



**Center for Applied Research and Analysis**  
Crnogorskih serdara St., Lamela C, Podgorica, Montenegro  
Tel/Fax: + 381 81/ 634 338, 634 329  
E-mail: [caramn@cg.yu](mailto:caramn@cg.yu)

**Survey Managed by:**

PhD Petar Ivanovic, Executive Director of the ISSP

**Survey Coordinator:**

Milica Dakovic

**Data Analysts:**

Ana Stojanovic, Milica Dakovic, Gordana Radojevic, MSc Jelena Pavicevic, Marko Calasan

**Data Entry and Processing:**

Ana Stojanovic, Milica Dakovic, Gordana Radojevic, MSc Jelena Pavicevic, Marko Calasan

**Surveyors:**

Milica Dakovic, Marko Calasan, Natasa Masonicic, Anja Vrandecic, Ivana Vojinovic, Dragana Jovanovic, Ivana Latkovic, Milanka Kruta, Marijo Susa, Luka Djonovic, Jadranko Maric, Tanja Beljkas, Branislav Miladinovic



## TABLE OF CONTENTS

GRAPHS AND TABLES.....	2
ACKNOWLEDGEMENT.....	4
PURPOSE OF SURVEY .....	5
SAMPLE REFERENCES .....	6
METHODOLOGY .....	7
CONTENTS.....	9
COMPUTERS AND INTERNET IN HOUSEHOLDS .....	11
COMPUTERS AND THE INTERNET IN ENTERPRISE .....	15
COMPUTERS AND INTERNET IN ICT ENTERPRISES .....	20
SURVEY ON COMPUTER AND INTERNET USAGE IN HOUSEHOLDS.....	24
<b>COMPUTERS IN HOUSEHOLD .....</b>	<b>25</b>
<b>HARDWARE AND SOFTWARE .....</b>	<b>30</b>
<b>INTERNET.....</b>	<b>35</b>
<b>INFORMATION SOCIETY DEVELOPMENT FROM THE HOUSEHOLD VIEWPOINT .....</b>	<b>39</b>
SURVEY ON COMPUTER AND INTERNET USAGE IN ENTERPRISES .....	41
<b>BASIC QUESTIONS.....</b>	<b>42</b>
<b>EMPLOYEE'S EDUCATION .....</b>	<b>53</b>
<b>INTERNET.....</b>	<b>57</b>
<b>WEB SITE .....</b>	<b>61</b>
<b>INFORMATION SOCIETY DEVELOPMENT FROM THE ENTEPPRISE VIEWPOINT.....</b>	<b>63</b>
SURVEY ON COMPUTER AND INTERNET USAGE IN ICT ENTERPRISES .....	69
<b>BASIC QUESTIONS.....</b>	<b>70</b>
<b>EMPLOYEES .....</b>	<b>72</b>
<b>INTERNET.....</b>	<b>76</b>
<b>INFORMATION SOCIETY DEVELOPMENT FROM THE ICT ENTERPRISE VIEWPOINT .....</b>	<b>78</b>
ICT INDICATORS.....	83
CONCLUSIONS .....	85
- ANNEX - .....	86

