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Internet and PC Penetration in Serbia 2006

Milina Petrovic
Milan Sitarski

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CePIT - Centre for Research of Information Technologies, carries out research on information society, designs and implements e-learning programmes and promotes concept of information society in order to build up knowledge-based society in Serbia.

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B( )S Belgrade Open School

Belgrade 2007

Contents

FOREWORD

The Centre for Research of Information Technologies of the Belgrade Open School (CePIT), with the support of the Olof Palme International Centre, researches internet usage and information society development in Serbia for five years already. A lot has been said about the concept and presumptions of Information society development in previous CePIT's publications (Internet Survey: Belgrade 2002 (2003), Global Citizens (2004), Perspectives of Networking (2004), Developing Network (2005)). Not attempting to discuss either techno-optimistic or techno-pessimistic attitude to ICT's development and its influence, it is indisputable that information-communication technologies are creating the possibilities for social transformation. The question that arises today is to what degree is Serbia, as a developing country, actively participating in the global information economy?

The main purpose of this publication is to introduce the reader with the results of the empirical study of Internet usage in Serbia in 2006. In relation to our previous studies of information society development in Serbia and the Western Balkan region, this study is fundamentally different since it is designed and carried out aiming to reveal the Internet penetration rate in Serbia.

The research on Internet and PC penetration was conducted on the nationally representative sample of Serbia (without Kosovo province, which is administrated by the United Nations). The field research was conducted during June 2006.

This study brings the data on PC and Internet penetration in Serbia, the basic demographics of internet users population, the motivation and non-users intention to start using the internet by the end of a following year, the basic parameters of internet usage (place of access, type of connection, years of internet usage and some characteristics of internet behaviour) and comparative data on political orientations of Internet users and non-users.

Milina Petrovic[1]

E-SERBIA 2006

Research Methodology

The study of basic parameters of information development in Serbia, more precisely – of PC and Internet penetration, is a descriptive field research conducted by use of instrument consisting of questions of closed and open type, as well as the Likert scales. Fieldwork and sampling were done by the *Strategic Marketing Research* agency in June and July 2006.

The study sample was representative for the population of Serbia without Kosovo and Metochy, and it consisted of citizens older than 15 years. The sample was stratified in three phases. The first phase was a random selection of municipalities chosen proportionally to the strength of stratum, i.e. the region. The regions included Vojvodina, Central Serbia and territory of city of Belgrade. In the second phase, the specific households were chosen by the random step method. In the third phase, using Kish tables, a respondent was chosen from each household. The following table shows the sample structure.

Table 1. Sample structure

		Cases percent
Sex	Male	47.8
	Female	52.2
Total		*100*
Age (years))	15–29 years of age	24.7
	30–39 years of age	16.2
	40–49 years of age	18.6
	50–64 years of age	22.3
	65+	18.2
Total		*100*
Marital status	Single, not living with the partner	25.6
	Married, living with the partner	61.9
	Divorced, widow/widower	12.5
Total		*100*

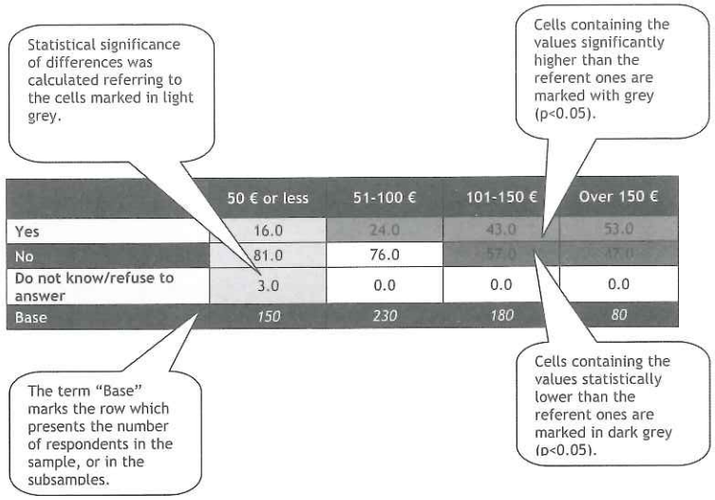
1 The e-mail for correspondence with the author is milina@bos.org.yu.

		Cases percent
Education – last finished school	Completed elementary school (or incomplete elementary school)	40.5
	Completed secondary school	44.2
	University degree	15.3
	Total	*100*
Current occupation	Unqualified worker	4.5
	Qualified worker	10.6
	Employed outside manufacturing–administration, etc.	8.4
	High qualified intellectual (lawyer, doctor, teacher))	2.6
	Middle management	3.9
	Top management	0.9
	High qualified self-employed intellectual (lawyer, doctor, teacher...)	0.4
	Owns small enterprise, workshop, etc. – less than 20 employees	2.0
	Owns bigger company, stockholder – more than 20 employees	0.1
	Farmer, fisherman	3.8
	Earns by himself in some other way	4.1
	Pupil	5.6
	Student	6.2
	Housewife	11.8
	Retired	23.5
	Currently unemployed	11.6
	Other	0.1
	Total	*100*
Type of household	Lives alone	9.1
	Married couple without children	4.8
	Married couple with children	31.9
	Married couple with adult children (over 27 years of age)	5.7
	Multigenerational family (three generations and more)	32.7
	Single parent	2.9
	Married couple, children living separately	7.4
	Other	5.5

		Cases percent
	Total	*100*
Region	Vojvodina	27.9
	Belgrade	19.2
	Central Serbia	52.9
	Total	*100*
Type of settlement	City	55.7
	Other	44.3
	Total	*100*

In the analyses of the data gathered in this study, methods of descriptive statistics were used. Statistical significance among all relevant categories has been calculated. In order to make this text more user friendly, short instruction for reading the tables follows.

Table 2. Instruction for the interpretation of tables



The Results of the Study

PC Penetration

Penetration of personal computers is one of the standard indicators used to describe the basic parameters of informational development of a country, i.e. a region. In Serbia, 41% of households own a PC. By regional division, there are statistically significant differences between Belgrade as the region, and Vojvodina and Central Serbia – PC penetration is highest in Belgrade, where it reaches 55%, while in Vojvodina and Central Serbia, significantly less percent

of households own a computer 36, i.e. 38%. Urban and rural areas are also significantly different: while in the urban areas, the penetration is 51%, in rural it is only 28%. Considering both regional and urban vs. rural socioeconomic differences, the pattern of PC penetration could be expected.

Chart 1. Does your household own a computer?

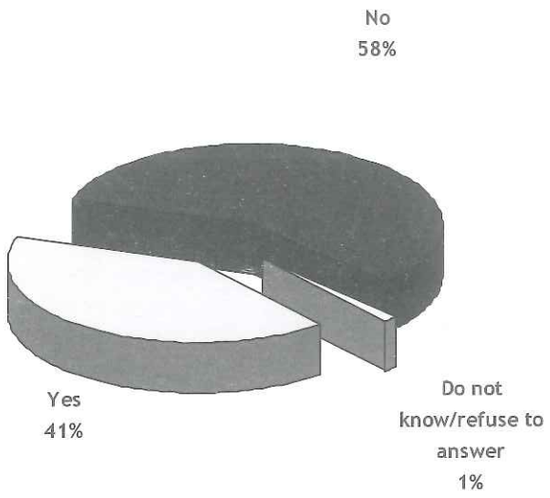


Chart 2. PC penetration – regional differences

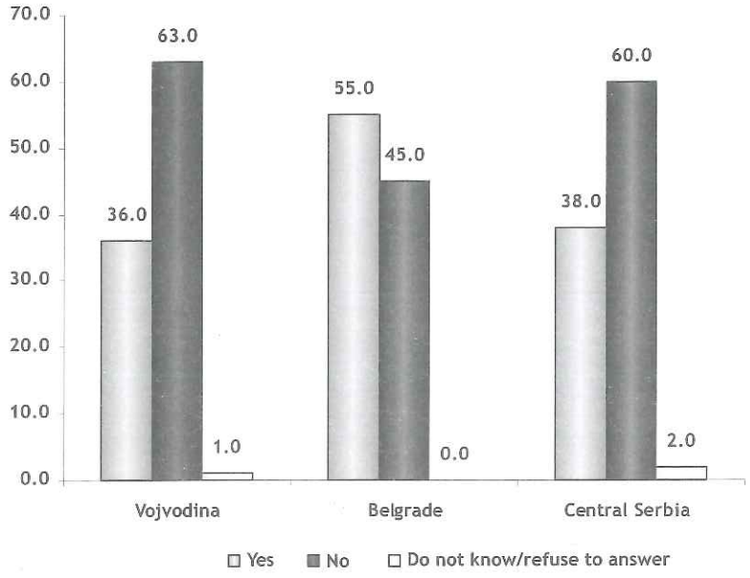


Chart 3. PC penetration – differences regarding the type of settlement

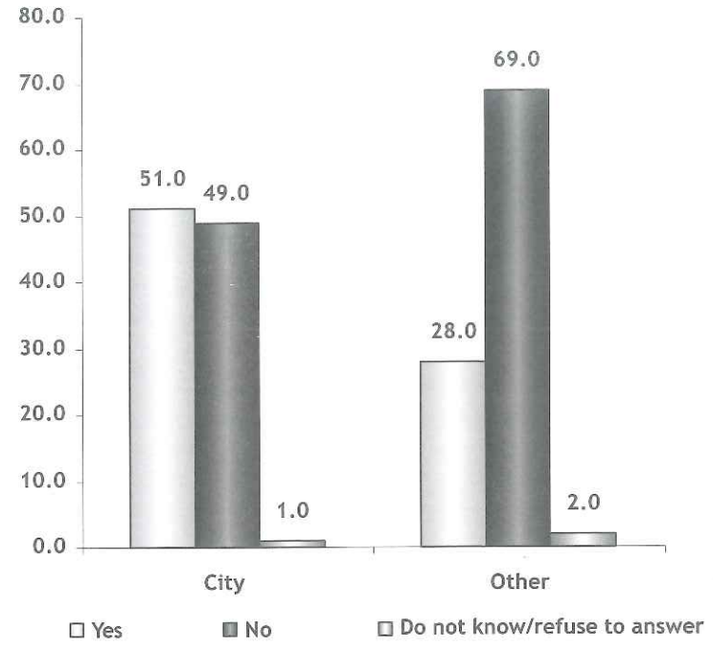


Table 3. – PC penetration in subpopulations of different economic status

	50 € or less	51–100 €	101–150 €	Over 150 €
Yes	28.0	34.0	63.0	58.0
No	71.0	66.0	51.0	42.0
Do not know / refuse to answer	1.0	0.0	0.0	0.0
Total	*100.0*	*100.0*	*100.0*	*100.0*

