

**ELEKTRONSKO UPRAVLJANJE IN
POSLOVANJE V SLUŽBI
UPORABNIKA**

**E-GOVERNANCE AND E-BUSINESS
AT THE SERVICE OF CUSTOMER**

Uroš Pinterič in Uroš Svete
(urednika/editors)

Ljubljana, 2007

ELEKTRONSKO UPRAVLJANJE IN POSLOVANJE V SLUŽBI
UPORABNIKA
E-GOVERNANCE AND E-BUSINESS AT THE SERVICE OF CUSTOMER

Uroš PINTERIČ
Uroš SVETE
(urednika, editors)

Recenzenti:
dr. Jaro Berce
dr. Andrej Lukšič
dr. Tina Kogovšek

Izdajatelj: Fakulteta za družbene vede
Za založbo: Hermina KRANJC

Copyright © po delih in v celoti FDV 2007, Ljubljana.
Fotokopiranje in razmnoževanje po delih in v celoti je prepovedano.
Vse pravice pridržane.

Naklada 200 izvodov

Naslovnica in prelom: Artline d.o.o.
Tisk: Littera Picta

Izid publikacije so finančno omogočili: DataLab in Hermes Softlab
Publication was financially supported by: DataLab and Hermes Softlab

CIP - Kataložni zapis o publikaciji
Narodna in univerzitetna knjižnica, Ljubljana

659.23:004

ELEKTRONSKO upravljanje in poslovanje v službi uporabnika =
E-governance and e-business at the service of customer / Uroš
Pinterič in Uroš Svete (urednika, editors). - Ljubljana : Fakulteta
za družbene vede, 2007

ISBN 978-961-235-268-4

1. Vzp. stv. nasl. 2. Pinterič, Uroš
231503104

Kazalo - Contents

Predstavitel avtorjev – List of Contributors.....	5
Introduction.....	8
<i>Uroš Pinterič, Uroš Svete</i>	
I. del	
<i>E-poslovanje v službi uporabnika ~</i>	
<i>E-business at the Service of Customer</i>	
Challenges and Opportunities of ICT in South-East European Countries.....	13
<i>Sandra Jednak</i>	
Internet Technologies' Application in Electronic Management.....	21
<i>Dragan Vukmirović, Miroљub Kostić, Biljana Djokić</i>	
B2C E-Service Quality in the Eyes of Average Customer	33
<i>Ivana Mijatović, Jovan Filipović</i>	
Interface Preferences along with the Experience and Attitudes toward Computer and Internet.....	41
<i>Ivana Kovačević, Dušan Vujošević</i>	
Web Portal for E-Education.....	53
<i>Marijana Despotović, Zorica Bogdanović, Božidar Radenković</i>	
Spletno oglaševanje – izziv prihodnosti	67
<i>Malči Grivec</i>	
Significance and benefits of e-business in SME in Croatian perspective.....	85
<i>Davorka Budimir</i>	
II. del	
<i>E-uprava v službi uporabnika ~</i>	
<i>E-government at the Service of Customer</i>	
Theory and practices of Slovenian E-government: Strategies and habits.....	93
<i>Uroš Pinterič</i>	
Development of E-government in Poland - Critical issues.....	103
<i>Agnieszka Pawłowska</i>	
The role of Business Renovation and Informatisation in E-government: The Case of Slovenian Ministry.....	111
<i>Aleš Groznik, Peter Trkman, Andrej Kovačič</i>	

E-government in the service of transparency of proceedings of public administration in Poland.....	125
<i>Piotr Sitniewski</i>	
Razvoj elektronskega javnega naročanja v Sloveniji pod vplivom pridružitve Evropski uniji.....	133
<i>Klementina Zapušek</i>	
E-uprava – sestavljanka brez končne slike: Teorija in praksa slovenske e-uprave.....	143
<i>Aljaž Prusnik</i>	
III. del	
E-varovanje uporabnikov ~	
E-security of Customers	
Zaščita informacijske infrastrukture v precepu državne varnostne politike.....	159
<i>Uroš Svete</i>	
Varno obnašanje uporabnikov v omrežnem okolju.....	177
<i>Mojca Ciglarič</i>	
The Management of Digital Certificates in Intranet Environment.....	193
<i>Dragan Đokić, Aleksandar Marković, Ondrej Jaško</i>	
IV. del	
Pogled v prihodnost E-storitev ~	
Look into the Future of E-services	
Zagotavljanje večje ekonomičnosti poslovanja javne uprave s pomočjo odprtokodnih in prostih programskih rešitev.....	207
<i>Sladjan Dujić</i>	
ICT related eGovernment research: A methodology to analyse gaps and identify future research topics	229
<i>Andreja Pucihar, Kristina Bogataj, Maria Wimmer</i>	
Stvarno in imensko kazalo – Index.....	242

PREDSTAVITEV AVTORJEV – LIST OF CONTRIBUTORS

mag. Kristina Bogataj

je raziskovalka pri eCentru na Fakulteti za organizacijske vede Univerze v Mariboru.
is senior researcher at eCenter at the Faculty of Organizational Sciences, University of Maribor.

