrease; the most important one is of 42.3% for Progresiv (Eur). In the next graphic we present the evolution of three funds, from the start to the end of 2008. The one that choose Conservator program has almost the same value, and the people that choose Dinamic and Progresive programs (the most risky of all) recorded substantial losses in the accounts.

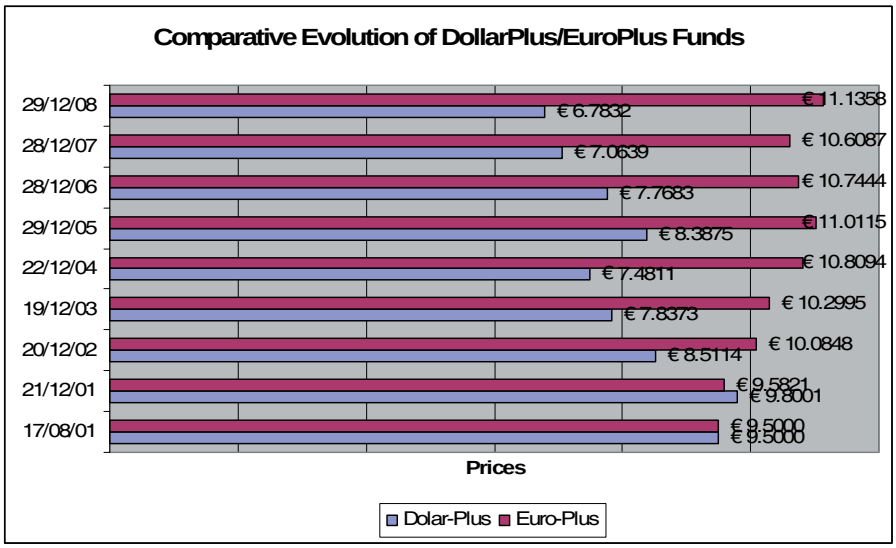
Fig.2. – Comparative Evolution of Conservator/Dinamic/Progresin Funds



Also, we notice the Progresive Fund, recorded the highest depreciation, from starting value of 9.50 Euro to 5.79 Euro.

The evolution of other two funds Dollar Plus and Euro plus are described in the next graphic:

Fig.3. – Comparative Evolution of Dollar Plus/Euro Plus Funds



We notice that even if Dollar Plus and Euro Plus seem to have a similar risk (the investment are done exclusive in bonds), the practice trend show us that Dollar Plus recorded a continuous depreciation, and opposite Euro Plus a constant increasing. This fact may be generated by the evolution of US economy – USD depreciation towards other international devices, the starting of the world crisis was in US.

AVIVA Life insurance company has the following investment funds:

1. Capital Garantat is an investment fund with100% safe portfolio, in state bonds and deposits on the prestigious Romanian banks.

2.Practic 25 (Plus) is a medium risk investment fund, with a structure made of 25% Bucharest Stock Exchange listed shares and 75% of local, govern and national companies bonds.

3. Practic 50 (Max) is a higher risk program where investment in BSE listed companies is up to 50% and the rest of 50% represents the bonds.

Beside the local funds (RON currency) there are other funds with international cuurencies - USD and EUR.

4. Suprem is a highly randament program, which include a portfolio of 70% in strong international companies and 30% bonds issued by different governments. The risk level of the program is a high one.

5. Actual is a medium risk investment fund with 100% investments in bonds issued by European corporations.

6. Median is also a medium risk program, the investments are done 70% in international governmental bonds and 30% in international corporations' bonds.

7. Conservator allows the investments into a group of governmental bonds, with a low level of risk.

8. Imobilis offers direct investments on the real estate markets in Central and Eastern Europe, the risk is a medium – high one.

Evolution of the investment programs in AVIVA case is described in the next figure – but we must mention that there were no available data from other years than 2007 and 2008.