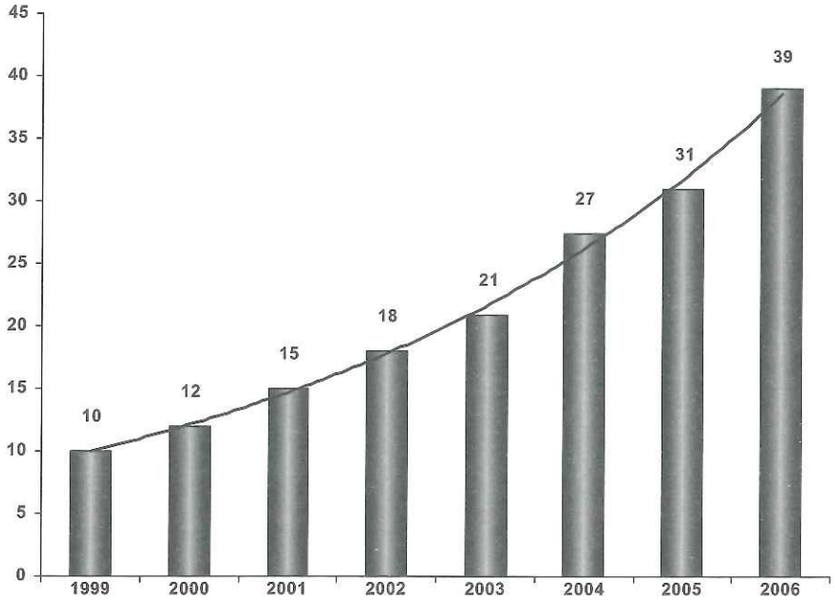
According to the data published in the "SITO 05 – Serbian IT observer" (Matijevic, 2006), local IT market lags behind in comparison not only with developed European countries but in comparison with the countries of the region as well. IT consumption per capita in 2005 was only 33 €, while for instance, in Slovenia it was 275, and in countries of Western Europe almost 700 €. Analyzing parameters influencing this situation in the IT market, the authors listed several obstacles: citizens' low life standard, inadequate state strategy on IT relevant issues, low level of economic activity (in 2005 it was only 50% of the one recorded in 1990), but also the political instability and problems in restructu-

ring of the state-owned companies. Predictions of IT market growth for 2006 suggested that the expected growth rate would be 11%, which is not enough. Even if the growth rate would remain stable at 25% per year until 2010, local IT market would still be far behind – with the expenditure of 100 € per capita, it would stand for just 12% of projected expenditure in Western countries in the same year.

The most worrying fact introduced in "Serbian IT observer" shows that for the first time since 2002 there has been less computer deliveries on the Serbian market. According to this data, introducing VAT had negative effect on computer sale, and consecutively on Serbian IT industry. Still, it is said that it influenced the reducing of the black market in computer trade.

According to the average monthly income in Serbia, which was 22.340 dinars (approximately 280 €) in October (SORS[2], 2006), typical Serbian family could afford a computer. Yet, if we consider the income in households that own a computer, we will notice that households with income below 50 € per member seldom own a PC, while it is more common in households with monthly income of more than 100 € per member. According to the data of *Strategic Marketing Research agency* (2006), the percent of households owning a computer has increased from 10%, as noted in 1999, to 39%, i.e. 41%, noted in this year research (Chart 5).

Chart 4. PC penetration in households – Serbia 1999-2006*



* *Source: SMMRI, 2006*

2 Statistical Office of the Republic of Serbia

Lets now compare the situation in our country with the situation in the countries of the region. It has to be pointed out that because the methodology of this kind of research is still the issue of dispute, the available data are heterogeneous up to certain point. For this reason in this study the relevant data most frequently would be cited from ITU - International Telecommunication Union. Presenting the penetration of personal computers in a certain country, ITU uses the number of computers per 100 inhabitants. The data presented are available for the period 2000-2004 and can be used only as the frame for monitoring the situation.

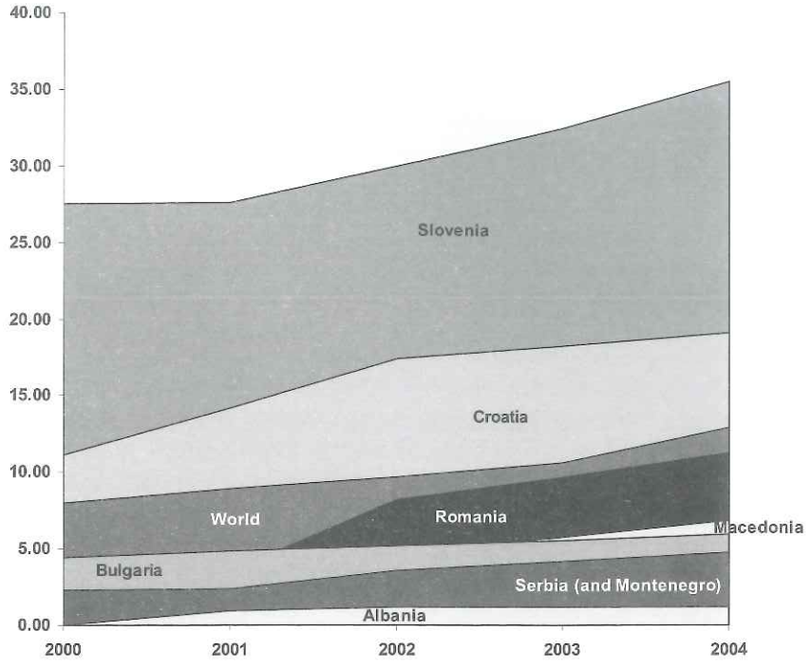
According to all available data, Slovenia is the regional leader. Serbia records systematic, but very slow growth, so the question of whether there is a serious possibility to lose the pace with the countries of the region may well arise. Namely, by the ITU estimates, there are only five computers per 100 inhabitants of Serbia, which is even worse than it is s in Macedonia. Still, we could discuss the validity of the ITU data. If we make a statistical calculation that is not entirely correct but, however, indicative, the number of computers should be higher. According to the population census in 2002, Serbia had 6 321 231 inhabitants older than 15, and average household consists approximately of three members (SORS, 2003). If we assume that every household stating to own a computer has just one computer, and that the PC penetration was 27% in 2004, we should have nine computers per 100 inhabitants of Serbia, which differs significantly from ITU estimates. By similar calculation, in 2006 we should have 13 (if the penetration rate is 39%) i.e. 13.67 computers (penetration 41%) per 100 inhabitants. Yet, since we are not entirely familiar with the methodology by which the ITU gathers the data, our calculations cannot be considered as reliable indicators that ITU figures of PC penetration in Serbia are incorrect. We should especially bare in mind that our approximations were based only on the estimates of PC penetration in households, but did not include the number of computers in companies, schools and universities, which should be especially taken into consideration.

Table 4. PC penetration – Serbia and the countries in the region (number of computers per 100 inhabitants)*

	2000	2001	2002	2003	2004
Slovenia	27.54	27.57	30.06	32.55	35.54
Croatia	11.16	14.17	17.38	18.29	19.07
Romania	3.18	3.57	8.26	9.69	11.30
Macedonia	...	3.52	4.55	5.66	6.78
Bulgaria	4.43	4.82	5.16	5.54	5.94
Serbia (and Montenegro)	2.26	2.34	3.57	4.13	4.77
Albania	...	0.97	1.17	...	...
World	*7.97*	*8.93*	*9.65*	*10.59*	*12.89*

**Source: ITU, www.itu.int. There are no data for Macedonia (2000) and Albania (2000, 2003 and 2004). No estimates are given for Bosnia and Herzegovina by ITU.*

Chart 5. PC penetration – Serbia and the countries of the region (number of computers per 100 inhabitants)*



** Source: ITU, 2000-2004. Data missing for Macedonia and Albania are given as the approximations according to previous years. For Bosnia and Herzegovina thee are no available data.*

Internet Penetration

Internet Penetration in Serbian Households

Regardless the fact from where they access Internet, in 33% of Serbian households at least one member uses it. There are slightly less households (about 27%) whose members have Internet access from home. If observed regionally, the highest penetration rate is evident Belgrade (at least one member uses the Internet in 53% of households regardless the place of access, and in 44% of households connecting from home), while Vojvodina and Central Serbia have significantly lower rates of penetration (Chart 7). There is a similar tendency if we compare the urban and rural areas (Chart 8).

Chart 6. Percent of households where at least one member uses the Internet

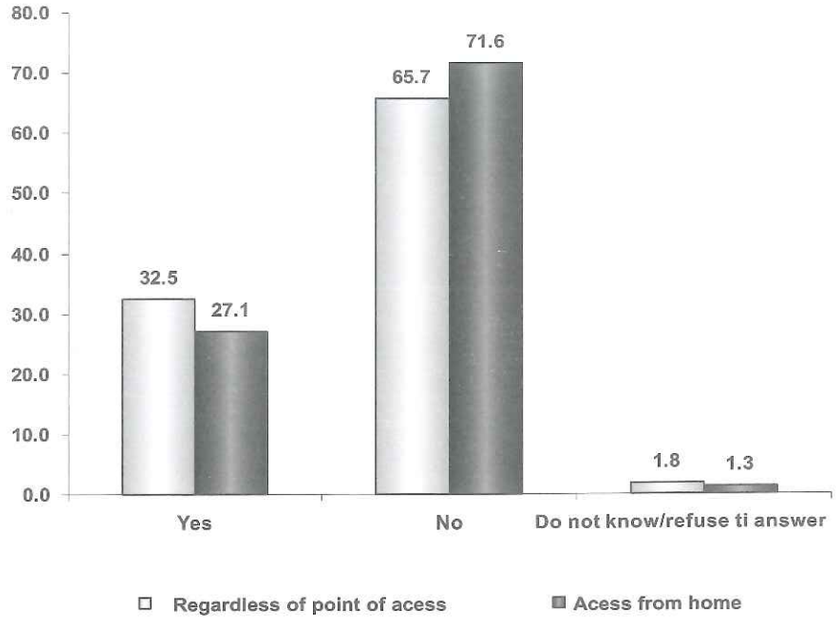


Chart 7. Percent of households where at least one member uses the Internet – regional differences

