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USE OF THE INTERNET, PUBLIC ADMINISTRATION AND COMMERCE VIA THE INTERNET IN GORA AREA

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***Abstract*—**Information and communication technologies are a tool that enables the major development of a society. Monitoring of the Internet trends in Gora area shows some basic problems which should be solved in the upcoming period. The impact of information and communication has become a key factor today and the power of social transformation and social trends in general. The role of the Internet and other means of mass communication in the development and modification of the communication process in modern society is enormous. The strategy of the European Union is that the households in a higher percentage use broadband connection, no matter that the current access to the Internet is greater from personal computers, that increasingly mobile phones and other movable devices are used in order to have an access to the network from any location. Information society is a new society in which ICT plays a central role and in which the creation, distribution and manipulation of information is becoming the most important activity of society and individuals. The characteristics of this society are reflected in the importance of information and creative knowledge, the highlighted role of information technology in the dissemination of information, the use of information networks, radical changes in the lives of ordinary people and the need for individuals to gain experience and skills in order to access the richer information. All this creation requires knowledge, creativity, ability and aspiration of changes in thinking, requirements and expectations. It is important to educate individuals, especially the elder household members, to take seriously the warning that the Internet can be a means of various forms of abuse, including over-use and non-functional use.

***Keywords*—**the Internet, e-commerce, e-skills, information and communication technologies (ICT).

I. INTRODUCTION

INFORMATION and communication technologies (ICT) with their development and use have transformed the modern society into „information society“. The most important role in the production and economy and in all spheres in the lives of individuals and society in general, are certainly information and communication technologies.

The importance of these technologies is recognized by all worldwide and this year for the first time, a group of researches conducted a study on the use of information and communication technologies in Gora area. Gora is a municipal unit comprising eighteen villages and a town (small town) Dragaš.

The research was conducted in the period of time from 01 April 2013 to 15 April 2013. The applied type of research was: phone interview, direct or via the Internet (Skype, MSN). The sample size was 200 households, where the number of samples is same with the individuals.

The response rate was 100 %. The same pattern that was used for the households was also used for the survey of people aged 16 to 74, individuals who live in the territory of Gora area. The response percentage is the same as for the households [2-5, 10, 13].

For households, the target population consists of all with at this one member aged between 16 and 74 years of age.

The type of the sample is a two-phased, stratified sample by size and activity.

The research consisted of a group of questions categorized by modules:

- Module A: Access to information and communication technologies,
- Module B: Use of computers,
- Module C: Use of internet,
- Module D: Use of Public Administration,
- Module E: Shopping via the Internet,
- Module F: E-skills,
- Module G: General information on examinee.

In 2011, the research was conducted by EUROSTAT regarding the use of information and communication technologies in the households and by individuals, where the data of 27 countries of the European Union, including Croatia, Iceland, Norway, Macedonia and Turkey were included.

The research was conducted by a model of the National Bureau of Statistics, which is regularly conducted on the territory of Serbia. The questions that were used were the ones individuals and households

were asked in 2010 and 2012. And, all this is in line with EUROSTAT and the principles of the European Union, so we will make a comparative analysis with the results of the mentioned Office and with the rest of the countries in the region [7, 12].

The publication is intended to provide users with sufficient information about the current situation in the field of information and communication technologies in Gora area and will serve as a good basis for planning its future development and development in general of this sub-region.

II. ICT AS AN ANSWER TO THE MODERN SOCIETY

IT is one of the names which is used for information technologies and in English language it represents an *Information Technology*, and ICT is another name which represents information and communication technologies, and in English stands as *Information and Communication Technology*. Information technologies have emerged from electronics applying knowledge of physics and mathematics. Information technology (IT) is a concept with witch describes parts (hardware equipment) and programmes (soft wear) that allows us to access, download, organize, manipulate and presents information electronically. Communication technology (CT) is a concept used to describe telecommunications equipment through which we can send, receive and request information.

The modern world is facing with increasingly frequent periods of economic instability and negative rates of growth. Today, economic theory provides the central role to the growth driver, productivity and innovation, respectively the information and communication technologies and the Internet. Investments in ICT are often called smart investments that enable [7, 12, 2, 4]:

- Creation and retention of jobs and the positive trend of creating new jobs, contemporary technologies and stable economic growth,
- Creation of the basis for sustainable economic growth in the future.