Table.2. – Price Evolution 2008/2007 for AVIVA Investment Funds

Investment Fund	**Price (Dec. 2008)**	**Price evolution in the last year (2008/2007)**
Capital Garantat (RON)	3.54	9.64%
Practic 25 – RON	1.20	-16.19%
Practic 50 – RON	0.78	-36.01%
Suprem –USD	0.82	-33.23%
Median – USD	1.17	-17.13%
Conservator - USD	1.43	-4.78%
Actual – USD	1.49	-19.60%
Imobilis – USD	0.70	-43.48%

Suprem –EUR	0.27	-26.91%
Median – EUR	0.38	-9.93%
Conservator – EUR	0.41	3.28%
Actual – EUR	1.07	-12.83%
Imobilis – EUR	0.62	-38.74%

In case of Aviva only 2 funds recorded increasing in 2008, and the others decreased, the most important decrease was recorded in case of Imobilis funds with 43.48%.
One fund that increase is in RON (9.64%) and the other is in EUR (3.28%) these have a minim risk because of its instrument.
The depreciation in the other funds is normal, the stock exchanges recorded depreciation worldwide and also the real estate industry (Imobilis). Because of the prices' collapses in the real estate industry in Romania, Imobilis fund recorded that negative evolution.

Investment programs in case of ING Life Insurance are six; two of them use Romanian currency – RON, and the rest use USD for units' quotations. These funds have the following characteristics:

1. Bond – investment are exclusively in RON, 100% in monetary instruments from the Romanian financial market.
2. Mixt25 - investment are in RON, 75% in monetary instruments from the Romanian financial market and 25% in shares of important Romanian companies listed on Bucharest Stock Exchange.
3. White – investments are done in USD, 10% of them in monetary international instruments with 1 year maturity, 60% in medium time bonds issued by OECD or European countries, 30% in shares quoted on international stock exchanges
4. Blue - investments are done in USD, 20% of them in monetary international instruments with 1 year maturity, 70% in medium time bonds issued by OECD or European countries, 10% in shares quoted on international stock exchanges
5. Red – investments are done in USD, 30% in medium time bonds issued by OECD or European countries, 70% in shares quoted on international stock exchanges
6. Green - 100% in monetary instruments from the Romanian financial market, international markets – all of them in USD.

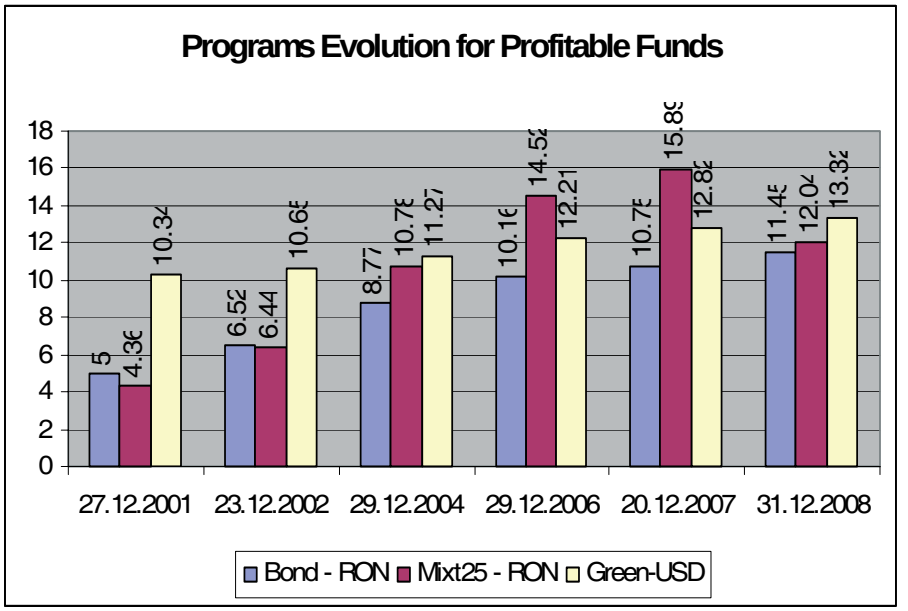
In the next table we gathered the prices of the units since 2001 (the funds were active since 1998 when ING launched unit linked insurance in Romania), in order to have a real comparing with Allianz.