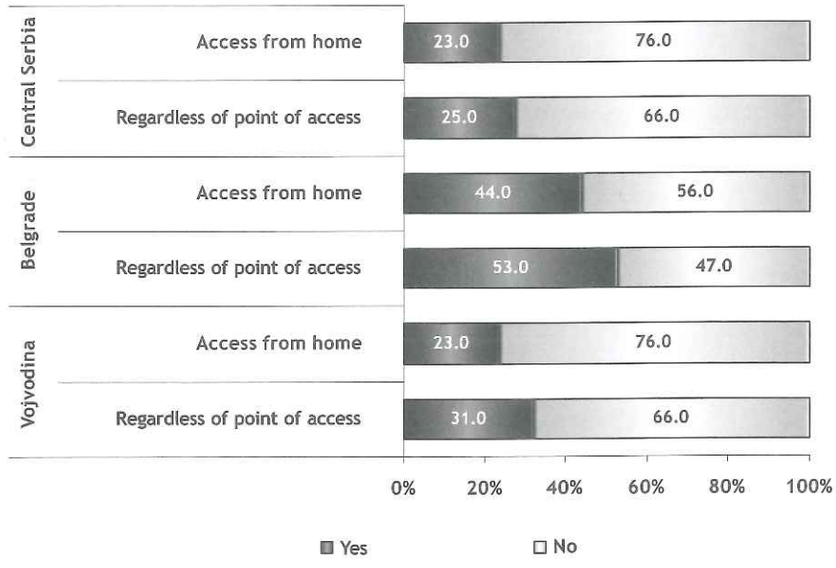
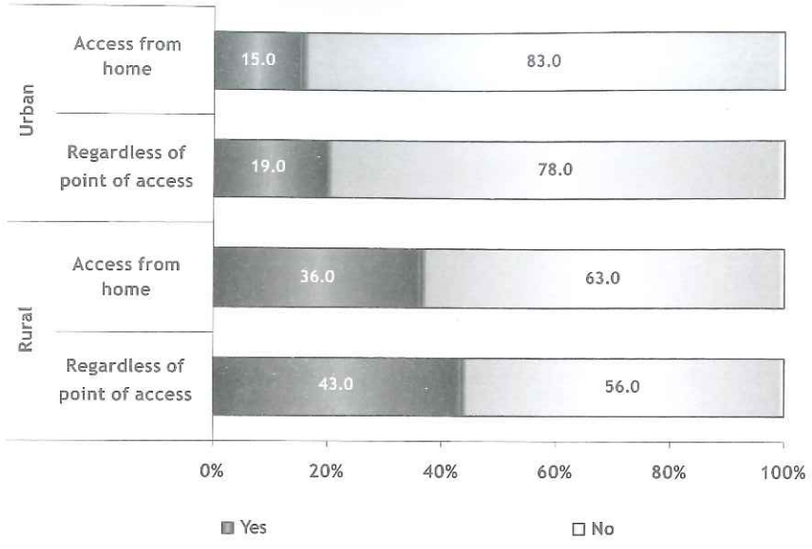


Chart 8. Percent of households where at least one member uses the Internet – differences according to the type of settlement



In comparison to the households with monthly income lower than 50 € per member, the rates of Internet penetration are significantly ($p<0.05$) higher in all other households. The probability that some household member uses Internet (regardless the place of access) is 3,5 times higher in households with income above 150 € per member (53%) than it is the case with the ones whose income does not surpass 50 € per member (16%). This wide gap between subpopulations of different economic status clearly depicts the vividness and intensity of the digital divide in Serbia. It is important to note that we cannot expect that the digital divide, as deep as in this case, could be diminished by simple increase in number of Internet users – numerous data and the experiences of other countries suggest that, and we will discuss it later on in this paper (UNCTAD, 2006).

Table 5. Percent of households where at least one member uses the Internet regardless the place of access (home, work, etc.) – subpopulations of different economic status

	50 € or less	51-100 €	101-150 €	Over 150 €
Yes	16.0	24.0	43.0	53.0
No	81.0	76.0	57.0	47.0
Do not know/refuse to answer	3.0	0.0	0.0	0.0
Total	*100.0*	*100.0*	*100.0*	*100.0*

Table 6. Percent of households where users have home access – subpopulations of different economic status

	50 € or less	51-100 €	101-150 €	Over 150 €
Yes	11.0	19.0	37.0	46.0
No	88.0	81.0	63.0	53.0
Do not know/refuse to answer	1.0	0.0	0.0	1.0
Total	*100.0*	*100.0*	*100.0*	*100.0*

Internet Penetration in Serbian Population

In population of Serbia, the Internet penetration is around 24% (Chart 9). According to the data form the last population census (SORS, 2003), this data suggests that we could speak about 1.500.000 internet users in Serbia. Yet, if we use the criteria that are stricter than the respondents' claiming they use the Internet as parameters for calculating the number of users, this percent is slightly lower. Namely, there are about 23% of users going online for more than three months already, or, more precisely, using it at least once in the previous three months (Table 7). If we use the measures recognized in the document of Partnership on Measuring ICT for Development (2005), there are 23.9% users who had accessed Internet at least once during the previous year.

Chart 9. Internet penetration in Serbia (regardless of the time of using the Internet previously)

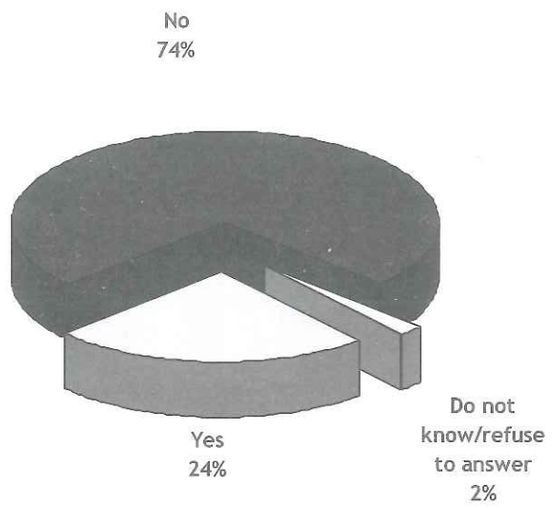
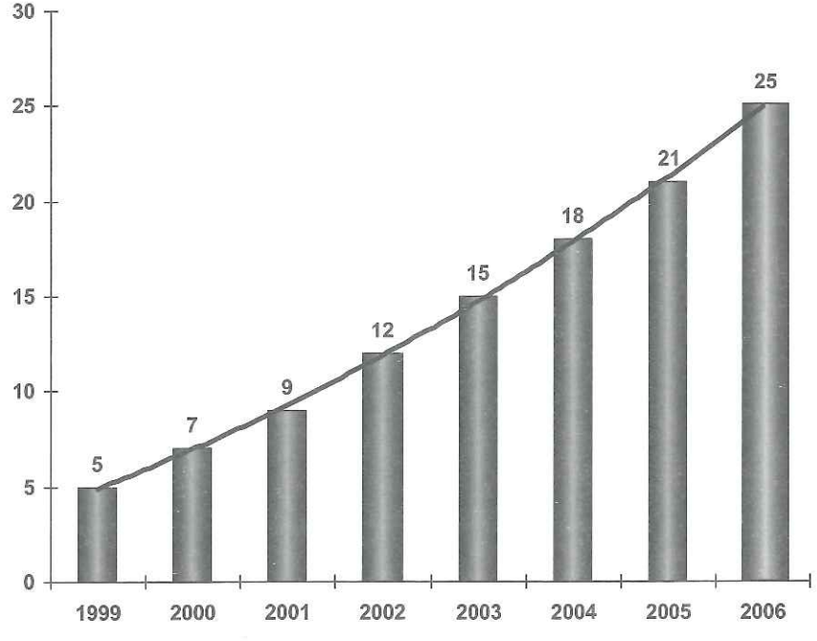


Table 7. Internet penetration in Serbia (use Internet longer than three months and have used it at least once in the previous year)

	Answers percentage
Yes	22.8
No	75.3
Do not know/refuse to answer	1.9
Total	*100.0*

During 1999-2006, according to Strategic Marketing Research agency (SMMRI, 2006), the rate of Internet penetration has grown from 5% to 25%. If we compare the growth rate with the other countries situation during this period, we will notice that the trend of fast initial growth in number of Internet users is normal – with originally very few users, even very small increase in number of users leads to multiplication of total number of people online by several times. Therefore, according to the UN report (UNCTAD, 2006) in countries of South Eastern Europe and former Soviet Union (as a whole) the number of users has increased five times in period 2001–2005, which shows that Serbia is beneath this level to some point.[1]

Chart 10. Internet penetration - Serbia 1999-2006*



Source: SMMRI, 2006

1 These countries were used as referent regarding their regional importance for Serbia, similar economic and transitional problems, as well as the relatively low rate of penetration.

According to ITU data, the countries with highest Internet penetration in 2005 were Iceland, then Sweden and Australia. Compared to the countries of the region, according to ITU figures, Serbia was doing better just than Macedonia. However, these data do not fully correspond to other sources one can find about the countries in question[2], as well as with the data we have for Serbia. Therefore, we will also refer to additional sources of information.