McKinsey Institute estimates that at the global level with be experienced the growth of GDP of 3,40 % in developed countries that achieve 70 % of world GDP, and that achievement will be contributed by the Internet. In the developed part of the world, the Iinternet with 21 % of GDP contributes to growth. And, according to data of the EU, ICT sector realizes 5 % of European GDP, and with 50 % contributes to overall productivity growth in Europe [7, 12].

One of the most striking global consequences of the revolution of information and communication technologies (ICT) is certainly a development of electronic commerce (e-commerce), respectively the activities of buying and selling of products and services that are carried out via the Internet or other channels of electronic communication. Today, there is virtually no country that has no access to the Internet, and that it does not have any sort of e-commerce, while Europe, with Asia and North America, leads in this trading segment [9]. However, when one looks at the representation of e-commerce in individual European countries, he observe that the data between countries vary widely.

At the current rate of multiplication of knowledge and discovery, the total sum of the knowledge which will be disposed by humanity will be 4 times greater from a moment when a child which is born finishes a college. When that child should be 50, the total sum of knowledge will be increased by 62 times, and by 97 percent of the knowledge will be revealed after his birth [8].

More information has been collected for the last 30 years in the previous 500 years. Interestingly, the Sunday edition of the New York Times publishes more information than a man who lived in the sixteenth century, compiled a lifetime. Total of human knowledge in the period between 1900-1950 was doubled, and since then, doubling every 5-8 years.

The obsolescence period of information in ICT is six months, and the amount of information that today appears in a single day is greater than the total amount of information from the creation of the world until the Middle Ages [5-6].

III. THE RESULTS OF RESEARCH AND COMPARATIVE ANALYSIS

For many people the life seems very difficult without the use of the Internet, while the others have never used the Internet..

According to recent research since 2012, less than a quarter (about 100 million) from about 500 million of people in the European Union have never used the Internet. In 2006 about 50 % of the population had the Internet, and in 2011 nearly three-quarters.

Number of individuals of the age between 16 and 74 who have never used the Internet is 24 %. When compared the north and the south of Europe, the differences in the Internet use are great. The percentage of those who have never used the Internet varies from 54 % in Romania, 46 % in Bulgaria, 45 % in Greece and 41 % in Cyprus and Portugal to 9 % in Finland, 8 % in Luxembourg, 7 % in Denmark and 5 % both in Netherlands and Sweden [7, 12].

Based on the research of the National Bureau of Statistics implemented in the 2012 by the methodology of EUROSTAT, an analysis is carried out on the use of the Internet in the management of the companies. Research on the use of information and communication technologies in the company is on the representative sample of 1.200 companies, with the rate of response 89 % or 1067 companies. Companies on the territory of the Republic of Serbia use computer in their business. The percentage of computer usage is 98,10 %, which is increased by 0,30 % compared to 2010 year. The use of

computers is lowest in small enterprises and amounts to 98,00 %, and in medium-sized and large enterprises amounts to 100 %. The use of computers in enterprises varies depending on the territory entirety: in Belgrade it is 99,30 %, in Vojvodina 98,40 %, and in Central Serbia 96,50 %. In 31,90 % of the companies, a quarter of employees use computer at least once a week, while in 35,70 % of the companies 75–100 % of employees use computer at least once a week [10].

Households in Serbia that possess the Internet connection in 2012 amounts to 47,50 %, which is an increase of 6,30 % compared to 2011, 8,50 % compared to 2010, and 10,80 % compared to 2009. There are significant differences between rural and urban parts and the ratio is 57,50 % to 33,20 %. Devices by means of which access to the Internet is enabled is largest from personal computers with 84,80 %, with mobile phones 37,20 %, with laptop 35,40 %. As for the types of connection leads DSL (ADSL) with 51,00 %, followed by cable internet with 31,00 %, WAP and GPRS with 24,40 %, while the modem connection of households is 1,40 %. Broadband internet connection is possessed by 38,00 % of households in Serbia, while in 2011 amounted to 31,00 %, and in 2010 27,60 %. The survey showed that 48,40 % of people used the internet in the last three months, and as much as 48,40 % of respondents have never used the Internet [10].

In Table 1 the number of households in settlements with levels of education, employment status and number of household members with a separate number of children under 16 years is presented.