Table 3. – Evolution of ING Romania Investment funds 2001- 2008

Investment Funds / Date	27.12.2001	23.12.2002	29.12.2004	29.12.2006	20.12.2007	31.12.2008
Bond - RON	5.00	6.52	8.77	10.16	10.75	11.45
Mixt25 - RON	4.36	6.44	10.78	14.52	15.89	12.04
Green-USD	10.34	10.65	11.27	12.21	12.82	13.32
Red-USD	7.89	6.97	9.52	11.09	11.61	7.48
White-USD	9.01	9.19	12.13	12.86	13.67	10.93
Blue-USD	9.37	10.17	13.12	13.27	14.24	13.43

From this table we notice that the two funds in RON recorded increases in the analyzed period and also Green fund in USD. The last fund' evolution is a logical one because been formed by guaranteed monetary instruments is a low risk fund.
The profitability is from 2001, even if in the last year 2008 one fund from the last three mentioned recorded a decrease.

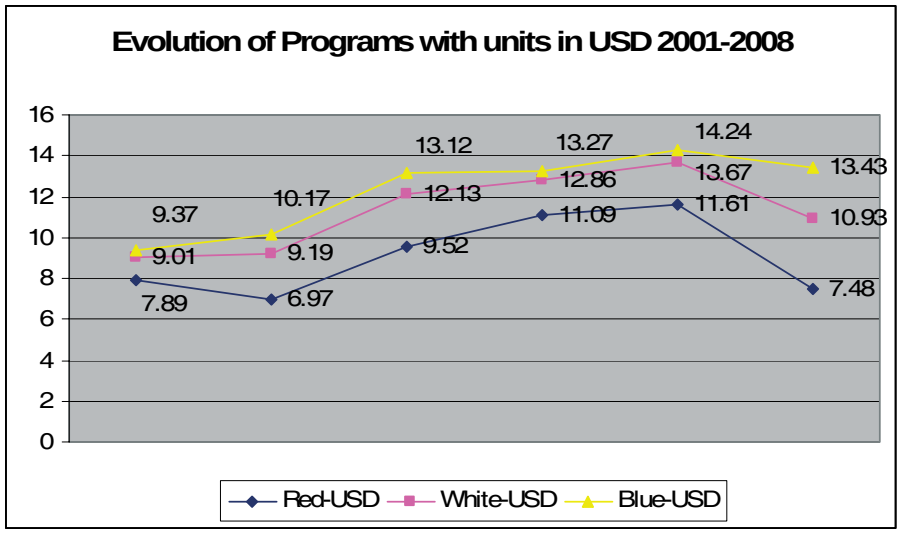
Fig.4. – Programs evolution for ING profitable funds



In case of these profitable funds the prudentially investment make the increase to be a low and a constant one.

The funds that invest the money in listed companies' shares, recorded a decrease especially in the last year. Of course the clients that choose to invest in these medium and high risky programs have less money in theirs' accounts.

Fig.5. – Programs evolution for ING funds with units in USD

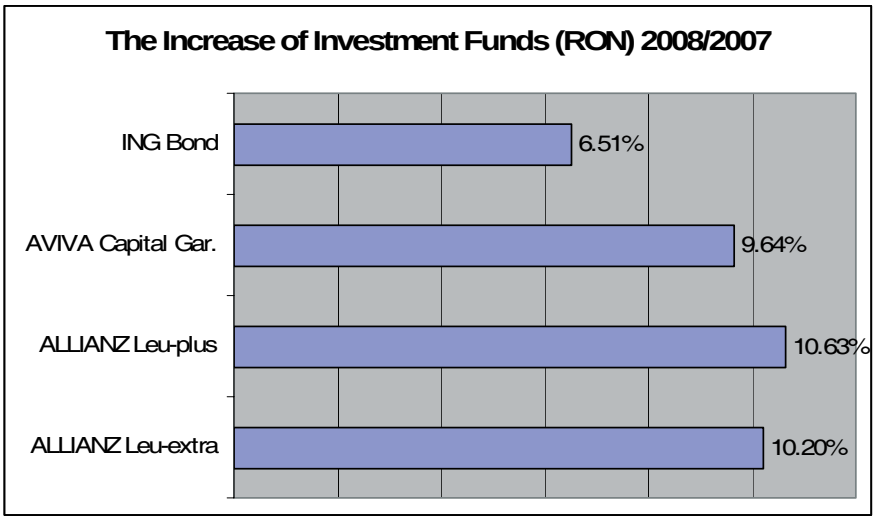


Red investment fund recorded the worst decrease in 2008 – 35.5%. This is why the fund is the most exposed one; investments are done preponderant in listed shares.