Zorica Bogdanović

je diplomantka Fakultete organizacijskih znanosti Univerze v Beogradu in podiplomska študentka elektronskega poslovanja.
Has graduated at Faculty of Organizational Sciences, University of Beograd and postgraduate student of e-business.

mag. Davorka Budimir

je tajnik Hrvatskega politološka društva in direktorica podjetja Delfin v Zagrebu.
Is secretary general of Croatian Political Science Association and director of Delfin.

dr. Mojca Ciglarič

je docentka na Fakulteti za računalništvo in informatiko Univerze v Ljubljani.
is assistant professor at Faculty of Computer and Informatics, University of Ljubljana.

dr. Marijana Despotović

je docentka na Fakulteti organizacijskih znanosti Univerze v Beogradu.
is assistant professor at Faculty of Organizational Sciences, University of Beograd.

Biljana Djokić

Vodilna sodelavka v Direkciji za logistiko v Javnem podjetju PTT komunikacije "Srbija".
Chief Collaborator in Logistics Division in Public Enterprise of PTT Communications "Srbija".

Dragan Djokić

je direktor sektorja za informacijsko podporo v direkciji za IT in telekomunikacije v Javnem podjetju PTT komunikacije "Srbija".
Informatical Support Department Manager in IT and Telecommunications Division Informatical Support Department Public Enterprise of PTT Communications „SRBIJA“

Sladjan Dujić

je univerzitetno diplomirani politolog.
has a degree in political science.

dr. Jovan Filipović

je izredni profesor na Fakulteti organizacijskih znanosti Univerze v Beogradu.
is associate professor at Faculty of Organizational Sciences, University of Beograd.

Malči Grivec

je univerzitetno diplomirana ekonomistka in podiplomska študentka mednarodne ekonomije na Ekonomski fakulteti Univerze v Ljubljani.
Has degree in economics and she is postgraduate student of international economics at Faculty of Economics, University of Ljubljana.

dr. Aleš Groznik

je docent na Ekonomski fakulteti Univerze v Ljubljani.
is assistant professor at Faculty of Economics, University of Ljubljana.

dr. Ondrej Jaško

je izredni profesor in prodekan za finance in organizacijo na Fakulteti organizacijskih znanosti Univerze v Beogradu.

is associate professor and vice-dean for finances and management at Faculty of Organizational Sciences, University of Beograd.

mag. Sandra Jednak

je asistentka na Fakulteti organizacijskih znanosti Univerze v Beogradu.

is assistant at Faculty of Organizational Sciences, University of Beograd.

mag. Miroljub Kostić

je pomočnik direktorja Sektorja za razvoj informacijske tehnologije na republiškem Zavodu za statistiko Srbije.

Is assistant director of Sector for development of information technology at Statistical office of Serbia.

Ivana Kovačević

je asistentka na Fakulteti organizacijskih znanosti Univerze v Beogradu.

Is assistant at Faculty of Organizational Sciences, University of Beograd.

dr. Andrej Kovačič

je izredni profesor na Ekonomski fakulteti Univerze v Ljubljani.

is associate professor at Faculty of Economics, University of Ljubljana.

dr. Aleksandar Marković

je izredni profesor in predstojnik katedre za menedžment in organizacijo na Fakulteti za organizacijske znanosti Univerze v Beogradu.

is associate professor and chair of department for management and organization at Faculty of Organizational Sciences, University of Beograd.

mag. Ivana Mijatović

je asistentka na Fakulteti organizacijskih znanosti Univerze v Beogradu.

is assistant at Faculty of Organizational Sciences, University of Beograd.

dr. Agnieszka Pawlowska

Je izredna profesorica na Fakulteti za politične vede Univerze Maria-Curie Sklodowska.

Is associate professor at Faculty of Political Science, Maria-Curie Sklodowska University.

dr. Uroš Pinterič

Je asistent na Fakulteti za družbene vede Univerze v Ljubljani.

Is assistant at Faculty of Social Sciences, University of Ljubljana.

mag. Aljaž Prusnik

Je podpredsednik slovenskega društva za inovativno politologijo SIDIP in zaposlen v Hermes Softlab.

Is vice-president of Slovenian Association for Innovative Political Science – SIDIP and employee at Hermes Softlab.

dr. Andreja Pucihar

je docentka na Fakulteti za organizacijske vede Univerze v Mariboru.

is assistant professor at Faculty of Organizational Sciences, University of Maribor.

dr. Božidar Radenković

je redni profesor na Fakulteti organizacijskih znanosti Univerze v Beogradu.

is full professor at Faculty of Organizational Sciences, University of Beograd.

dr. Piotr Sitniewski

je višji predavatelj na Visoki šoli za javno upravo Stanislaw Staszic in Bialystok.
Is senior lecturer at Stanislaw Staszic School of Public Administration in Bialystok.

dr. Uroš Svete

je asistent z doktoratom na Fakulteti za družbene vede Univerze v Ljubljani ter raziskovalec na Obramboslovnem raziskovalnem centru pri Inštitutu za družbene vede.
Is PhD assistant at Faculty of Social Sciences, University of Ljubljana and researcher at Security Studies Centre at Institute of Social Sciences.