Table 1: Households and Persons in Gora area

Settlement	Number of households	Income (€)			Level of education			Employment status			Number of members	
		To 300	300-600	More than 600	Primary	Secondary	Higher and Superior	Employed	Unemployed	Students and others	Total	Younger than 16 years
Baćka	1	1	0	0	0	1	0	1	0	0	3	0
Brod	14	9	3	1	1	8	4	10	2	2	51	24
Dikance	7	5	1	1	0	5	2	5	2	0	23	8
Donja Rapča	6	3	2	1	1	3	2	4	1	1	19	11
Donji Krstec	5	1	4	1	1	1	3	4	1	0	18	10
Dragaš	24	12	7	5	2	5	17	20	1	1	74	37
Globočica	23	8	12	3	2	8	13	21	0	1	72	42
Gornja Rapča	7	3	3	1	1	4	2	5	1	1	26	16
Gornji Krstec	5	4	1	0	2	2	1	3	2	0	18	8
Kruševo	22	12	9	1	5	10	7	15	4	3	79	29
Kukaljane	7	5	1	1	3	2	2	3	3	1	14	8
Leštane	6	6	0	0	3	2	1	2	3	1	12	5
Ljubovište	8	5	2	1	5	2	1	4	3	1	19	11
Mlike	2	2	0	0	1	1	0	1	1	0	5	0
Orćuša	3	3	0	0	3	0	0	0	3	0	9	4
Radeša	10	9	1	0	6	2	1	3	5	2	24	10
Restelica	28	20	4	4	15	9	4	10	15	3	92	47
Vranište	10	5	2	3	2	2	6	8	1	1	34	13
Zli Potok	10	10	0	0	8	1	1	2	8	0	40	17

The tested households in Gora area have the Internet connection in the amount of 88,98 %. In terms of monthly income per household the Internet connections are mostly represented by households from 300 to 600€ in the amount of 74,07 %, up to 300 € was 16,67 %, while for households with higher incomes from 600 € used 9,26 %. Internet access at home is 87,04 %, at work 44,44 %, do not want internet 9,26 % and in other places (internet café, hotel, airport) 50,00 %.

Compared with Serbia, the usage is much higher, 47,50 % of households have internet connection in 2012. In 2012, the Internet connections had 41,20 % of households, and in 2010 it was 39,00 %. A significant difference is between the rural and urban parts, 57,50 % to 33,20 % [10].

Montenegro in its research showed that 55,00 % of interviewed households had an access to the Internet at home. The largest internet access from a PC is 75,30 %,

and from a laptop is 52,00 %, while using mobile phones is 24,20 %. In the types of internet connections leads DSL with 56,10 %, followed by wireless internet with 34,10 %, mobile broadband connections with 20,00 %, cable internet with 12,80 % and other broadband connections with 11,10 %. The highest percentage of the Internet use in the last three months is at home 90,50 %, while 29,40 % of them who used the Internet at home is 14,20 % in the educational institution (Table 2 and Figure 1) [13].

Table 2: The Internet in households
[authors of the study and 10, 13]

Territory	The percentage of use (%)
Gora area	88,98
Serbia	47,50
Montenegro	55,00

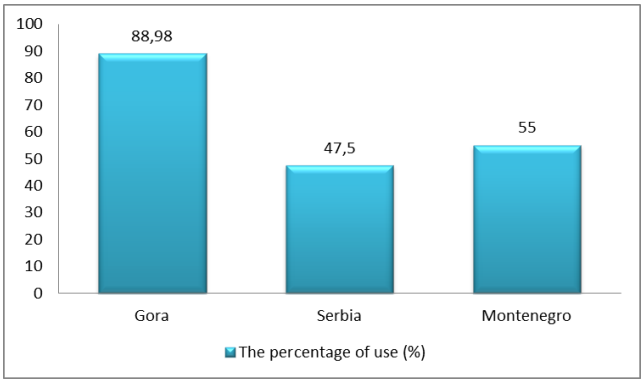

Figure 1: The Internet in households
[authors of the study and 10, 13]

When asked about the type of device that can help an access of the households to the Internet in Gora area leads PC with 88,89 %, mobile phones with 100 %, laptop is 33,33 %, through play-station 16,67 %, while 5,56 % is used TV with specific internet connection and handheld computers (Table 3 and Figure 2).