After analyzing this three life insurance companies we observe that even if the crisis predominate in the financial markets, the managers of the investment funds proved theirs' professionalism and in the last year got profit. The profitable investment funds are the one in Romanian currency and the ones with a high percentage of investment in monetary instruments, bonds guaranteed by different Governments.

We compare in the next graphic the increase in the last year of the investment funds with Romanian currency:

Fig.6. – The increase of investment funds in 2008/2007

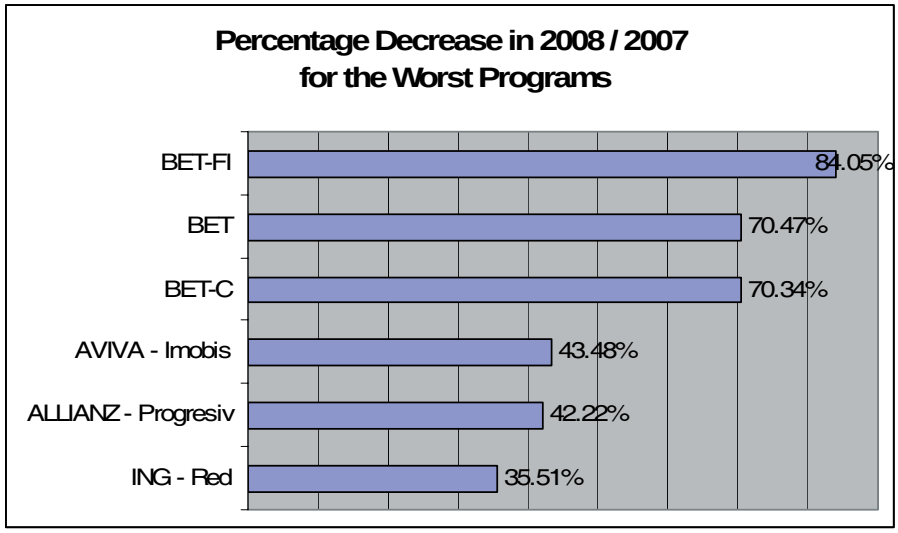


Allianz Tiriac Life Insurance recorded the highest increase of 10%. But we must take into account the medium level of inflation in 2008 of 7.85%. That means that only AVIVA and Allianz recorded a real profit.

4. Conclusions:

The life insurance companies in Romania find themselves into a delicate situation, the way they will manage this period, will influence the future of their prestige and not in the end the clients account.
If we compare the investment funds with the worst evolution together with the indexes of Bucharest Stock Exchage we will notice that the depreciation is not so high.
The evolution of BSE indexes in 2008 was a negative one: BET recorded a decrease of 70.47%, BET-C a decrease of 70.34%, BET-FI 84.05%, ROT-X 69.64%, BET-XT 76.26% AND BET-NG 72.31%.

Fig.7. – Percentage decrease
in case of insurance investment funds compared to BSE indexes
2008/2007



The "worst" depreciations of the investment funds are less than the correction in the listed shares. This happened because the insurance companies when launched the programs avoided investing all the funds 100% in shares.

Therefore, the evolution of the insurance companies investment funds must be explained to the clients comparing to financial markets evolutions, in that situation the insured people will understand that insurance companies managed in the best way investors' money.
Moreover, the financial consultants of the life insurance companies should explain the present option: to redirect the money from the less profitable investment funds to the profitable ones. And in the moment they consider that the depreciation trends in the international markets ended, they must choose again the medium or high risky investment programs.
We would like to mention that the accounts' situation may not be as negative as the investment funds show us. This may be explained by at least two mentions:

- the greatest number of the insured people have chosen to invest their insurance premium in more than one investment fund, so the risk is already spread from the beginning of the policy
- some of the clients already change the units allocation during the last year at the moment when the financial markets confirmed the depreciation trend

Also, the reimbursement of the actual account of some clients must be well explained. In the moment a client choose to end the contract before the maturity, there will be some penalties taxes from the insurance company and the effective received money are even less.
The cycle of the financial market is an economical situation, and the period is not a long one. The persons that have long time insurance policies should be patient because in a policy time the increasing and decreasing are inevitable.