mag. Peter Trkman

je asistent na Ekonomski fakulteti Univerze v Ljubljani.
Is assistant at Faculty of Economics, University of Ljubljana.

mag. Dušan Vujošević

je zaposlen v podjetju Saga Infotech, ki se ukvarja z razvojem programske opreme za poslovne sisteme.
is employee at Saga Infotech, where he develops software for business systems.

dr. Dragan Vukmirović

je redni profesor na Fakulteti organizacijskih znanosti Univerze v Beogradu in direktor Statističnega urada Republike Srbije.
Is full professor at Faculty of Organizational Sciences, University of Beograd and director of Statistical office Serbia.

dr. Maria Wimmer

je profesorica e-uprave na Inštitutu za informacijske znanosti, Univerza Koblenz-Landau, Nemčija.
is professor of e-government at Institute for IS Research at University of Koblenz-Landau, Germany.

Klementina Zapušek

je tajnik Slovenskega društva za inovativno politologijo SIDIP, podiplomska študentka na FDV in uslužbenka Računskega sodišča Republike Slovenije.
Is secretary general of Slovenian Association for Innovative Political Science, postgraduate student at Faculty of Social Sciences, University of Ljubljana and works at Slovenian Court of Audit.

INTRODUCTION

Uroš Pinterič, Uroš Svetec

First decade of twenty-first century is also first decade of information society era, that became a reality and not just a theoretical framework for social changes describing after the end of cold war and technological revolution of 20th century. If the last decade of previous century could be understood only as era of new society model development, at the moment we can argue that global society is entering into new social model ruled by highly sophisticated information and communication technologies.

Sometimes new, expensive and very inadaptable information technologies, which were strongly limited to the developers, scientists and rich citizens, definitely entered into our commonness. Mobile communication, Internet and computers are not anymore just a privilege of some chosen social groups; they are not even a privilege of particular economic, industrial and social developed states. As our chapters show, some countries, which do not belong to the most important world information societies, succeeded a lot of interesting and original information communication technology practices within different parts of human life (e-economy and government, e-service and security), what is a very good proof, that information communication technology has a really huge intellectual and research base all over the world.

On the other hand, we also have to consider non-technological part of the ICT implications, which are probably much more important than anyone could imagine already since its beginning of existence. Different types of economy, political and security process as well as completely different types of our communication and entertainment confirm this thesis undoubtedly. Not only that our way of life is changing (we can talk about "information" way of life), the perception of physical reality is completely new as well. Modern information services ensure that the stories from any part of the world are coming into our bedrooms and for a long time is valid slogan: the information / stories are local or global.

Despite many different researches were already done in previous years, they were mostly focused on very specific and narrow topics without taking into account other aspects of use of information and communication technologies. Modern science is usually too divided to strongly cooperate on same topic. However, present publication aims to overcome narrowness of debate on information and communication technologies for only one point of interest. According to this we are able to simultaneously think about importance of information and communication technologies for modern society from economic, political, security, technical, computer, management and governance' development points of view. This multidisciplinary approach is enabling us to understand complexity of new technologies and also their impact onto development of modern information societies. On the other hand complexity of information communication technologies demands and makes difficult a real scientific holistic approach at the same time.

We also have additional advantage arising from sole nature of analyzed cases enabling us to see importance of new technologies in the process of social development. Most of the cases are concentrated on states that were less than two decades ago synonym for underdeveloped world. However, chapters in this book make a clear evidence, how different states are aware of importance of information and communication technologies and how the same, previously underdeveloped, states are trying not only to catch up other countries, but are also maybe even more advanced in use of information and communication technologies on their way to knowledge-based information society. When we just look backwards to Nato - Federal Republic of Yugoslavia conflict in the year 1999, we could establish the way, how innovative and also successful the information communication technology was used by Serbian hackers. This is a very clear evidence of high-developed technical culture within Serbian society. But in the meantime unfortunately the purpose of ICT usage has been basically changed. If in already mentioned conflict ICT use was primarily destructive and military or national security dominated, today's examples described in this book, confirm how ICT could be used also for common progress not limited just to the Serbian society.

The first part of the book is more concentrated on customer – business e-services relations. In this part authors of seven chapters are trying to define potential of information communication technologies in Central, Eastern and South European countries. They are presenting the potential of Information and communication technologies, but on the other hand they are also reporting already measured impact of those technologies on users and their attitude towards Internet and different applications. Chapters in this part are giving us some practical solutions, such as enhancing distant learning via education portals or more effective organization of document management system in companies with special networking tools. Last chapter in this part is discussing some main characteristics of development of e-services in Croatia.

The second part of the present book is concentrated on influence of information and communication technologies on public administrations of different states and on different specific solutions and activities that can be covered by concepts of e-government and e-governance. In all six chapters focal points are concentrated on enhancing effectiveness of administrative work and more user-friendly public services. In this part, there are some examples of good theoretical preparedness for e-government implementation and they are supported with contra-examples of relatively poor practical performance. Simultaneously there are also presented some further solutions for improving the situation. Great enrichment of this part are two chapters on Polish experience of introducing electronic services in their public administration.