Table 8-. Internet penetration – countries with highest penetration, regional countries and Serbia- ITU, 2005

	Total number of host computers	Number of host computers per 10 000 citizens	Number of Internet users per 100 citizens
Iceland	*139,427*	*4,758.60*	87.76
Sweden	*1,321,676*	*1,466,67*	75.46
Australia	*3,939,321*	*1,978,27*	70.40
Republic Korea	*5,433,591*	*1,130,06*	68.35
Luxembourg	*51,649*	*1,125,25*	67.74
USA	*195,138,696*	*6,645,16*	63.00
Finland	*1,155,427*	*2,215,16*	63.00
Great Britain	*4,173,453*	*697,90*	62.88
Canada	*3,562,482*	*1,110,85*	62.36
Holland	*5,410,760*	*3,334,42*	61.63
Slovenia	*53,421*	*269,67*	55.41
Croatia	*34,695*	*78,57*	31.88
Romania	*49,077*	*22,64*	20.76
Bosnia and Herzegovina	*8,393*	*21,69*	20.64
Bulgaria	*65,759*	*84,73*	20.60
Serbia	*27,578*	*33,83*	18.61
Macedonia	*3,595*	*17,71*	7.86
WORLD	*267,541,177*	*421,63*	*15.17*

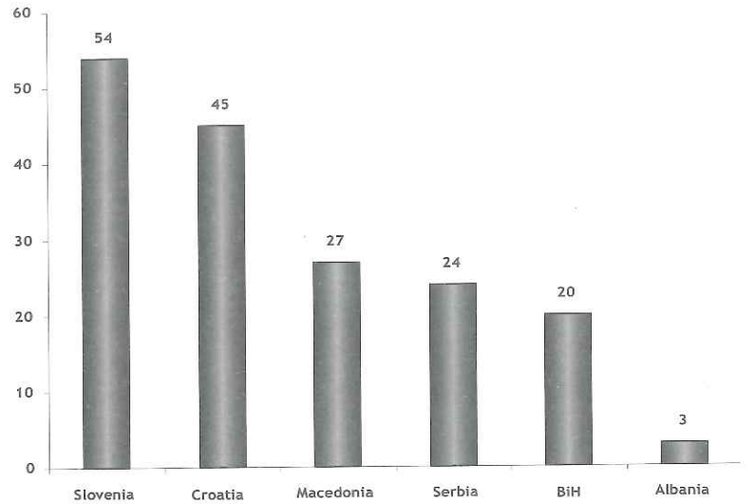
According to data available from marketing research agencies[3], Slovenia has the highest penetration rate (54%). It is followed by Croatia with 45%, and than there is Macedonia with 27% and Serbia with 24% (figure from this research). Compared to other sources, the noteworthy change we see in the case of Macedonia. The significant growth of Internet users in this country is due to the realization of the USAID project *Macedonia Connects*. In this project, 550 schools, universities, science institutes, dormitories and other institutions have received broadband Internet access, and Macedonia became the first country in the world whose territory is covered in total by wireless Internet. Initiative was nation-wide and it had a wide support of Macedonian government as well

2 UCLA study brought different figures for the States claiming the number of users to be significantly higher - ¾ total population should be online (Cole, 2003).

3 We do not have data for Bulgaria and Romania.

as the numerous companies from Macedonia. The number of Internet users has increased first of all due to the improvement in quality and lowering the price of Internet access, which consecutively enabled the integration of modern technologies into spheres crucial for further progress and development of the country – i.e. education, economy and state institutions (USAID, 2006). The realization of similar project has recently started in Montenegro (BIT, 2006), so in the following period it would be interesting to observe how the picture of this country will change. Namely, the only available data for Internet penetration in Montenegro, which are not after all completely reliable, are the ones stated by "Njeguskij Fund"[4] and Institute for strategic studies and prognosis – ISSP (2006). According to the first source, Internet penetration in Montenegro is approximately 17%. On the other hand, although ISSP does not state the precise information about the number of Internet users, it is possible to make a calculation by which 22% of citizens[5] have home access to the Internet.

Chart 11. Internet penetration in Serbia and regional countries – 2006*



Source:
- *Slovenia– MOSS, 2006*
- *Croatia – GFK, 2006*
- *Macedonia – SMMRI, 2006b*
- *Bosnia and Herzegovina – INSITES, 2006*
- *Albania – ITU, 2005*

According to: Httpool Internet Marketing, http://www2.httpool.com/en/advertisers.cp2?cid=33CD0600-B7A7-521E-8F7C-E5882E025CE0&linkid=advertisers

4 "Njeguskij Fund", http://www.njegoskij.org/menu_today/menu_countryProfile.php

5 This figure is generated acording to the ISPP data that 38% of households in Montenegro own a computer, and 58% of them have home access. Our estimate cannot be reliable indicator of Internet penetration in Montenegro, but could stand as a relevant approximation.

As stated before, in Serbia we can notice immense regional and differences regarding the type of settlement: penetration is statistically higher in Belgrade (42%) than in Vojvodina (19%) and central Serbia (about 21%) – Chart 12, as well as in urban compared to rural areas - about 34% vs. 12% - Table 10.

Chart 12. Internet penetration in Serbia - regional differences

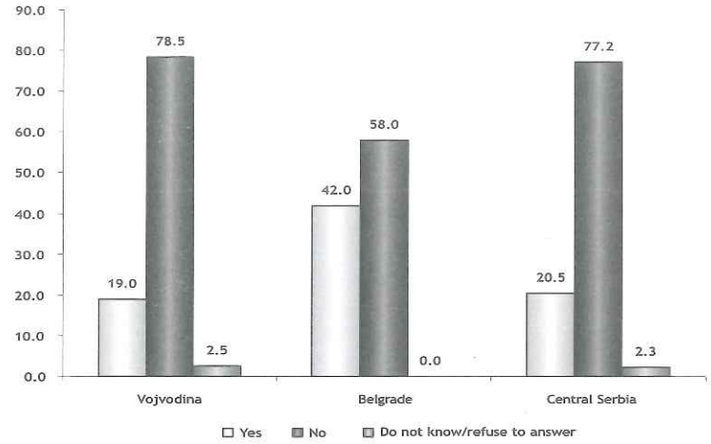


Table 10. Internet penetration in Serbia – differences according to type of settlement

	City	Other
Yes	33.6	12.4
No	65.4	84.6
Do not know/Refuse to answer	1.1	3.0
Total	*100.0*	*100.0*

Wide digital gap is obvious regarding the Internet penetration in subpopulations defined by sex, age and educational status. Namely, men are more frequently among the Internet users (31%) then women (around 18%), younger people (15 - 29 years of age, 48%), as well as pupils and students, more than citizens from other age categories, while least of those with elementary school (just 1.4%) are online. In this way, Internet in Serbia is still a privilege and need of a, in a demographic sense, very narrow population group.

If we compare those figures with the ones given by the already mentioned marketing research agencies in regional countries, we will notice that the stated differences are also interwoven in the image of information society, but the differences in number of online men and women are significantly smaller, in some areas even negligible (Chart 16).[6]

In United Nations report (UNCTAD, 2006) it is stated that in the OECD countries, except Finland and USA, the number of male Internet users is gre-

6 Percentage of men and women is in this case calculated compared to the total number of users, and not the number of men, i.e. women separately.

ater than number of female Internet users. In the European Union, there are 49% of users among men, and 38% among women.