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SOME PROBLEMS ASSOCIATED WITH THE APPLICATION OF COPYRIGHT LAW WITHIN THE MUSIC INDUSTRY

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Abstract

This work examines the historical, philosophical and legal particulars relating to copyright law and intellectual property as an intangible work, as well as, the practical application of those rights with emphasis on the particular effects of computerisation and the emergance of the internet on the business results of the music industry. A question is raised as to whether it is businessly ethical for a legal entity to accrue considerable material gain as the result of illegal usage of copywritten material.

JEL classification: K10, K21

Keywords: copyright law, intellectual property, intangible work, music industry, internet, business ethics.

1. POINTS OF INTRODUCTION

You shall not steal.
Exodus 20,2-17

Copyright law (auctor, lat. - multiplier, creator, author) is a branch of law relating to the protection of authors, which emerged in the 18th century. The first priveleges were recognised at the onset of the printing press (Venice 1469; French-decree King Franje I, 1521; England 1556, decree of Queen Mary Tudor; U.S.A. 1790; Prussia 1794; Italy 1801; Russia 1830; Austrian Empire 1846). The law of the Austrian Empire of 1895, applied to Dalmatia, and the Hungarian-Croatian law of 1884, applied to Croatia and Slavonia. The first Yugoslavia did not have such a law until 1929, whereas post-war regulation of this material was effected by the laws of 1946, 1957, 1968 and 1978. In 1967, the Convention for the creation of the World Intellectual Property Organisation (WIPO) was adopted, and in 1996, that organisation passed it's most important document, the Contract for Copyright Law. That Contract was ratified by the Republic of Croatia in 1997 (Horvat 2006).

The Constitution of the Republic of Croatia, article 68, states, "Freedom of scientific, cultural and artistic creation is guaranteed. The country shall

encourage and aid in the development of science, culture and art. The country protects scientific, cultural and artistic works as material of sacred national value. Guarateed are the protection of moral and material rights which eminate from scientific, cultural, artistic, intellectual and other productions. The country encourages and aids in the management of physical culture and sport." (Croatian Constitution, Official Gazette, NN, 1993: 68) On the basis of that article, the Republic of Croatia as early as June 2, 1993, passed the Decree of the declaration of the Act relating to the amendment and supplement of the Law of Copyright Law (Official Gazette, NN 58/93), subsequently, in 1999, the Act of Copyright Law (revised text), and in 2003, the Act of Copyright Law and Related rights (Official Gazette, NN 167/03) in conjuction with the Act ammending and supplementing the Act of Copyright Law and Related Rights (Official Gazette, NN 79/07) of 2007. Writing in regard to the problems related to the protection of copyrights, Josipović (2004, vol. 5:67-96), and referring to that last, valid Act, contends that statistical data clearly present a marked increase of legal proceedings against those who have breached copyright law. A great majority of processed violations relate to infringement upon the rights of authors of musical works as set forth in article 125, paragraph 1, line 4, ZAP. Although in practice other violations are encountered (especially relating to article 125, paragraph 1, line 5 and article 126, line 6, ZAP), it may be construed that almost all positive and negative sides of the violation- legal regime protect copyrights, not only in respect to the former, but also as regards the latest violation-legal regime, as cited in article 125, paragraph 1, line 4[1] and the related article 189, paragraph 1, line 2, from the recent ZAPSP. Additionally, article 32 of said act insures the author of a work the right to adequate compensation, and the aforementioned article 125, provides said author with the exclusive right to reproduce, distribute, rent, publish and/or otherwise place it at public disposal.

Consequently, historically and legally, there exists available sources which cultivate material relating to copyright law. Essential to understanding that law are two facts. First, that there exists tangible and intangible property or works. Intangible are those products of human intellect which represent property of the creator, in other words, under certain conditions , intellectual property. Although that work, respectively property is intangible in a physical sense, it possesses all characteristics of property, so that it may be bought, sold,

[1]"A legal entity shall be fined a sum of between 5,000.00 kn and 50,000.00 kn if (...) 4)without the author's permission or another with whom is vested the author's rights or authors' society or other legal entity specialised in the protection of authors' rights, according to article 90, paragraph 1, of this Law, when said permission is required, or, against their explicit prohibition, publishes, reproduces or multiplies, imports or distributes original or multiplied copies of the work, presents, performs, records, broadcasts, communicates by way of public media means, translates ,adapts, elaborates or processes in any other way an author's work or exploits the work in any other way (article 30), (...)." On th basis ofparagraph 2, for the violation of paragraph 1, the responsible executive of the legal entity shall also be fined with the same sum, with an individual who commits the same violation being fined between 1,000.00 and 5,000.00 kn.

licenced, traded, gifted or inherited such as is all other property. Naturally, the exploitation of intellectual property, as in the case of the trade of any other product, may generate revenue and furthermore, that property enjoys all rights regarding its protection as does tangible, material property. The second fact is that a distinction must be made between public and personal rather, personal or private use from the domain of intellectual property.