The third part of the book is information and communication technologies security oriented. Three different chapters are presenting three different aspects of security connected to the information and communication technologies. Authors are discussing the role of state in providing secure information and communication environment (with special emphasis on providing national security within information society), importance of user's individual security attempts while using information and communication technologies (discussing main common security threats such as viruses, Trojan horses and other forms of malicious software, phishing as method of harmful, unauthorized gathering of confidential information from internet users). As an answer to previous mentioned Internet security threats, third article is discussing security certificates as the solution of identifying and protecting Internet users in electronic communication with different public authorities and service providers.

The fourth part of the book has two different chapters with good opportunities for further development of information society and for further research work in understanding it. The first chapter is alternative to many previous articles while warning as of potential of open code programs that are in many cases (or at least in case of most of administrative work) just as effective, but much cheaper as licensed computer programs. Despite that the author is concentrated on use of open code programs in public administration, same

solution could be discussed also in the private sector environment. The last chapter is giving us great opportunity not only to conclude this book but also to think about the future research of information and communication technologies and solutions within concept of e-government and e-governance. This chapter is giving possibility to further develop multidisciplinary approach to understand the ways of information society appearance in different states from different aspects and at the same time it encourages researchers to monitor convergence of technologies and society in next decades.

At end we have to mention again Slovenia's role in this book project. The fact, that in Slovenia we tried to join some, at the first sight, incompatible themes considering Information communication technology use, should not be exception. We have to be aware that such analytical projects take important additional value regarding different types of Information communication technology analysis. We also should be aware that just quantitative indicators testifying ICT dissemination in Slovenia, are certainly not enough for pushing our country from dynamic followers group toward the group of the states that are determining further ICT development and its social influences at the same time.

Uroš Pinterič and Uroš Svete, Editors

Ljubljana, 2007.

I. del

E-poslovanje v službi uporabnika ~ E-business at the Service of Customer

CHALLENGES AND OPPORTUNITIES OF ICT IN SOUTH-EAST EUROPEAN COUNTRIES

Sandra Jednak

INTRODUCTION

Information-communication technologies have one of the most important roles in the global economy. Its diffusion and using have had changed way of business, productivity, organisation and profit. Those technologies are one of the important inputs for economic performances. Access to information and communications is considered as crucial tool for poverty reduction, because it contribute to new sources of income and employment, improved delivery of health and education services and competitiveness of economy. An imperative of development today is to employ information and communication technologies (ICT).

During nineties, ICT sector had expansion in the USA, UK, Finland and Sweden. From 2003 till today, China, India, Ireland and some countries in Asia have developed ICT sector, and achieved the highest growth rate. During the last years, EU and transition economies have had the same aim, introducing ICT, building information society and increase competitiveness. In this paper, will be analysed South Eastern European countries - Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Macedonia, Romania and Serbia and Montenegro.

ECONOMIC OVERVIEW OF SOUTH EASTERN EUROPEAN COUNTRIES

South Eastern European countries (SEE) started transition process later than other countries in Eastern Europe. Over the past time, this region has been undergoing economic transition with mixed success. Countries of this region have aim to be came part of the European Union. Its have facade with challenges in adapting their economies to competitive global markets. Challenges in the region are further improvement of the investment climate, restructuring the political and legal sectors, enhance productivity, growth and stability, rebuilding infrastructure, introducing ICT in all area of economy and building information society. Among those countries, Bulgaria, Romania and Croatia (countries candidates for EU) have the best economic performances. Other countries are in the early stages of accession EU and implementation basic transition reforms for establishing functioning market economies. They need time for introducing and adapting reforms and changes in all spheres of society and economy.

Table 1. Macroeconomic indicators of Sout East European countries (SEE) 2005

	GDP real (yoy, in %)	GDP per capita (EUR)*	CPI (yearly average, in %)	Unemplo yment (in %)	Budget balance (in % GDP)	Current account (in % GDP)	FDI (net inflow, EUR million)
Albania**	6.0	2434	2.2	14.6	-6.5	-19.9	158
Bosnia-Herzegovina	5.5	1732	0.9***	45.5	0.0	-24.6	90
Bulgaria	5.3	2504	4.5	11.7	1.5	-9.8	400
Croatia	3.5	6224	3.3	18.3	-5.0	-5.7	1,510
Macedonia	3.5	2550	1.2	33.0	-1.5	-6.2	1,100
Romania	4.7	2517	9.0	6.0	-1.0	-8.9	1,800
Serbia-Montenegro	4.5	2510	17.0	32.5	0.2	-6.6	4,000
SEE average	4.9	2924	7.1	12.6	-1.3		

Note: *GDP per capita 2004; ** Data for Albania are for 2004; *** RS 0.5%, Federation 2.5%; Source: Xplicit, CEE Economic Data, Outlook for 2006, Issue 2; Xplicit, CEE Report 1, 2006; Investment guide SEE 2006; OECD;

Table 1 shows main macroeconomic indicators of SEE for 2005.