Chart 13. Internet penetration in Serbia - men and women

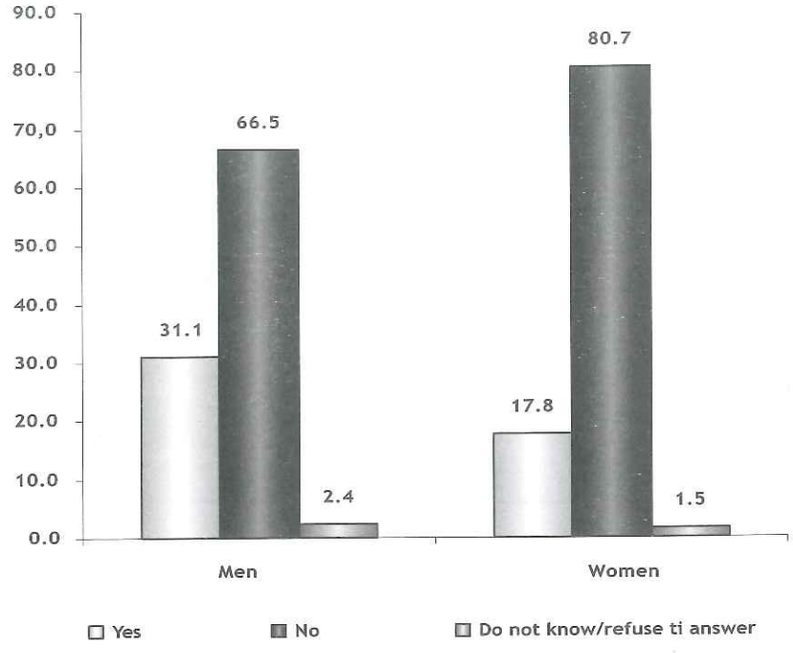


Chart 14. Internet penetration in Serbia – age differences

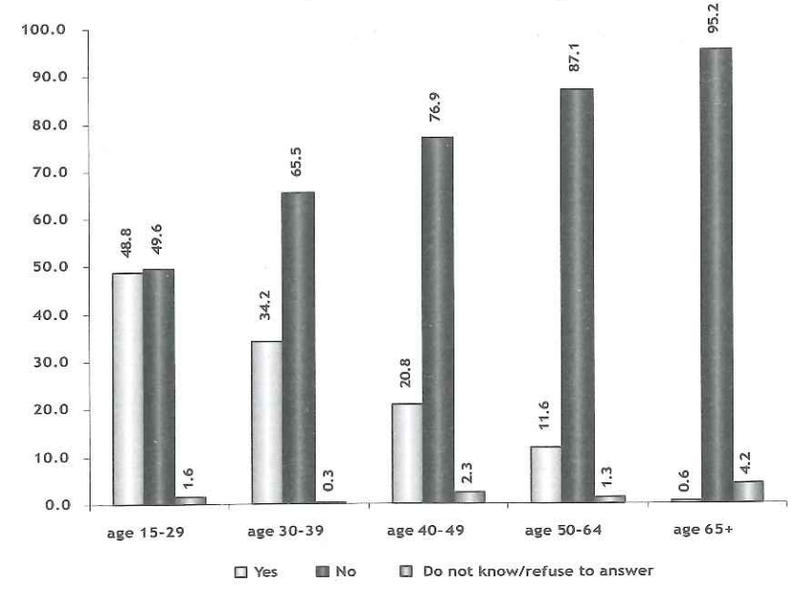


Chart 15. Internet penetration in Serbia – educational differences

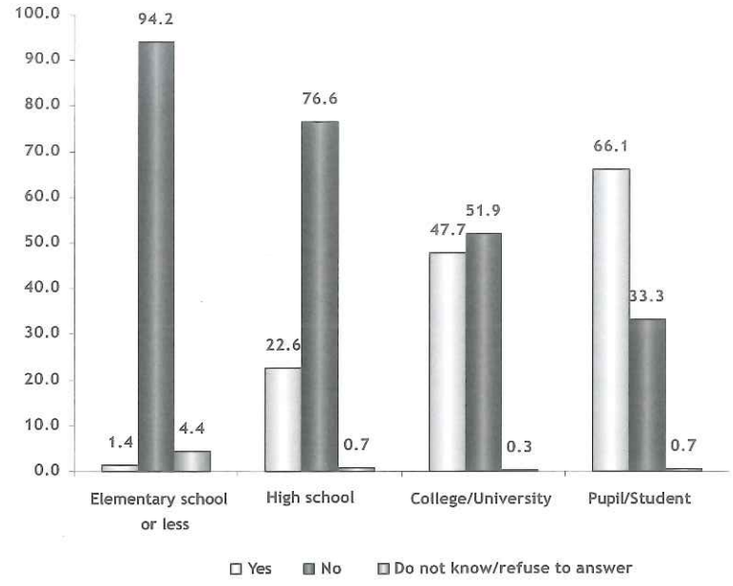
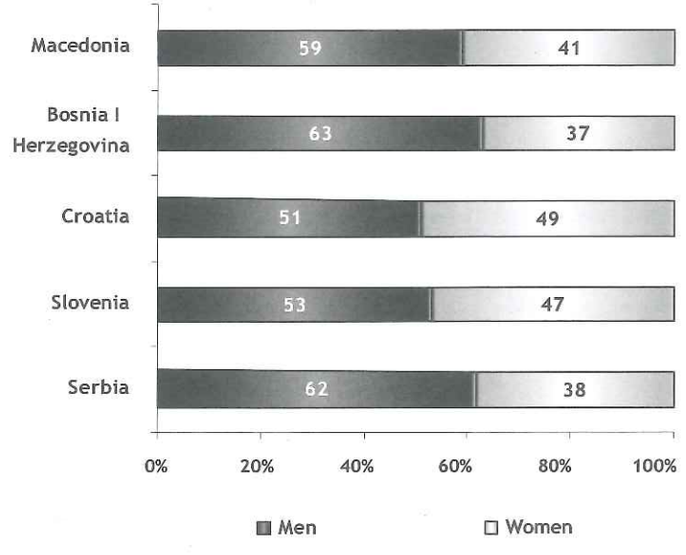


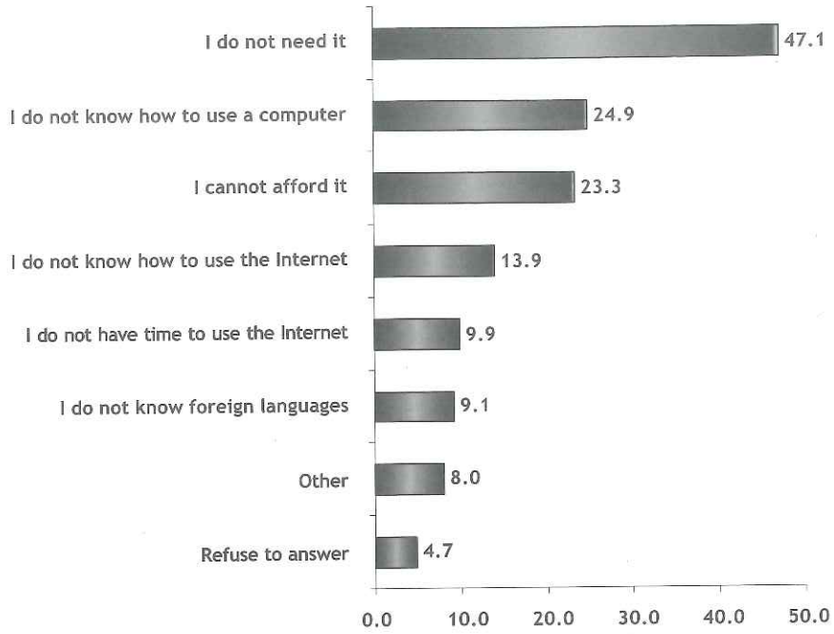
Chart 16. Men and women online – differences in the countries of Former Yugoslavia[7]



7 The data for Serbia are presented this time as percent of men and women Internet users regarding the total number of users so that the data would be comparable to the regional countries.

If we consider what citizens of Serbia state as the answer to the question what is the reason for their Internet non-use, we first see that 47.1%, just slightly less than half of them, believe they do not need the Internet. Around a quarter of non-users state they are not computer literate, or that they cannot afford Internet.

Chart 17. Reasons of non-use



If we observe the state of affairs in specific subpopulations among Internet non-users, we will notice several significant changes. Regionally, we notice that, compared to Belgrade, among citizens of Central Serbia there more of those who believe that they do not need the Internet, and those who are computer illiterate and do not speak foreign languages. Citizens of rural areas are often computer illiterate and greater number of women than men as the Internet use obstacle state the fact they do not know how to use a computer.

Table 11. Reasons of non-use – regional differences

	Vojvodina (%)	Belgrade (%)	Central Serbia (%)
I do not need Internet	50.0	41.0	48.0
I do not know how to use a computer	23.0	17.0	28.0

	Vojvodina (%)	Belgrade (%)	Central Serbia (%)
I cannot afford it	22.0	25.0	24.0
I do not know how to use the Internet	12.0	15.0	14.0
I do not have time to use the Internet	9.0	11.0	10.0
I do not know foreign languages	7.0	5.0	11.0
Other	6.0	11.0	8.0
Refuse to answer	4.0	5.0	5.0
Base	*206*	*129*	*446*

Table 12. Reasons of non-use –differences regarding the type of settlement

	City	Other
I do not need Internet	47.0	47.0
I do not know how to use a computer	18.0	32.0
I cannot afford it	25.0	21.0
I do not know how to use the Internet	12.0	16.0
I do not have time to use the Internet	10.0	10.0
I do not know foreign languages	8.0	10.0
Other	8.0	8.0
Refuse to answer	6.0	4.0
Base	*389*	*391*

Table 13. Reasons of non-use – differences between men and women

	Men (%)	Women (%)
I do not need Internet	46.0	48.0
I do not know how to use a computer	23.0	26.0
I cannot afford it	26.0	22.0
I do not know how to use the Internet	11.0	16.0
I do not have time to use the Internet	11.0	9.0
I do not know foreign languages	8.0	10.0
Other	9.0	7.0
Refuse to answer	6.0	4.0
Base	*353*	*427*

A number of indicative differences are obvious in the subpopulations of non-users defined by age. The youngest non-users (15-29 years of age), compared to other age categories included in this research, least frequently believe they do not need the Internet (21%). Non-users older than 40 more often express both the lack of need for Internet, and the lack of necessary knowledge for using the computer than it is the case in the youngest age group. Citizens of

Serbia older than 65 years of age have the slightest need for using the Internet – 70% of them say they do not need it. People of 30–39 years of age have the least time for Internet – one possible reason might be in the fact that in this group there are more young couples with children than in other age groups. Compared to the youngest citizens, non-users older than 50 less frequently see their financial situation as an obstacle for using the Internet.

Regarding the educational level (last finished school), we also observe several important differences. People of lowest educational level (complete/ incomplete elementary school) mostly believe they do not need the Internet (63%), or state that they do not know how to use the Internet (34%).

Table 14. Reasons of non-use – age differences

	15–29	30–39	40–49	50–64	65+
I do not need Internet	21.0	27.0	48.0	53.0	70.0
I do not know how to use a computer	17.0	18.0	27.0	26.0	32.0
I cannot afford it	37.0	26.0	28.0	19.0	13.0
I do not know how to use the Internet	16.0	10.0	14.0	14.0	15.0
I do not have time to use the Internet	10.0	21.0	13.0	7.0	5.0
I do not know foreign languages	6.0	8.0	10.0	11.0	9.0
Other	9.0	12.0	8.0	10.0	3.0
Refuse to answer	7.0	4.0	4.0	4.0	4.0
Base	*143*	*104*	*140*	*202*	*192*

Table 15. Reasons of non-use – educational differences

	Elementary school or lower	Secondary school	Higher school/ University	Pupil/ Student
I do not need Internet	63.0	37.0	39.0	24.0
I do not know how to use a computer	34.0	21.0	15.0	12.0
I cannot afford it	19.0	26.0	19.0	36.0
I do not know how to use the Internet	16.0	11.0	16.0	18.0
I do not have time to use the Internet	8.0	10.0	20.0	5.0
I do not know foreign languages	12.0	8.0	3.0	5.0

	Elementary school or lower	Secondary school	Higher school/ University	Pupil/ Student
Other	4.0	11.0	7.0	11.0
Refuse to answer	4.0	4.0	8.0	9.0
Base	*322*	*325*	*70*	*64*

The stated data inarguably point out the directions for further interventions aimed at increasing the number of users. Certain lack of need for internet evident among non-users in Serbia is something that should be concerned. This fact in a quite clear manner indicates that Serbia has not still developed the potentials of information society – to be interested in internet usage, citizens must be able to use it's benefits: from carrying out daily administrative affairs to doing business online. Without understanding the usefulness of Internet in every day life, we cannot talk about serious increase of the rate of Internet penetration.

As the consequence of the fact that the basic reason for the Internet non-use is the lack of need, more than a half of users (52.%) do not intend to start using Internet at all. According to the available data, it is expected that a number of users of Internet in Belgrade would grow faster than in other Serbian regions (21% intend to start using Internet by the end of 2006) for a while. The fact that significantly less of Belgrade citizens (39%) do not intend to start using Internet in the future than it is the case in Vojvodina or Central Serbia, speaks also in favour of such conclusion.