Writing about similar notions as early as 1797, Kant explains what constitutes a book: "A book is a written document(pen written or printed, on a few or many pages, here it is all the same) which represents a speech that someone by known linguistic signs presents to an audience. -The one who speaks in his own name is called the author. The one who by way of that writen document publicly communicates in someone elses name (author) is a publisher. If the publisher communicates with the permission of the author, he is to be considered a legal publisher, however, if he acts without the author's permission it is deemed illegal, i.e. a plagarist." (Kant, 1999:82) Furthermore, in his discussion on the illegal copying or plagerism theme, Kant writes:"The cause for such an injustice such as

2. CONSEQUENCES ARISING FROM THE APPLICATION OF COPYRIGHT LAW IN THE MUSIC INDUSTRY

The thought of 212 years ago may, because it related to the same law, be applied to the concept of CD's with music content. By purchasing a legal CD, one pays, for the right of ownership of that particular CD as a physical thing, which from the moment of purchase one owns, and therefore, can use for their personal benefit. Additionally, that same purchase endows the purchaser with limited permission of the author to reproduce the content of the CD in a private environment, and for private use. Physically, that CD can be disposed of, used as a coaster, gifted or be exploited in any such other way as are any other physical objectects found in one's possession, except that one may not publicly reproduce or otherwise multiply the CD for purposes of further distribution, for that right has not been purchased. The contents of a sound recording may not be purchased for any other purpose, except for private listening enjoyment in one's private environment. Simply, the CD is yours, but the songs recorded on it are not. Those songs are the sole ownership of the author who regulates their exploitation through various contracts, with the understanding that the author continuing to enjoy ownership as would any other property owner. The author lends, or better said rents the songs. Such renting occurs for the duration of the author's life and 70 years after his death, with some countries recognizing a post-mortem period of up to 120 years. It should be observed that, when music is in question, the law protects the performers' rights, or rather, the person or persons who have perfomed the piece, the sound recordings' publisher, or rather, that recordings' owner(s) for they have financed and distributed the material (mostly, recording companies).

Historically, until the begining of the XVIII century, development of the simplified music industry consisted of the composition and printing of music, with the predominant work having been done by the aristocracy and the church. It was then that composers such as Wolfgang Amadeus Mozart began to gradually commercialize their music and perfomances. In the XIX century, music distribution continued by way of music scores and "music boxes" which reproduced music using cillinders. It is important to note that the gramafone was invented on March 3, 1887. On that date, the French Academy accepted the patent of Charles Cilos, which encompased the entire system for recording and reproducing sound, the paleofon, which read markings made on a soot covered surface by a vibrating membrane. The markings were then fotographed onto a metal or copper plate where sound reproduction was instegated by sa vibrating membrane like the one used in the begining of the process. In 1888, one year later, at the Franklin Institute in Philadelphia, german born Emile Berlinger, presented a machine with a crank handle which reproduced sound off of a plate. He called it a gramofon, and it was to be used for entertainment purposes (Horvat 2004). It wasn't until the XX century, precisely in 1925, at Leipzig's fair that a german company "Odeon" introduced the double-sided gramafon record which reproduced 3,5 minutes of sound. That same year, in the U.S.A., experiments involving electronic recording were conducted, with the first such recordings having been released by the "Columbia" and "Victor" companies. The first record companies appear and begin mass production of records, providing everyone with accessable consumption of music.