---

**GRAPHS AND TABLES**


---

**GRAPHS**

- Graph 1.** *Household structure by region*  
**Graph 2.** *Number of household members*  
**Graph 3.** *Average monthly salary (%)*  
**Graph 4.** *Examinee profession*  
**Graph 5.** *Structure of enterprises by region*  
**Graph 6.** *Number of employees*  
**Graph 7.** *Annual return*  
**Graph 8.** *Structure of ICT enterprises by region*  
**Graph 9.** *Year of establishing*  
**Graph 10.** *Annual return of ICT enterprise*  
**Graph 11.** *Who most often uses computer in household?*  
**Graph 12.** *Knowledge of terms*  
**Graph 13.** *Where you learnt to use a computer?*  
**Graph 14.** *Number of computers in household*  
**Graph 15.** *Where computer was purchased?*  
**Graph 16.** *Which type of computer do you own?*  
**Graph 17.** *Computer equipment*  
**Graph 18.** *Most used programs*  
**Graph 19.** *Operational systems*  
**Graph 20.** *Purposes the Internet is mostly used for?*  
**Graph 21.** *Reasons for not having an Internet connection*  
**Graph 22.** *Who is responsible for development of the information society in Montenegro?*  
**Graph 23.** *Computer equipment*  
**Graph 24.** *Average resources used for computer and equipment purchasing in 2004*  
**Graph 25.** *Type of operating system most commonly used in the company*  
**Graph 26.** *Most commonly used programs and applications*  
**Graph 27.** *What purposes computer is used for in enterprise?*  
**Graph 28.** *Are you preparing for the software legalization?*  
**Graph 29.** *Enterprises in which computers are purchased*  
**Graph 30.** *Where you have computers and equipment maintained?*  
**Graph 31.** *How much enterprise efficiency will decrease if computers are not in use*  
**Graph 32.** *Planned amount of funds invested for the procurement of computers and computer equipment purchases in 2005*  
  
**Graph 33.** *Number of employees that use a computer*  
**Graph 34.** *Share of employees-computer users related with total number of employees*  
**Graph 35.** *Ways of educating employee's in computer usage*  
**Graph 36.** *How many resources the enterprise invested in ICT education in 2004?*  
**Graph 37.** *What purpose is the computer used for?*  
**Graph 38.** *How often you use the Internet?*  
**Graph 39.** *How many employees in the company use the Internet?*  
**Graph 40.** *Reason for not using the Internet*  
**Graph 41.** *How many resources are employed in web-site creation?*  
**Graph 42.** *Average planned funds for the maintenance of the web site in 2005*  
**Graph 43.** *How do you rate the Law on Public Procurement?*  
**Graph 44.** *What impact on the total development of Montenegro has the ICT sector (computers and the Internet)?*  
  
**Graph 45.** *Who is responsible for development of the ICT sector in Montenegro?*  
**Graph 46.** *What should be done to improve the usage of computers and the Internet in Montenegro?*  
**Graph 47. 48.** *Supply and product placement*  
**Graph 49.** *Educational level of employees*  
**Graph 50. 51.** *Resources invested in education in 2004, and planned for 2005*  
**Graph 52.** *Speed and type of Internet connection*  
**Graph 53.** *Factors in the development of the information society in Montenegro*  
**Graph 54.** *Suggestions for increasing computer and Internet usage*  
**Graph 55.** *Number of Internet users (regional comparison)*

**TABLES**

<b>Table 1.</b>	<i>Realized sample for households</i>
<b>Table 2.</b>	<i>Realized sample for enterprises</i>
<b>Table 3.</b>	<i>Barriers in business</i>
<b>Table 4.</b>	<i>Barriers in ICT enterprises</i>
<b>Table 5.</b>	<i>ICT indicators in Montenegro</i>
<b>Table 6.</b>	<i>ICT indicators of countries in the region</i>

**ACKNOWLEDGEMENT**

A survey on computer and Internet usage in Montenegro realized by the Center for Applied Research and Analysis (CARA), Podgorica.

Our colleagues from the Institute for Strategic Studies and Projections (ISSP) and surveyors, who are our partners on various other types of projects and surveys, provided help during data processing.

Data analysis and finalization of the report was realized by the Center for Applied Research and Analysis. Our partners who cooperated with us and contributed their knowledge, expertise and suggestions supported the completion of the survey and final report.

We are especially thankful to:

- ❖ ICT enterprises: Cikom, Jugodata and Digit Montenegro who are our partners on this project and who participated in every phase of the research;
- ❖ Mr Dusan Simonovic, director of Secretary for the Development of the Republic of Montenegro;
- ❖ MSc Dragana Radevic- Program director of the Center for Entrepreneurship and Economic Development (CEED), MSc Jadranka Kaludjerovic- Program director of the Institute for Strategic Studies and Projections (ISSP) and Milica Perovic- assistant in CEED, for useful suggestions which helped us during both, the research phase and finalization of the survey.