All countries have a relatively high economic growth. The main problems are unemployment, especially for Bosnia and Herzegovina, Macedonia and Serbia and Montenegro. Current account deficit is the highest problem for Albania and Bosnia and Herzegovina. Serbia has the highest level of FDI inflows. That is result of process of privatisation. Due to privatisation, Serbia also is running fiscal surplus. Along with this good performance, inflation is also problem for Serbia. This year the aim is to be one digit. Even those date are not showing significant progress, those economies have had improvement of economical data. On the beginning of transition process, those countries had low level of economic growth and productivity. The causes of small economical performances were: old and out of date equipment and technologies, shortage of capital, unskilled worker, over-employment in the companies and doing non-economical business activities. The SEE countries have made significant progress in designing and implementing reforms. SEE countries have made progress in privatisations. The privatisation was successful in the banking, oil and telecommunications sectors. Through the process of transition many companies are closed, many workers stayed without their jobs. They have been training and re-educated for other jobs, new companies are established, and capital and technologies are brought through foreign direct investments (FDI). Labor force in this region has good skills and education, and lower wages than in CEE (Central East European countries) or west developed countries. Beside highly qualified and inexpensive workforce, there is good knowledge of English language, what is one of the advantages. Those elements are in top conditions for attracting new foreign investors in this region, especially in ICT sector.

ICT POTENTIAL IN SOUTH EAST EUROPEAN COUNTRIES

The Stability pact for South Eastern Europe is declaration of commitment and a framework agreement to develop a shared strategy among all countries in this region for stability and growth. In its structure there is eSEE (working group). The aim of eSEE is to better integrate SEE countries into the global, knowledge-based economy through the building information society and introduces ICT in every segment of economy and society. ICT have been seen as driving force of the economic development and growth. The evidence on the significant contribution of ICT to output growth and productivity in a number of developed countries (especially in USA) in the 1990s suggests that ICT may offer a significant potential for faster economic growth, acceleration in productivity and an increase in standards of living in those countries. For example, ICT market in CEE countries will rise for 8.1 %, or 5 % more than in EU-15. That rate of growth is expected in next five years. The results of this growth are privatisation and restructuring of economy. During 2003, 5 billion euro was spent on hardware and that is 43 % all IT spending in CEE. (Internet 1)

All of South Eastern European countries are facing with the same challenges: improving mobile and internet penetration (its are still low), reduction of costs of available services (nowdays, its are higher than the EU average), achieving the full independency of the Telecommunications Regulatory Authorities (it has not been fully achieved) and finally enhance of investment interest in the ICT sector (investment is still moderate in this sector), due to the absence of a genuinely competitive environment. (Internet 2)

However, during last years number of users of Internet, fixed and mobile phone, is rising in transition economies. The rate of increase is about 70-80% in all categories for CEE countries, and this percentage in SEE countries is even greater. Eastern Europe comes out ahead in basic use of IT-PC equipment, internet access, and use of e-mail. 90 % of public sector employees from Eastern European countries have Internet access and South Europe have 74 %. There is expectation that the raise of ICT spending will be greater in next few years. Rise in income increases spending on hardware, computers, equipment and software. (Information Economy Report, 2005:4-12) According to the

World Information Technology Services Alliance (WITSA) forecast ICT spending worldwide will grow to \$ 3.2 trillion in 2007, up from \$2.1 trillion in 2001. The forecast is that the highest rate of grow ICT spending will have Eastern Europe to the end of 2007. (Internet 3) The number of users of Internet, phone and mobile phone is showed in Table 2.

Table 2: Population, Internet users, fixed and mobile phone in SEE countries

	Population (2006 Est.)	Internet Users	User Growth (2000-2005)	Fixed phone in use	Mobile phone in use
Albania	3,087,159	75,000	2900.00%	255,000*	1,100,000*
Bosnia-Herzegovina	4,498,976	225,000	3114.30%	928,000**	1,050,000*
Bulgaria	7,717,187	2,200,000	411.60%	2,726,800**	4,729,700**
Croatia	4,494,749	1,303,000	551.50%	1,887,600**	2,553,000*
Macedonia	2,048,624	392,671	1208.90%	525,000*	830,000***
Romania	21,266,679	4,940,000	517.50%	4,389,100**	1,021,540**
Serbia&Montenegro	10,717,314	1,517,000	279.30%	2,863,063**	5,272,820**

Note: *data for 2003, ** data for 2004, *** data for 2005;

Sources:

www.internetworldstats.com; www.cia.gov/cia/publications/factbook

Moreover, obligation of transition economies is to create information society. That is present needing on the global market. Specific priorities of SEE countries in this domain are 1) further development of a Single SEE Information Space, which promotes an open and competitive internal market for Information Society and media, moving it toward common European Information Space; 2) strengthening innovation and investment in ICT Research and Education to promote growth and more jobs and 3) achieving an Inclusive Information Society in which the priorities will be better public services and quality of life.