Table 3: Way to access the Internet [authors of the study and 10, 13]

Devices	The percentage of use (%)		
	Gora area	Serbia	Montenegro
PC (personal computer)	88,89	84,80	75,30
Laptop	33,33	35,40	52,00
Mobile phone (GPRS)	100,00	37,20	24,20
Play-station	16,67	1,30	-
TV set with specific internet device	5,56	0,80	-
Handheld computer	5,56	1,10	-

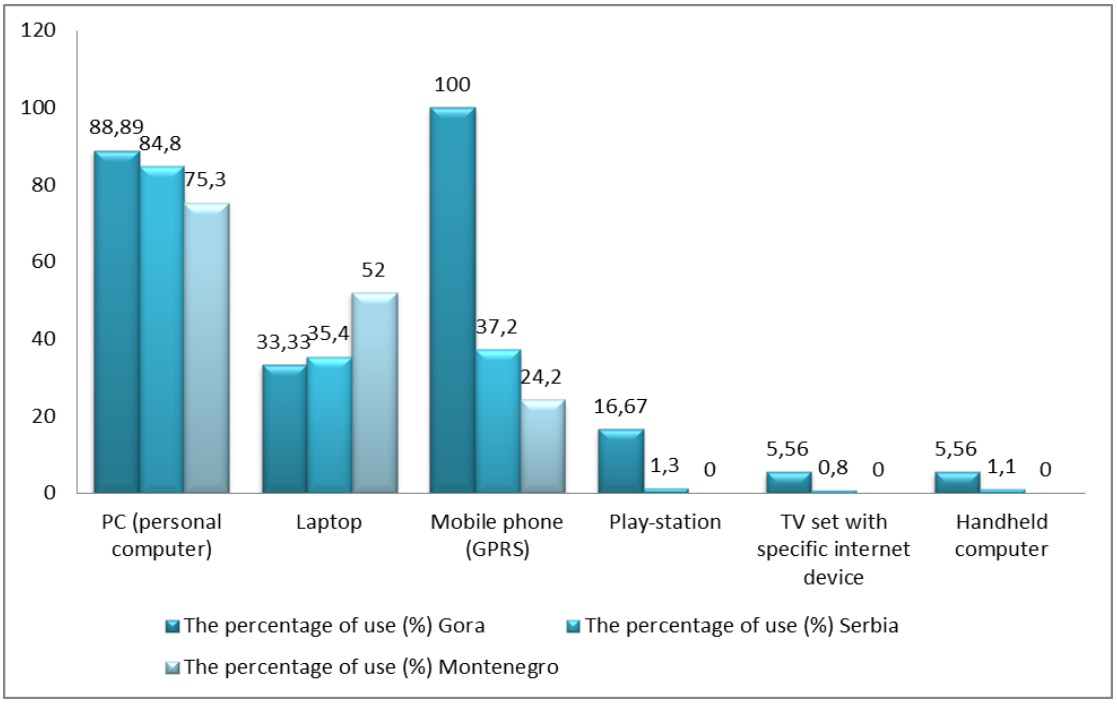

Figure 2: Way to access the Internet [authors of the study and 10, 13]

The situation in which is Gora area forced the population to be well-equipped with information and communication technologies, in order to have close ties with the members of their families who are located all over the world. Much influence is caused by security situation in which are the citizens of Gora area. It is worth to note that the most advanced technology mainly emerged after the war, respectively in 1999. The Internet, mobile phones and cable television (terrestrial) are new in these areas.

The population of Gora area is rural, an only exception is the town of Dragaš which is located in a very poor state of infrastructure and urban. The using type of connection mostly represented through a modem is 55,56 %, followed by cable internet is 38,89 % and mobile phones 33,33 %, and at least is ADSL or DSL 5,56 % (Table 4 and Figure 3).

Compared with Serbia for 2012, we obtain the following results: DSL (ADSL) has 51,00 %, cable internet 31,00 %, WAP and GPRS 24,40 %, and modem connection 1,40 % of households [10].

In Montenegro, in connection with internet access and type of connections in households lead DSL (ADSL, SHDSL, VDSL) connection type with 56,10 %, wireless internet 34,10 %, mobile broadband connection 20,00 %, narrow-band 11,10 % and cable internet 12,80 % of respondent households. The most frequently mentioned reason why the household does not have an internet access at home is that the equipment is too expensive and they make up of 26,60 %, while 40,00 % of them said that there was no need for the Internet, and 25,90 % said that internet access is very expensive to them [13].

Perspective is reflected in broadband internet connection that allows not only faster access to the Internet, but changes the entire way of using the Internet as it enables download of information from the Internet in a much faster way than the traditional (dial-up) modem connection. Accordingly, as one of the main indicators of the developed use of ICT in the European Union since 2005 is the percentage of households that have this type of Internet connection. This type of connection is quite expensive and households with a monthly income of more than 600 euros can afford it.