*Milica Dakovic*  
*Project Coordinator*

**PURPOSE OF SURVEY**

Information literacy is one of the main criteria for the information society developing in modern economies, as well as in transition countries. The information society represents the participation of an active information literate population. Namely, it implies an adopted specific knowledge, standards and rules in the area of information technology. The information culture represents standing habits and practices developed by individuals, institutions and the entire society's ability to use a wide spectrum of information with specific emphasis on computer and telecommunication technology.

The information society is a necessity and represents one of the main conditions of a country's development. Where is Montenegro in that process and which are the most important conditions for the further development of the information society?

In the quest for answers and considering the importance of the development of the information society, the Center for Applied Research and Analysis carried out a survey about computer and Internet usage in Montenegro. Changes, in order to increase the development of the information society cannot be implemented without previously considering the situation and specific conditions and demands of the environment. We are witnesses to the fact that there is a lack of research and data in the field of ICT in Montenegro and this knowledge was extra motivation for this survey.

The survey has the main goal of finding the basic level of information literacy and ICT sector monitoring in Montenegro.

In order to realize that goal it is important to regard:

1. The level of information literacy among households;
2. Computer frequency in households and enterprises;
3. The level of Internet usage among households and enterprises;
4. Business dependency on PC usage; and
5. Barriers that complicate the development of the information society.

Only in this way – through better understanding the problems and current ICT development in Montenegro, can we evaluate the real situation and needs for further progress. It implicates not only state and policy-making, but also entrepreneurs and their businesses.

<b>SAMPLE REFERENCES</b>
--------------------------

Stratified samples were used during the survey. The administrative division of Montenegro comprises 21 municipalities, which were represented at the start of the research. After defining the regions and the municipalities in which the survey would take place, samples for households and enterprises were chosen. During the survey three types of questionnaires were used, according to the different characteristics of households, enterprises and ICT enterprises.

One questionnaire was used for all the households in the survey. The master of the household answered questions, while other members of the household had a chance to help during questioning. Considering the specifics of the survey and the fact that younger members (children) of households have more knowledge in the areas of PC usage and the Internet, in most cases they answered the questions.

For the regions and the municipalities, the sample involved 1,000 households from: Ulcinj, Bar, Herceg Novi, Podgorica, Cetinje, Niksic, Berane, Pljevlja and Bijelo Polje.

*Table 1. Realized sample for households*

MUNICIPALITY	NUMBER OF QUESTIONNAIRES
Ulcinj	43
Bar	95
Herceg Novi	78
Podgorica	349
Cetinje	40
Niksic	148
Berane	73
Pljevlja	78
Bijelo Polje	96
<b>TOTAL</b>	<b>1,000</b>

The deviation allowance on the sample of 1,000 households is +/- 3%.

The survey on computer and Internet usage also involved 200 enterprises from three regions of Montenegro. It involved the following municipalities: Ulcinj, Bar, Budva, Kotor, Herceg Novi, Podgorica, Niksic, Bijelo Polje, Berane, Pljevlja i Rozaje.

*Table 2. Realized sample for enterprises*

MUNICIPALITY	NUMBER OF QUESTIONNAIRES
Ulcinj	11
Bar	21
Budva	18
Kotor	10
Herceg Novi	12
Podgorica	67
Niksic	19
Bijelo Polje	15
Berane	11
Pljevlja	9
Rozaje	7
<b>TOTAL</b>	<b>200</b>

The third category of questionnaires was designed especially for ICT enterprises in Montenegro. Therefore, this survey included 30 ICT enterprises from all of the three regions of Montenegro.



**METHODOLOGY**

An increasing need for the completion of a survey on computer and Internet usage in Montenegro arose due to a lack of valid data about PC and Internet usage among households and enterprises. Even though the main goal of the research is based on real presentation of the information literacy level within households and enterprises in Montenegro, it also considers barriers to full use of the information society.