Basic fields for implementation information and communication technologies are: training and education workers for use those technologies, building infrastructure and laws for implementation of new technologies, developing e-government, diffusion those technologies in all area of society and economy. The first issues are improving performances in government, education, health and business sectors by using information and communication technologies. Development of e-government and modernisation public administration should influence on increase economic activities and performances. E-government has an aim to deliver better, more efficient public services and improve the relationship between citizens and their governments. The main results of introducing e-government are: reduction of cost for both businesses and governments, cutting the tax burden and boosting competitiveness; more open and transparent the public sector and providing the services to everyone. The modernisation public administration need to obtain aligning to EU standards. E-government was one of the action lines of the original eEurope 2002 Action Plan. The eEurope 2005 Action Plan set a number of targets for all levels of European government. This process of transformation have finally aim – efficiency in the governing process. E-government and e-education are major and initial forces in increasing IT investment and both introducing and diffusion of ICT in economy and society.

SEE countries signed eSEE Agenda with objectives of eEurope. Those countries need to work together in IT development, undertake common actions and exchange knowledge and best practice experience. This Agenda is very important for future economic and social growth. SEE countries are commitment to fulfilled aims of eSEE: Adoption of Strategies for IS Development on the basis of the common guidelines prepared by the eSEE WG, Cabinet Level Bodies for the development of IS, Legal framework on e-Signature, Legal framework on e-Commerce, Law on electronic documents, Law on Cyber crime, Law on Telecommunication and Law on Personal Data Protection. The all issues completed Croatia. The last in the introducing all commitments

are Bosnia-Herzegovina and Albania. All countries adopted a strategy for information society development. Legal framework on e-Signature has Serbia and Montenegro, Croatia and Macedonia. The Law on telecommunication all countries were brought. The commitments of e-commerce, electronic documents and personal data protection are open in most of countries, except Croatia. Croatia is trying to build knowledge based economy, where the further goals are introducing new technology in Croatian education system, developing the system of educative programs through the internet, on-line access to health services, developing and equipping scientific – business parks and providing each citizen to use services of public administration, health, educational and judicial system via internet. In table 3 is shown which countries adopted their commitments of eSEE Agenda.

Table 3. Overview of the status eSEE Agenda commitments

	<i>Albania</i>	<i>Bosnia-Herzegovina</i>	<i>Croatia</i>	<i>Macedonia</i>	<i>Montenegro</i>	<i>Serbia</i>
Adoption of Strategies for IS Development on the basis of the common guidelines prepared by the eSEE WG	YES	YES	YES	YES	YES	YES
Cabinet Level Bodies for the development of IS in line with ToR prepared by the eSEE WG	YES-NO	NO	YES	YES-NO	YES-NO	YES
Legal framework on e-Signature	NO	NO	YES	YES-NO	YES	YES
Legal framework on e-Commerce	NO	NO	YES	NO	YES	NO
Law on electronic documents	N/A	NO	YES	N/A	YES	NO
Law on Cyber crime	YES	NO	YES	YES	NO	YES
Law on Telecommunication	YES-NO	YES	YES	YES	YES	YES
Law on Personal Data Protection.	NO	YES	YES	YES	NO	NO

Note: Adopted (YES/NO)

Source: <http://www.stabilitypact.org/e-see/eseelMatrix%20short%20version%20Ju>

Countries are restructuring their regulatory and legislative environments to encourage investment in key sectors (public administration, banking/financial services and telecommunications). For changes and development in ICT sector as in the ICT-using sectors need new capital. Serbia, Albania, Bosnia and Herzegovina, Macedonia and Montenegro have low level of productivity, because of lack of capital and low level of economic activity. But last few years, the economic growth is attained. The way to converge and approach to EU candidate countries is investment in ICT and ICT sector. Romania, Bulgaria, Croatia and Serbia have the most competitive advantages for this field.

ICT SECTOR IN SOUTH EASTERN EUROPE

The basic competitiveness of development ICT sector and market in this region are: 1) low labour costs (salaries are considerably lower than in the Western Europe), 2) excellent skills base is reinforced by good quality universities, 3) fluency in English language and 4) new emerging markets. This characteristic could provide low cost of production of ICT products and services, and developed IT consulting and outsourcing in this region. The example of change comparative advantages and improvement economic results due to ICT is Ireland. This country, first had developed agriculture sector and primary resources (60 % of GDP), and now have developed ICT sector that has share of 60% of GDP. Transition countries could imply this model and become economies with base of knowledge and innovation.

The ICT sector worldwide is built on strong business alliances and partnerships. Countries of Eastern Europe are trying to grab more customers from Indian outsourcing

providers. In this region, beside Romania, Bulgaria has the greatest chance to be leader in IT outsourcing. In Bulgaria, German enterprise Software Company, SAP has established post in Bulgaria. Central of this enterprise send work and projects to its outsourcing post in Bulgaria, because of low wages (average gross monthly wage is 186\$) and quality labor in IT. (Robinson, 2005) In Bulgaria, the telecom infrastructure has been rapidly developing after the sale of 65% of state monopoly Bulgarian Telecommunications Company in 2004. After that year, the infrastructure is developing but Bulgaria needs to improve more infrastructure and business environment.