Chart 18. Intention to start using Internet until the end of 2006

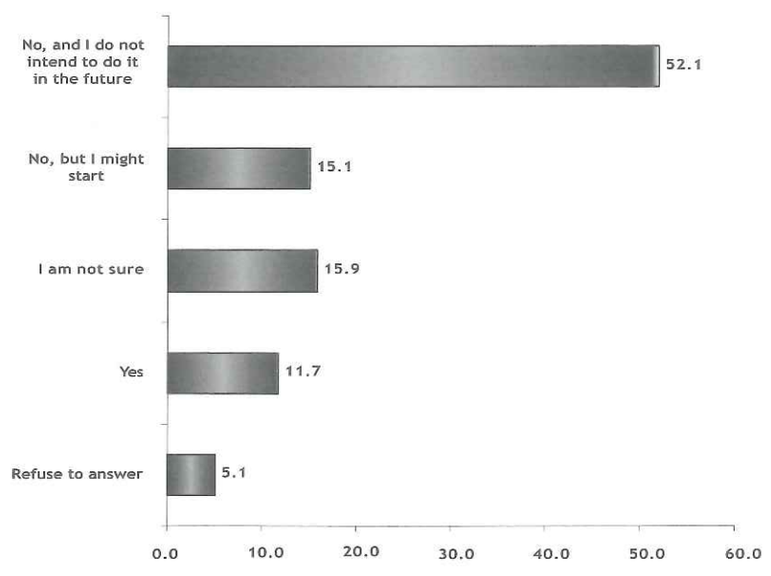


Table 16. Intention to start using Internet until the end of 2006 – regional differences

	Vojvodina	Belgrade	Central Serbia
Yes	16.0	21.0	7.0
I am not sure	10.0	20.0	17.0
No, but I might start	14.0	17.0	15.0
No, and I do not intend to do it in the future	57.0	39.0	54.0
Refuse to answer	3.0	2.0	7.0
Base	*206*	*129*	*446*

Table 17. Intention to start using Internet until the end of 2006 – differences regarding the type of settlement

	City	Other
Yes	17.0	7.0
I am not sure	14.0	18.0
No, but I might start	14.0	16.0
No, and I do not intend to do it in the future	51.0	53.0
Refuse to answer	5.0	6.0
Base	*389*	*391*

There is no essential difference among men and women concerning their intention to connect, which suggests that in the future we can expect the number of men and women going online to increase in a steady pace, so that the wide digital gap between these two populations will remain at the same level for a while. The lack of need for Internet use is significantly present in the population older than 50, and the non-users of 40-49 years of age (48%). Albeit the infrastructural problems, this vivid absence of intention for Internet use will definitely limit the increase of Internet penetration in the following period.

Table 18. Intention to start using Internet until the end of 2006 – differences between men and women

	Men	Women
Yes	14.0	10.0
I am not sure	16.0	16.0
No, but I might start	16.0	15.0
No, and I do not intend to do it in the future	50.0	54.0
Refuse to answer	5.0	5.0
Base	*353*	*427*

Table 19. Intention to start using Internet until the end of 2006 – age differences

	15–29	30–39	40–49	50–64	65+
Yes	30.0	12.0	15.0	7.0	0.0
I am not sure	32.0	32.0	14.0	8.0	6.0
No, but I might start	27.0	24.0	20.0	12.0	1.0
No, and I do not intend to do it in the future	7.0	28.0	48.0	67.0	87.0
Refuse to answer	5.0	4.0	4.0	6.0	6.0
Base	*143*	*104*	*140*	*202*	*192*

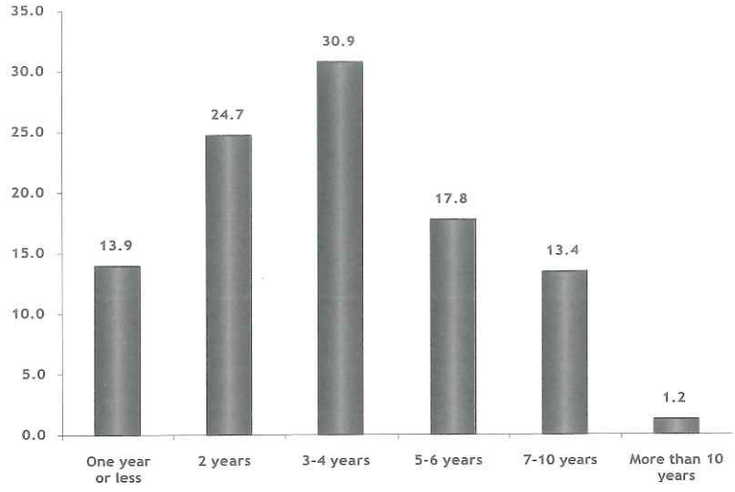
Table 20. Intention to start using Internet until the end of 2006 – educational differences

	Elementary school or less	Secondary school	Higher school/ University	Pupil/ Student
Yes	2.0	14.0	20.0	39.0
I am not sure	7.0	21.0	22.0	30.0
No, but I might start	8.0	21.0	15.0	22.0
No, and I do not intend to do it in the future	78.0	37.0	42.0	7.0
Refuse to answer	6.0	6.0	2.0	3.0
Base	*322*	*325*	*70*	*64*

Basic Characteristics of Internet Use

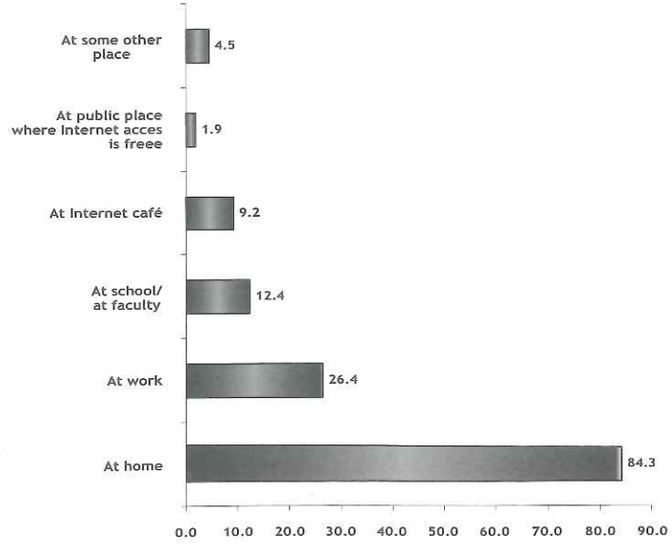
In Serbian population of Internet users there are 13.9% of those who started using the Internet in the previous year. This rate is unsatisfactory, since it suggests that the population going online will increase in a very slow pace. If increasing by 15% per year in the following four years, Internet penetration in Serbia in 2010 would reach 42%, which, for instance, is not at the level of Slovenia today, and responds to the penetration rate in Croatia.

Chart 19. How long do you use the Internet?



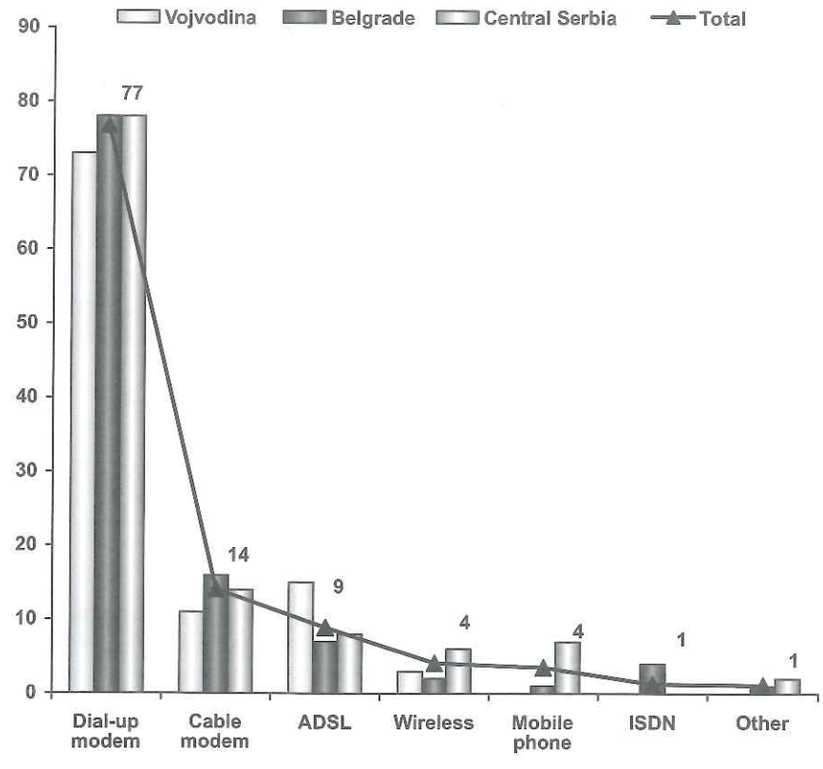
As expected, the greatest number of users access Internet from home (84.3%), and around one quarter connect from work. Among the employed users only 10% access Internet from work, which is quite modest, but does not necessarily suggest such a low rate of Internet use in business, since in various companies not all of the employees need Internet in their activities.

Chart 20. The place of Internet access



The users in Serbia access the Internet in more than 70% of cases using the standard *dial-up* modem. Very few users have the broadband access. Using broadband Internet is not important only because it enables the high speed of information transfer but also because this type of access is very efficient, flexible, reliable and cheap for the developing countries that want to boost their technological progress, too. This type of access is becoming more available to users around the world – 38% of users in the world had broadband access in 2004. In OECD countries in second half of 2005, the number of users with this type of access has increased for 15% - the leaders are Iceland and the Republic Korea, where the total broadband penetration is around 25%, and at the back of this list are Slovakia, Mexico, Turkey and Greece, with penetration lower than 3%. USA, with 16% of users with broadband access is behind most of the West European countries, and even some countries of Asian continent (UNCTAD, 2006).

Chart 21. Type of Internet access



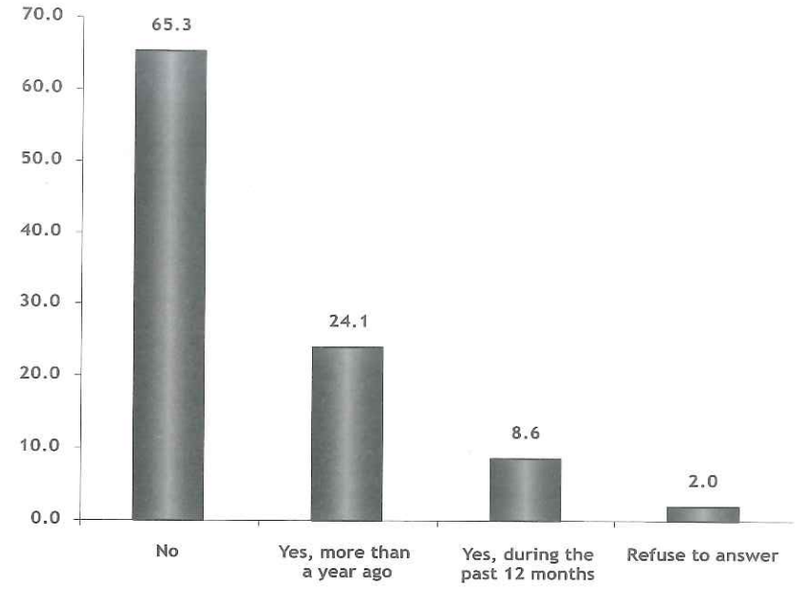
Most of their Internet time users spend while at work, which is not strange since most of them are online at the moment they turn on the computer in the office.