After the introduction of vinyl and singles, LP-records soon appeared, mono sound switched to stereo, with the music cassette (MC) following. In fact, the cassette provided consumers with an even greater music enjoyment while in motion (automobile - auto cassette player, walking - *walkman*) where the choice of music, unlike listening to the radio, was left to the listener, and not a music editor. For the first time consumers, thanks to the possibility of recording onto a cassette, could manipulate the recording on their own. It was a time of analog recording and reproduction. The 1980's of the XX century, as a result of the development of digital technology and rapid informatisation have brought great changes to the music industry, and that process continues to today. The graetest change was effected by the Internet which by definition as provided by one of its sites, "publicly available global packaged information web which ties together the computer and the computerised web using the same named protocol (internet protocol). It is the web of all webs which consists of millions of household, academic and government webs which exchange information and services between themselves, such like electronic mail, chat and data delivery, thereby linking sites and documents via the *World Wide Web*."[2]
An internet search on Google for the croatian word "glazba" results in a listing of approximately 6,510,000 sites. The english translation "music" offers

[2] Source of data: http://hr.wikipedia.org/wiki/Internet, (accessed June 24, 2008)

2,270,000,000 sites of music contents, while the german "Musik" provides for a solid 251,000,000 site listings. Consequently, searches covering only three languages result in more than two and one-half billion results. In comparison, similar searches of the word "sex" which is spelled identically in most languages, provides "only" 728,000,000 sites or 3.5 times less hits. In continuation of this little experiment, "besplatna glazba" gives 441,000 results, "free music download" 258,000,000, and "gratis Musik" 1,170,000. The term "free children's medicines" provides a result of 37,900, and free toothpicks" 2,250 sites. Legally and ethically the results should, when comparing free music against free children's medicines be not 441,000:37,900 in favor of music , but at least 37,900:0 in favor of children's medicine. Music is someone's property, and in our society as we have seen from the recognised positive law, no one has the right to offer another's private property and/or dispose of it without the consent of the owner. Article 48 of the Croatian Constitution guarantees the right of ownership (Croatian Constitution, Official Gazette, 1993: 26). Legally, music belongs to someone. Legally it is someones. In the First part of legal doctrine - Private rights, Immanuel Kant speaks to the idea of possession: Legally mine (meum iuris) is that with which I am bound so that it would injure me should someone exploit that which is mine without my consent. A subjective condition for the possibility of general exploitation is possession" (Kant, 1999: 41).

Aside from the legal and philosophical theories, the modern business approach proposes the ideas of business ethics as an important factor in modern business transactions. " Business ethics are a special branch of ethics which are understood to apply ethical and moral values to business actions, and which appeared in the U.S.A. during the 1960's, while the Republic of Croatia began such application in the 1990's. The foundation of business ethics is a behaviour in accordance with the law."[3] The Cratian Chamber of Commerce passed its "Code of Ethics in Business"[4] which generally states, in paragraph 4, that all signatories are called upon to "...accept the obligation of acting in accordance with the principles of responsibility, truthfulness, efficiency, transparency, quality, good faith and with respect for good business practice towards business partners, business and comunity environment as well as, one's own employees. All business subjects shall abide by the current law respecting the principals of ethics in business practices." As of March 25, 2009, 616 croatian companies have signed this document.

[3] Source of data: http://www.liderpress.hr/Default.aspx?sid=40566, (accessed March 25, 2009)
[4] Full text available from:

http://www2.hgk.hr/komora/hrv/homepage/kodeks_poslovne_etike/Kodeks_poslovne_etike.pdf (accessed
March 25, 2009)

Since the definition and the Code provide a general and relatively wide explanation as to what business ethics should be, we must search for a interpretation of that particular phrase. Business ethics, by virtue of the adjective business "...that which is in connection with business, which relates to business..." (Anić, 1994: 724) and the noun ethics (croatian morals) which again "the cultivation of moral principals(morals) conduct of a society or societial group which is based on those basic catagories of social values such as: goodwill, honesty, duty, truth, humanitianism etc. ..." (General Encyclopedia, 1977:619), shows the need for the introduction of moral normatives in business to counter the hard business interests of profit and economic growth, if it is at all possible to act ethically in today's business environment.Even if we know nothing of business ethics, and just respect elementary principals of good breeding and manners with which we live, we can say that we are honest and that we surely act ethically at least in part, if we respect others, their property and interests. Therefore, as a matter of course, it follows that respect for another's property is a integral part of business ethics.