Romania ICT sector has the largest growth rate compared to the others sectors of the Romanian economy (20,2%), a contribution of 8% form the GDP being also one of the fastest growing markets in Eastern Europe (according to EITO 2005). The support for large-scale use of IT will be visible in increasing number of personal computers and interne access among the entire public segment. Romania fulfilled strategic objectives in the Government program. Beside this, Romania has several advantages, skilled and cost competitive labor (average gross monthly wage is 247\$), low cost of establish and running a business.

Croatia has experiences acceleration in the development of ICT. Today Croatian ICT sector counts 1.415 firms (1.274 in IT field, and 141 companies in telecommunication field) with more than 23.000 employees. Croatian ICT sector today creates around 5% of total GNP. (Internet 4)The main factors for the development are among others reduced telecommunications tariffs and less expensive Internet access, an increased e-business. Due this fact, Croatia succeeded to attract around € 1.7 billion of FDI in ICT sector. Croatia developed more in telecommunication sector and sector services, than IT outsourcing. Telecommunication market is fully liberalized and the telecommunication infrastructure one of the most modern in the SEE region. Even that Croatia have good and qualified labor force, Croatia has some limits in this field because of small labor pool and relatively high wage rates (average gross monthly wage is 953\$). All three countries, Bulgaria, Romania and Croatia need to improve more infrastructure and business environment. (Offshore Insight – Market Report Series, 2006:10)

Serbia have competitive advantages in ICT sector because of high-quality labor force, low wages (average gross monthly wage is 380\$), lower cost factor for software production services, internationally acknowledged IT skills – large number of IT professionals, whose skills are among the best in the world and the highest English language proficiency in the region. (Lucic & Cosic, 2005) The value of the Serbian IT market in 2003 was estimated at USD 340 million. ICT sector in Serbia is growing fast. Annual rate of growth is 18.3%. There are 1,408 IT companies (955 are domestic, 2% are foreign and 3 % are mixed ownership companies). In this sector are 9,409 employed (2003) and each year is enhancing that number. (Internet 5) Serbian software companies now support some of the world's largest corporations and financial institutions. With advanced solutions for informational management and network security, Serbia is emerging as leading destination for IT outsourcing. (Internet 6)

Albania has increased number of fixed lines, that number is 6.8 telephones per 100 inhabitants. Mobile services also have growth during the last years. In 1996 were 2,300 subscribers and by the end of 2004 were over 1.5 million customers. The main boom is expected after privatisation mobile operator. It will have a positive impact on the development of ICT infrastructure. Albania has potential in this sector but is less than in potential that have previews, above countries.

Bosnia and Herzegovina has telecommunication potential, mobile and fixed phone, but internet access is not so developed. This country has low rate of ICT penetration. ICT should become one of the main aims in recovery BH program. The domains in this sector are following 1) millennium development goals and the information society – studies on the economy, education, environmental protection and healthcare; 2)

significantly change of infrastructure of the information society; 3) development of Internet and telecommunications sector based on guidelines and policies for an information society; 3) integration of ICT and e-commerce into the economy and society i.e. e-Readiness assessment of Bosnia and Herzegovina's Society and 4) building methodology of information society structure.

Macedonia has low rate of internet penetration. The market of mobile phone has experiences strong growth and exceeds 50 % penetration. Macedonia has good communication network, but there is only one fixed line operator and there is no regulation framework for liberalisation. (Internet 7) 68% of the Macedonian citizens said that they do not use internet at all. 14% use internet in the internet clubs, while 11% surf at home. 9% use internet at work, 4% use internet when visiting friends, while 1% said that they use internet somewhere else. (Internet 8) However, the Government of Macedonia has worked with and the private sector and AED Centre for Applied Technology, and the result of that project is transformation of Macedonia. Once the least developed of the Yugoslav republics, became into the world's first 'wireless country' of its size or larger. Now a vast majority—95 percent—of the country's population has access to wireless, broadband Internet service. Beside this result, Macedonia has reduced cost of access to the internet. Moreover, Microsoft provided valuable software packages and licenses to the government of Macedonia, and Motorola contributed necessary hardware. Those moves show that ICT sector will develop in future time.

This group of countries has not seen ICT as priority. However, this group need to improve infrastructure and fulfilled objectives form eSEE agenda and on that way enhance ICT potential. The infrastructure is a problem for the most of all countries in this region. Many areas both rural and urban are lacking infrastructure and power resources. Moreover, those countries are not developed economies, most of them do not have possibility to invest and buy new technologies because those technologies are too expensive for the majority of people and there are also a lack of education prevents them from gaining full benefit from their use.

CONCLUSION

Use and development of ICT is condition to attain competitiveness, economic growth, and high productivity for SEE countries. Some of the economies in transition have low rate of ICT penetration. The low rate is the result of large number unskilled workers and expensive ICT infrastructure. They try to find strategy for implementation and diffusion new technologies in all areas of society, due to create environment with possibilities for economic and social development. Other countries as Romania, Bulgaria and Serbia built comparativeness on ICT, and have high growth and development of ICT sector.