Table 4: Type of the Internet connection [authors of the study and 10, 13]

Devices	The percentage of use (%)		
	Gora area	Serbia	Montenegro
DSL (ADSL)	5,56	51,00	56,10
Modem	55,56	1,40	11,10
Cable internet	38,89	31,00	12,80
Mobile phone (GPRS, 3G, WAP)	33,33	24,40	34,10

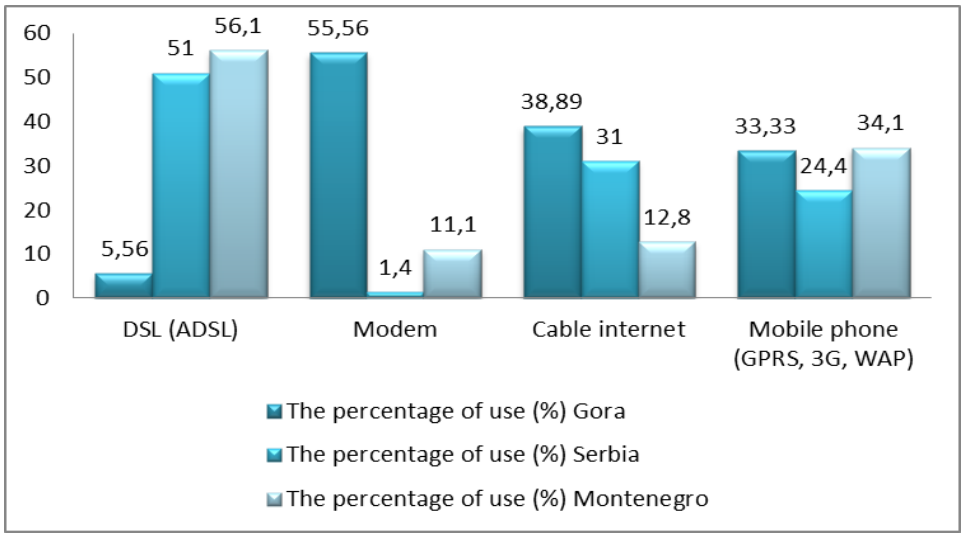

Figure 3: Type of internet connection [authors of the study and 10, 13]

The largest Internet access in Montenegro was achieved at home 87,04 %, at work 44,44 %, did not want 9,26 %, and the rest or the other way 50,00 %. If you look at the research data regarding to the Internet use by individuals it is very interesting in the last three months, which is almost hundred percent. Every day use Internet 76,47 % of individuals, weekly 17,65 %, monthly 5,88 %. At home is the largest use of the Internet to 88,24 %, used by others at home is 47,06 %, at work 29,41 %, in education institution to 41,18 % of

interviewed individuals. Only one of the respondents said that he used the Internet three months ago or 5,88 %, and none of them a year ago. All respondents who are students or pupils have been using the Internet in the last three months hundred percents.

The largest Internet activity is in e-mail sending by 42,59 %, then, followed by chatting to 31,48 %, upload of texts, photos and the like is 24,07 % and use of peer to peer is 14,81 %.

The percentage of use of the Internet by citizens and companies in some countries is as follows: 80 % Iceland, 85 % Croatia, 30 % Macedonia, Azerbaijan 3 %.

E-skills individuals have gained in many ways, but the biggest percentage involves the self-study which amounts to 48,15 %, in school is 22,22 %, and formally is 20,37 %. It is very important to emphasize when asked whether their computer or the Internet skills they assess as sufficient for finding or changing jobs within a year, the positive response was 5,56 %, to communicate with relatives, friends, colleagues over the Internet is 55,56 %, for the protection of the data on computer was 35,19 %, and for the protection of the computer from viruses or other infections amount to 25,93 %. When asked when the last time they attended a training course on using computers or the Internet, the negative response was 66,67 %, which presents a major gap between the possession of ICT and digital literacy.

Use of public administration based on getting the website information is 31,48 %, to download forms, documents is 16,67 %, sending is 3,70 %, that the services are not available is said by 18,52 %, there was no need to send the completed forms is 20,37 %, have not been used the security and protection of data is 7,41 %, and none of the above is 38,89 %.

As for the e-commerce in Gora area, the percentage of respondents who said that they had never used it is higher and amounts to 74,07 %, in the last three months is 12,96 %, more than three months but less than a year is 3,70 %, more than one year is 3,70 %. E-commerce is used to purchase foods, pharmaceutical products, books, magazines by 3,70 %, while the procurement of computer equipment is 7,41 %.