Table 21. The time users spend on Internet per week accessing from a specific place

		Answers percentage
Home	Less than 1 hour	14.9
	1 to 2 hours	37.0
	2-7 hours	27.3
	7-14 hours	10.5
	More than 14	9.9
	Refuse to answer	0.3
Total		100.0
Work	Less than 1 hour	22.1
	1 to 2 hours	32.1
	2-7 hours	31.0
	7-14 hours	11.5
	More than 14	3.3
Total		100.0
School/ faculty / other educational institution	Less than 1 hour	37.9
	1 to 2 hours	33.9
	7-14 hours	23.2
	More than 14	5.1
Total		100.0
From public place where access is free	1 to 2 hours	100.0
Total		100.0
From Internet cafe / some other place where access is paid for	Less than 1 hour	24.9
	1 to 2 hours	61.1
	2-7 hours	14.0
Total		100.0
Some other place	Less than 1 hour	44.2
	1 to 2 hours	32.3
	2-7 hours	23.4
Total		100.0

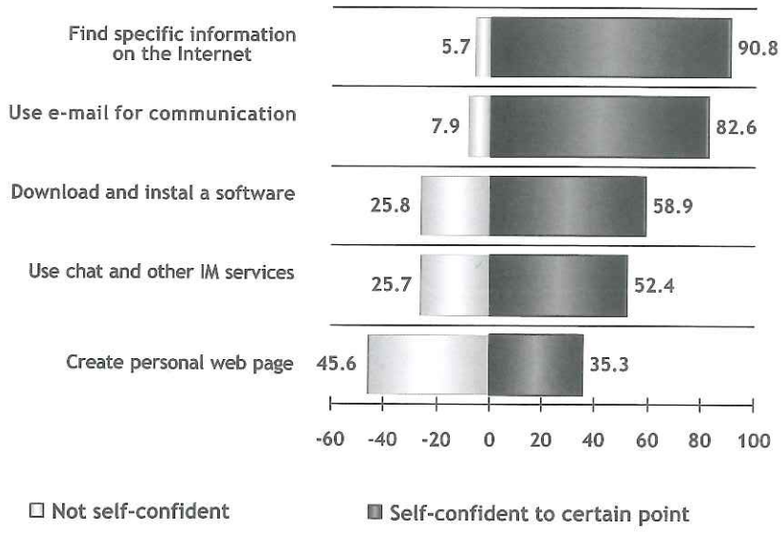
Although 39% of Internet non-users claim they do not know how to use a computer, or Internet, 33% of citizens of this country had an opportunity to participate in one of these trainings.

Chart 22. Participation of trainings for Internet and computer use



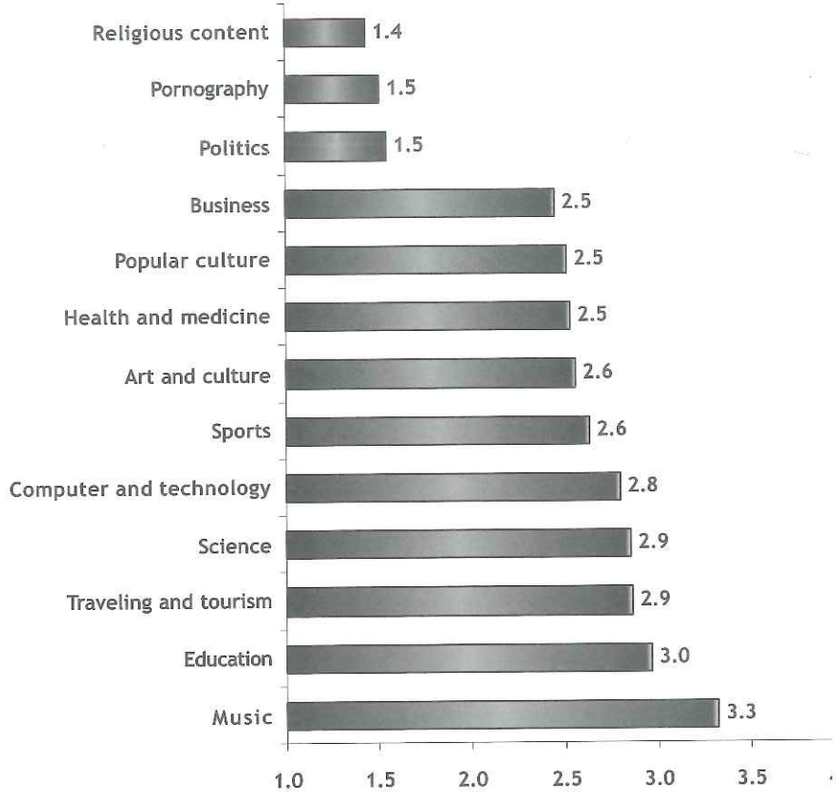
On the other hand, when asked how self-confident would they feel when looking for specific information online, and communicating by e-mail, most of users felt confident at least to certain point (about 91 and 83% of users respectively). The least of users would feel confident is they were in the situation to create a web page.

Chart 23. Feeling self-confident in specific Internet activities



Together with the way they feel competent in specific online activities goes the finding about the frequency of search for specific online content. Rating the frequency of search for various content (scale from 1 - almost never, to 5 - very often), the Internet users claim they mostly search music, education, travel and tourism, and then the science, computers and technology.

Chart 24. Frequency of search for specific Internet content



Conclusions and Recommendations

Concluding the analysis of presented data, we would like to emphasise several key aspects of this year findings. Namely, following the trends of Internet development in Serbia enables us to stress several fundamental problems that in following period should be dealt with in order to increase the Internet penetration rate in Serbia.

I. Low increase rate of new users as well as the predominant *dial-up* Internet connection and the high costs of more advanced types of access are a clear call for the organized social action aiming to create the terms and atmosphere for the diffusion of the Internet through all social groups. Process of liberalization of the economy, in which the state has the crucial role in protecting the vulnerable social groups, could be the solution for this problem.

II. As much as 52% of Internet non-users do not intend to become users in the future primarily due to their belief that they do not need the Internet - almost 47% of non-users opted for this. The cause of this problem is in the lack of understanding the advantages of computer use – both for doing business and carrying out daily administrative affairs. In order to change that, it is necessary to develop various electronic services, before all the ones that ease the citizens' communication with the public administration and state institutions, more precisely - it is necessary to make all relevant institutions available online. After that, the citizens must be informed and educated how to use the technologies to access those services, and the parallel process should be to develop the adequate telecommunication structure. In the end, though before all, it is necessary to preserve the security of electronic transactions by the appropriate laws.

III. Digital gap is wide in Serbia, and it is defined by several dimensions: by sex (significantly more men than women are online), place of living (higher rates of PC and Internet penetration in urban areas, especially in Belgrade compared to Vojvodina and Central Serbia), age (higher Internet penetration rate among young people, negligible penetration rate among people older than 50 years of age), economic status and education. Although a technology that has the significant potential to increase quality of citizens' life, Internet in Serbia is still unfortunately a privilege of small group of people.

IV. Information communication technologies can be a very useful and powerful tool for poverty alleviation. Although in previous years the poverty was addressed as the possession of material goods, today we talk about the limited access to both material goods and education and health care, than about the fundamental exclusion form the decision-making process and for all that – the emphasized vulnerability. Opening of numerous possibilities and increase of the potentials for vulnerable groups are the key aspects of poverty reduction. In that context, ICT gives a new perspective. The authors of *Information Economy Report* (2006) emphasise the several false beliefs about the development of Internet use and information society as means for fighting poverty.

FALSE BELIEFS about ICT and POVERTY

- → ICTs are not useful as the tools for poverty reduction
- → Efforts to use ICT for development enhance poverty reduction
- → Competitive markets will enable everyone to use ICT
- → Policies for ICT development are gender neutral
- → Increase of Internet penetration will lead to the expansion of women online

Pointing out these false beliefs, through several examples, authors tend to prove that the engagement of the countries in the development of information society is not completely efficient if it does not go further from the stimulation

of using ICT for development, and the liberalization of the economy and increasing the competitiveness on the market. Namely, the availability of ICT is not enough to help various vulnerable groups experience the benefits of use of these technologies. It is necessary for the country to make a key step to support the vulnerable groups so that they would use ICTs for improving their position.

Trying to give support to governments implementing the strategy for poverty reduction, World Bank has prepared several recommendations for incorporating the information-communication technologies in PRSP (PRSP – *Poverty Reduction Strategy Papers;* there is a team within the Serbain government dealing with PRSP issues). Yet, the range of both these recommendations and the PRSP strategies is not completely clear yet.

What is doubtless is that for serious diffusion of ICTs through various socio-demographic groups, as well as for enabling the benefits of this diffusion, it is necessary to have a multi-stakeholder approach: it is expected that the government provides the setting for the development of ICT which would reach the vulnerable groups, that the business sector contributes to the development of services and the very technologies, and that the civil sector creates and advocates the specific solutions for the benefit of the society as a whole. Thus, only the approach including all the relevant social actors can be successful.

Countries advanced in ICT development put this question in the high position in their national agenda and tried to make it an area excellence. Countries lagging behind did not have this kind of agenda. The first have therefore succeeded to move step forward – from separate and ad hoc support measures to providing the favourable setting for ICT development. USA, Singapore and Finland are those kinds of leaders, and can provide various examples of positive practice for realizing the exceptional progress and development.

In the end, it is important to add another thing. Apart from relatively low penetration rate of just 24%, which is significantly below the average of not just the EU countries, but even of the countries of the region, the number of over 1 500 000 of Internet users tells us it is a significant, unfairly neglected target group, both as voters whose choice would influence the future of Serbia and the consumers of goods and services available at the Serbian market. Strategic decision of Serbia to try to catch up the pace with the regional countries is the crucial factor that could affect both the development of IT market in Serbia and the use of existing potentials.