For the carry out reforms there must be: macroeconomic stability, openness for inflows FDI, deregulation and liberalisation labour market and markets for goods and services, better infrastructure and enhance labour quality. Beside this, some countries of SEE could raises use of ICT in all sectors, especially in services sectors. Impact of ICT on output, growth, productivity depends on level of development economical, institutional and law infrastructures. All countries conduct reforms and builds infrastructures, but on the different level, with aim to align this sector to demand and request of EU.

LITERATURE

<http://www.stabilitypact.org/esee/eseeMatrix%20short%20version%20June%2020061.pdf> (14.8.2006).

<https://www.cia.gov/cia/publications/factbook/index.html> (25.8.2006).

Information Economy Report 2005, Chapter 1, UNCTAD
http://www.unctad.org/en/docs/sdteecb20051ch5_en.pdf (19.07.2006.)

Internet 1: <http://www.ekonomist.co.yu/magazin/ebit/33/ves/ves2.htm> (15.03.2006)

Internet 2: <http://www.stabilitypact.org/rt/eSEE%20Progress%20Report%20-%20May%202006.pdf#search=%22investment%20in%20ICT%20in%20SEE%20countries%22> (19.08.2006)

Internet 3:
http://www.researchandmarkets.com/reportinfo.asp?report_id=235199&t=o&cat_id
 (29.08.2006)

Internet 4: www.beam-ict.com/docs/Information%20on%20ICT-web.pdf (29.08.2006)

Internet 5: www.siepa.sr.gov.yu/attach/IT_Industry_in_Serbia.pdf (28.08.2006.)

Internet 6: <http://www.siepa.sr.gov.yu/importing/index.html> (28.08.2006.)

Internet 7:
<http://www.pwc.com/extweb/industry.nsf/docid/5891e985db830b3c802570c10051f954>
 (25.08.2006.)

Internet 8: <http://see.oneworld.net/article/view/126319/1/> (25.08.2006.)

Investment guide SEE 2006 (19.07.2006.)

Lucic, Jelena & Cosic, Nick, 2005, Offshore outsourcing –when to use?, CP Development CEO. <http://www.cp-dev.com/outsourcing.php> (20.08.2006)

Offshore Insights – Market Report Series, April 2006, Volume 4, Issue 3.
http://www.neoit.com/pdfs/whitepapers/Olv4i02_SEE_Services_Globalization_New_Frontier.pdf (25.08.2006.)

Robinson, Bill, 2005, Bulgaria: Eastern Europe's Newest Hot Spot? , Outsourcing Journal, August 2005. <http://www.itbusinessedge.com/item/?ci=4740> (21.08.2006.)

www.internetworldstats.com (25.08.2006.)

Xplicit, CEE Economic Data, Outlook for 2006, Issue 2; Xplicit, CEE Report 1, 2006.
<http://www.ba-ca.com/en/index.html> (19.07.2006.)

INTERNET TECHNOLOGIES' APPLICATION IN ELECTRONIC MANAGEMENT

Dragan Vukmirović, Miroljub Kostić, Biljana Djokić

PREFACE

In the 21st century the right information in the right time is invaluable capital. The way an organization manages the documents determines whether the information is right and timely.

The document management in large-size organizations is one the most interesting fields, which is fast developing and influences the business world, while at the same time it gradually becomes a burning issue just due to its complex nature. Organizations increasingly recognize the importance of this problem.

Worldwide the growth of information volume is exponential. The researches showed that once in three years the volume is double increased and only 0.5% of the total electronic information in the world are available online. On one side, the expansion is due to simple electronic-form documents make and inexpensive paper-print costs, and on the other side it is the result of growing requirements because of which organizations produce an ever increasing number of documents.

Together with the growth of documents volume, the problem of their storage and location is more notable. The basis of the electronic document management system is to provide efficient document searching and management in order that the employees may quickly and easily find and use information.

Electronic document management system provides the tools for the creation, storage, finding, management and distribution of electronic documents within an organization.

OUTSTANDING ISSUES FOR ELECTRONIC DOCUMENT MANAGEMENT SYSTEM

There is a series of obstacles that are encountered when implementing an efficient solution for document management. Some of them are the following:

1. Organization of documents storage
2. Time required for document finding, i.e. document availability
3. Joint operations over the same document and information update
4. Right to document access
5. Fast server response

1. Organization of document storage may be a great problem itself if the organizational structure, growth and development of companies are not observed and the employees are faced with versatile information sources that they cannot handle, i.e. where they cannot find required information. The means of document organization and storage determine efficient document management. Documents are to be organized and stored so to facilitate access to the required information. For this purpose metadata and hierarchical structures of directories are used. Unsustainable document organization causes difficulties in finding documents. The required data safety and the practice of the access right are significantly endangered.

2. Fast finding of the respective information is the prerequisite for every EDMS. The main methods of documents finding are viewing and searching. Viewing anticipates that user locates documents by moving through hierarchical directory structure, while searching