Percentage of households possessing Internet connection is highest in Sweden by 91 %, Denmark is immediately after with 90 %, the third is England by 85 %, then Finland 84 %, Germany 83 %, Ireland 78 %. From our region with the highest percentage is Slovenia with 73 %, Croatia 61 %, Romania 47 %, Bulgaria 45 %, Serbia 41 % (the ranking list of the EUROSTAT for the 2011).

It is very important to draw attention to households and individuals in Gora area that the Iinternet is the means by which there can be the various forms of abuse, as well as an excessive and non-functional usage. You need to pay attention to the terms and condition of payment via the Internet, providing personal data, selecting trusted sites, contacts with unknown persons, because it is about the population in the late age and large digital illiteracy.

IV. Conclusion

Information and communication technologies have marked the end of the twentieth and the beginning of the twenty-first century and the transformation of industrial society into the information society, opening the new evolution of mankind with immense possibilities of approaching the vision of many science fiction stories. The Internet has become the most massive media with a large impact on all segments of society by changing the way of living, thinking and communication. All is based on one click and entering the world of evolution of basic social habits and needs, such as e-commerce, socialization, health services, solving of urgent social, economic and society issues.

Availability and inclusion in mainstream of ICT, regardless of the category of population or developed or underdeveloped parts of the world is an inevitable step that must be based on the well-thought strategies and programmes. On the contrary, there is a digital divide that is reflected in the gap between those who have access to modern technology (computer, the Internet) and those for whom the access is denied. The result of this inequality is: social, economic, educational and so on.

At this moment in the territory of Montenegro a digital gap of e-commerce, e-skills and the use of public administrations is recorded, as well as the language barrier of English language, where we know that 70 % of sites are in English.

OECD defines this phenomenon as the gap between individuals, households, business and geographic areas which are located in different social and economic levels in terms of both their possibilities to access information and communication technologies and the use of the Internet for a spectrum of different activities [1, 6, 11].

References

[1] Commission of the European Communities, (mart 2010), A Strategy for Smart, Sustainable and Inclusive Growth, Communication from the Commission, COM (2010) 2020, Brisel.

[2] Damnjanović, Z.; Ranđelović, D.; Dašić, P. & Šerifi, V.: Knowledge management ICT in environmental and educations – competitive advantage in new economy. In: *Proceedings of the 1st International Conference "Economics and Management-Based on New Technologies – EMoNT 2011"*, Kladovo, Serbia, 12-15. June 2011. Edited by Predrag Dašić. Vrnjačka Banja: SaTCIP Ltd., 2011, ISBN 978-86-6075-023-7.

[3] Dašić, P.: Put ka društvu znanja i trendovi Evropske RTD misije. *Časopis IMK-14 Istraživanje i razvoj*, God. XII, br. (24-25) 1-2/2006 (2006), str. 77-92. ISSN 0354-6829.

[4] Dašić, P.; Šerifi, V. & Bulatović, Lj.: Wisdom in knowledge management strategy. *Annals of the Oradea University - Fascicle of Management and Technological Engineering, CD-ROM Edition*, Vol. X (XX), No. 2 (2011), pp. 5.40-5.48. ISSN 1583–0691.

[5] Delić, N.: 2008, Informaciono-komunikacione tehnologije u obrazovanju.

[6] Đorđević, G.: Impact of ICT and information society on economic and social development. Socioecnomica, Vol. 1, No 2, pp. 188-200, December 2012.
[7] ITU, (2010), Monitoring the WSIS Targets, World Telecommunication/ICT Development Report, Ženeva.
[8] Klarić, N.: Primjena savremenih sredstava informacionih tehnologija u obrazovnim procesima.
[9] Nielsen: Global Consumer Report (2010). Global Trends in Online Shopping.
[10] Republički zavod za statistiku Republike Srbije RZS: Upotreba informaciono-komunikacionih tehnologija u Republici Srbiji, 2012. – Domaćinstva/Pojedinci i preduzeća, Beograd, 2012.
[11] Strategija razvoja informacionog društva u Republici Srbiji do 2020. godine. Beograd, 05 Broj: 345 4865/2010-01, 8. Jula 2010.
[12] World Economic Forum, (2011), The Global Information Technology Report 2010 – 2011, Geneva.
[13] Zavod za statistiku Crne Gore MONSTAT: Upotreba informaciono-komunikacionih tehnologija u Crnoj Gori u 2012. godini. Broj: 296, Podgorica, 31. oktobar 2012.