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Milan Sitarski[8]

Political Orientations of the Internet Users and Non-users in Serbia 2006

The Results at the Level of Entire Sample

Since the very beginning of the research of Internet usage in Serbia, political orientations of the population that accepted this new technology drew the respectable attention. Knowledge of this social group's political orientations provides one of key strategic information, important for anticipating political, economic and social aspects of Information Society development. Importance of these data emerges out of the fact that, as a rule, the Internet (alike almost all others technical innovations in the field of information and knowledge flow) is primary accepted by the social groups who are the bearers of the respectable social capital and belong to the present or future social elite. Alike the previous research, conducted in 2005, this one reached not only the Internet users, but also non-users, which provides the insight in the significant differences between these two groups regarding their political orientations. Except the Internet usage, users and non-users are also distinguished by their socio-demographic status, so they can be seen as two different social strata. Thus, we actually research political orientations as the important elements of these groups' socio-cultural features, whose differences are in general recognized as the part of wider social phenomenon, known as the Digital Divide. Difference of this research from the previous ones is that this time political orientations in wider, ideological sense are not considered, but only in the sense of electoral orientations, i.e. the attitudes towards the actors of real Serbian political scene and readiness to support any of them in the possible elections.

The research is conducted by the Strategic Marketing agency, for the needs of the Centre for Research of Information Technologies (CePIT) of the Belgrade Open School (BOS), on the sample of the 1076 subjects, in the period 22 – 27 of June 2006, on the territory of the Republic of Serbia, except in the Autonomous Province of Kosovo and Metohija. By the reached results, **48.11%** subjects expressed the explicit optioning for some political party. That percentage is very similar to the voters' turnout on the first and second round of the last Presidential elections (first round 13th of June 2004 – 47.76%, second round 27th of June – 48.36%). Such the similarity is not surprising, since in the moment of the research, the real possibility of appointing the extraordinary elections was not indicated by the key political players. Thus, it was expected that the percentage of the politically determined subjects will be similar exactly to the lowest turnout in the state level elections in Serbia in last six years (for example, turnout in the Parliamentary elections 23rd of December 2000 was 57.64%, in

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the first round of Presidential 29th of September 2002 – 55.5%, and in the Parliamentary 28th of December 2003 – 58.75%). This could mean that out of the periods of electoral campaigns only the citizens with strong and stable party identification would openly express their political (electoral) orientation. At the same time, there were **19.5%** of undecided subjects in our sample, **25.02%** of those who wouldn't vote at all, and **7.37%** who claim that they "do not know" or simply reject to provide the answers about their political preferences.

32.06% of the determined subjects opted for the Serbian Radical Party, what is similar to this party's presidential candidate Tomislav Nikolic's result in the first round 2004 (30.60% of votes), so the conclusion is that this, currently strongest parliamentary party in Serbia, slightly expanded its popularity in the Serbian electorate within the last two years. However, by the research results in June 2006, that party is not any more the strongest one, because **39.92%** of the subjects opted for the Democratic Party, what is significantly higher than its candidate Boris Tadic's (current President of Serbia) result from the first round 2004 -27.37%. This difference is for sure among the most interesting research results. The third place belongs to the Democratic Party of Serbia (the party of current Serbian Prime Minister Vojislav Kostunica) with support of **8.47%** of determined subjects, while its candidate in June 2004 Dragan Marsicanin received **13.30%** of votes, with support of all the parties gathered in Mr. Kostunica's coalitional government. By these results, the trend of DSS popularity decline at the national level is continued. Only one party more reached the support of more then 5% (that is the threshold on Serbian Parliamentary elections at the national level, except for ethnic minority parties with the threshold of 0.40%) of subjects – Socialist Party of Serbia, with **5.85%.** Its presidential candidate Ivica Dacic received 4.04% of votes two years before the research. The sum of the support to all other parties in this research is **13.71%.**

Results in the Sub-sample of the Subjects in Whose Households there are no Internet Users

Before the comparison of belonging to the household without Internet users with political orientation of the subjects, it is important to underline that by the research results these subjects are the minority only in Belgrade – **47.1%**, while in the Vojvodina Autonomous Province there are **66.4%** of them, and in the territory of Serbia out of the Provinces and Belgrade **72.6%** (in the entire sample there are **65.7%** of these subjects).

	Entire Sample	Subjects in whose households there is no Internet users
Determined	48.11%	49.85%
Undecided	19.5%	20.03%
Wouldn't vote	25.02%	23.83%
"Do not know"/ No answer	7.37%	6.29%

Since these subjects are the vast majority in the entire sample, it is not surprising that all the figures in their sub-sample are pretty close to the average values, with slightly higher percentage of determined and undecided, and lower percentage of openly declared electoral abstainers and those unwilling to give clear or any answer on electoral preferences. The support to particular political parties in this sub-sample is the following:

	Entire Sample	Subjects in whose households there is no Internet users
Democratic Party	39.92%	35.49%
Serbian Radical Party	32.06%	38.13%
Democratic Party of Serbia	8.47%	8.2%
Socialist Party of Serbia	5.85%	7.62%
Others	13.71%	10.55%

Lower popularity of Democratic Party among these subjects is expectable, as well as the higher popularity of Serbian Radical Party and Socialist Party of Serbia, and also the result of Democratic Party of Serbia which is the closest to the average at the level of entire sample. Significantly weaker popularity of all other parties in this sub-sample suggest that this category mainly include the parties which enjoy the support of young, well educated, urban and wealthy population.

Results in the Sub-sample of the Subjects in Whose Households there are the Internet Users

The percentage of subjects who live in the household with Internet users varies significantly from one to another region of Serbia. In Belgrade, there are **52.9%** of these subjects, in Vojvodina Province **31.2%**, and in the territory of Serbia out of the Provinces and Belgrade **25.1%** (**32.5%** in the entire sample).

	Entire Sample	Subjects in whose households there are Internet users
Determined	48.11%	46.16%
Undecided	19.5%	16%
Wouldn't vote	25.02%	28.62%
"Do not know"/No answer	37%	9.23%

Within this sub-sample, as expected after the analyses of findings from the previous and bigger one, we found the below – average percentage of determined and undecided subjects and higher percentage of electoral abstainers and subjects unwilling to answer our questions.

	Entire Sample	Subjects in whose households there are Internet users
Democratic Party	39.92%	50%
Serbian Radical Party	32.06%	18%
Democratic Party of Serbia	8.47%	9.34%
Socialist Party of Serbia	5.85%	1.99%
Others	13.71%	20.67%

Regarding the party preferences, expected low popularity of the Serbian Radical Party and Socialist Party of Serbia is very significant, at the similar extent as the above - average popularity of Democratic Party and other, smaller parties. Democratic Party of Serbia is again pretty close to its average popularity from the level of the entire sample.

For easier and more illustrative comparison of these results, we demonstrate it with charts for both categories of subjects, for the questions of actuality and type of political orientation and the character of electoral orientation, if the subjects we interviewed actually have it.

Chart 1. Political orientations of the subjects who have and those who do not have the Internet users in their households, Serbia (except the territory of Kosovo and Metohija Province), June 2006

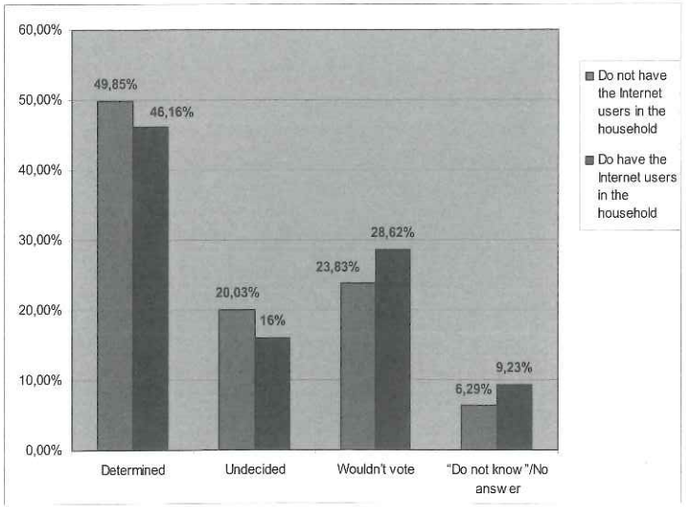
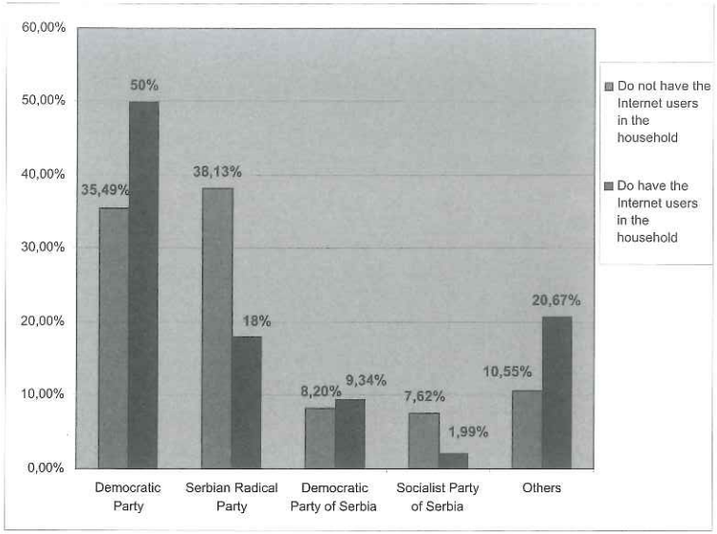


Chart 2. Electoral orientations of the subjects who have and those who do not have the Internet users in their households, Serbia (except the territory of Kosovo and Metohija Province, only determined subjects), June 2006



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The Centre for Research of Information Technologies / CePIT of the Belgrade Open School (BOS), with the support of the Olof Palme International Centre, researches internet usage and information society development in Serbia for five years already. The study "Internet Penetration in Serbia 2006" was conducted on the nationally representative sample of Serbia (without Kosovo province, which is administrated by the United Nations). The field research was conducted during June 2006.

The study brings the data on PC and Internet penetration in Serbia, the basic demographics of internet users population, the motivation and non-users intention to start using the internet by the end of a following year, as well as the basic parameters of internet usage (place of access, type of connection, years of internet usage and some characteristics of internet behaviour). These facts are very important since they point out the current state of art which is the starting point in all discussions about information society development in Serbia.

Special part of the study is dedicated to political orientations of Internet users and non-users in serbia.

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