The premise to which this text speaks, imparts that:

- a great number of material exists which illegeally offer free music on internet sites
- there exist a legal presumption that the use of any sort of another's property, and especially copyrights, is forbidden and subject to prosecution
- numerous historical evidence concerning the regulation of authors' rights and recognition of the same, even as far back as the long past
- philosphical discussions which prove that the unauthorised use of another's intellectual property is illegitimate and unethical
- the existance of business ethics as a necessary and unavoidable standard to be applied to the actions of business subjects.

Creative or artistic realisation of an idea, which is the product of human intellect, belongs to its creator, while the right of intellectual ownership encompasses a system of legal instruments which regulate the accruement of such rights and the means of protections against its unauthorised use.

In a business sense, intellectual property represents intangible property whose successful exploitation may be a valuable business foundation (State Intellectual Property Office of the Republic of Croatia, 2008). The damage suffered by the music industry as a result of the emergence of the Internet are enormous. The IFPI (abb. International Federation of the Phonographic Industry) has posts official global figures for each year and are presented in table 1.

Table 1. IFPI official figures relating to the global sale of sound recordings (2000-2007)

year	amount sold	retail value in US$
2000.	3.500.000.000	36.900.000.000,00
2001.	3.200.000.000	33.700.000.000,00
2002.	3.000.000.000	32.000.000.000,00
2003.	2.700.000.000	32.000.000.000,00
2004.	2.750.000.000	33.600.000.000,00
2005.	--	33.000.000.000,00
2006.	--	31.800.000.000,00
2007.	--	29.900.000.000,00

Source: http://www.ifpi.org (2008)

Apparent is the downward trend of the entire revenue generated by the music industry, which in 2007, was 19% less than in the year 2000.

Obviously it is socially and culturally inacceptable, as well as, businessly unethical and subject to legal prosecution to make use of another's property without the consent of the owner and making adequate compensation for the same. However, the Internet is abundant with sites on which legal and physical persons offer that which is not their property to offer. Legal how-to manuals (i.e. Buckley and Clark, 2007) are sold in which directly or indirectly, refer to the existance of such sites. What sort of business ethics are applied by the owners of such internet domains where another's property is offered without compensation? Recently, the print media has written about the accrued wealth of the owners of Google: "The co-owners of Google, Sergey Brin and Larry Page are the richest young billionairs, even though their company stock has fallen in value by 30% in the past year" Šerić, 2009: 12). That article illustrates the general superficial attitude of the media when ethics are in question.

3. CONCLUDING THOUGHTS

Answers to this question present that the value system of our age is disturbed. If the media writes a piece which fails to acknowlege the rights of authors to protection, if the Croatian Hotel Association sends its members a memorandum advising the same not to pay author fees[5], and if on bookstore shelves exist a publication which shamefully speaks to the ethical problems associated with the illegal use of music, they all being business subjects which when choosing their employees and management practices should respect the principals of business ethics or at least ethics, something is not as it should be. Once again practice has has fallen short in relation to theory. Finally, we have seen that as of March 25 of this year, 616 croatian companies have signed the "Code of Business

[5] On March16, 2009, the president of the executive committee and the presidential body of HUH, Franco Palma, sent all members a memorandum in which he writes: "...We suggest that you temporaraly stop payment of debt obligations to HDS-ZAMP..."

Ethics", of the Croatian Chamber of Commerce. Considering the Monthly Statistical report of the State Statistic Authority and applying the 2007 classifications of the NKD[6], since January 31, 2009, in the Republic of Croatia, 263,658 legal persons have been registered, with 121,837 listed as active, and 128,37 commercial entities have been registered with 97,656[7] listed as active, it is not hard to conclude that the code has been accepted by only 0.63% of all active registered commercial associations. When looking at the relationship of the total number of registered legal persons, then only 0.23% of that catagory consider the principal of business ethics in Croatia.

If ethical conduct could be reduced to the phrase "do unto others as you would have them do unto you", and "a thief is the one who holds the ladder", then one may conclude that although legal solutions exist, as do the mechanisms for their execution, their response to the theft of an author leaves much to be desired. If nothing else, then a guideline of conduct could be one of the Ten Commandments cited at the begining of this text. Obviously, such a disbarragement of value judgement,needs to be afforded a great deal of thought by the legislature, court system, police and society as a whole.

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