The survey was prepared as a representative sample that comprised 1,000 households, 200 enterprises and 30 ICT enterprises in 13 municipalities of Montenegro. For the survey purposes three questionnaires were created for previously specified target groups.

Research started in October 2004, beginning with data collection. Data analysis was finished in February 2005.

**Questionnaire for households**

The questionnaire for households consisted of several parts with special attention paid to younger generations and their level of information literacy. At the beginning there is a *Basic questions section*, which consists of general information about the household. A *Computers in household* section is another part of the questionnaire that asks questions about the number of computers in the household and their level of use. The third section of the questionnaire is related to *Hardware and software*. It asks questions about the type of computer that is used, and the most frequently used programs and operational systems. A special section of the questionnaire is reserved for the *Internet* and indicates the levels of Internet usage, type of Internet connection and the main reasons for not using the Internet. In the last section of the questionnaire *Information society development from the household viewpoint*, provides household participants with a chance to give their own opinions and suggestions on how to develop the level of information literacy in Montenegro.

**Questionnaire for enterprises**

The questionnaire for enterprises also consisted of several parts. The first section of the questionnaire *Basic questions* consisted of requests for information about the size of the enterprise, the region and the activities. Another section title *Computers in the enterprise* requested information about the level of computer usage in the enterprise, the business' dependency on it, and the most common computer brands used. *Employee education* is a very important criterion for further development of enterprise and modern trends observation and was covered in the third section of this questionnaire. Questions in this area were mostly steered to affirmation of computer usage levels and an analysis of enterprise preparation for providing education for new skills required by their employees. A section of the questionnaire is reserved for the *Internet*, namely Internet usage in the enterprise and the financial resources needed for that Internet use. Modern business undertakings are inconceivable without web presentation and some questions were targeted at *Website creation*. Surveyed enterprises also had the opportunity to offer some suggestions about how to increase information literacy in the section titled *Information society development from the enterprise viewpoint*. This section of the questionnaire consisted of questions related to barriers in doing business in Montenegro.

**Questionnaire for ICT enterprises**

This survey on computer and Internet usage paid attention to ICT enterprises, as very important factors for the future development of the information society and information literacy in Montenegro. Therefore, a special questionnaire was created for ICT enterprises. In addition to the *Basic questions*

section that gives basic information about the enterprise and its activities, there was a special section of the questionnaire targeted at *Employees*. Similarly, the questionnaire for ICT enterprises contained sections targeted at information about the *Internet* connection and costs. ICT enterprises were provided with an opportunity to make suggestions in a section titled *Information society development from the ICT enterprise viewpoint* with the primary purpose of making people aware of the information society developing in Montenegro. The survey on computer and Internet usage in Montenegro is based on valid data; related to previously mentioned methodology, and represents a basis for further monitoring of the ICT sector in Montenegro. According to this data, results from this research are representative.

**CONTENTS**

*Why conduct a survey on computer and Internet usage in Montenegro?*

The survey on computer and Internet usage in Montenegro was undertaken in order to research the level of development of the information society and to provide a basis for further monitoring of the ICT development process in Montenegro. The survey targeted 1,000 households, 200 enterprises and 30 ICT enterprises in three regions of Montenegro.

*What does data collected from the households represent?*

In analyzing the level of computer usage in Montenegrin households it was found that 41.5% of households own a computer. 64.8% of these households with a computer also have Internet connection, which represents about  $\frac{1}{4}$  (26.4%) of the total sample.

*What does data collected from the enterprises represent?*

The survey showed that 93.4% of enterprises in Montenegro, according to the sample, use computers in business. 86% of enterprises have an Internet connection. From that number, 62% have a dial-up connection and 24% an ISDN connection.

*What does data collected from the ICT enterprises represent?*

The survey showed that 88.9% of ICT enterprises have Internet connection. From that number 58.3% have an ISDN connection; 16.7% ADSL; and 16.7% dial-up, while 8.3% have some other type of connection.

*Barriers in business- exist/do not exist?*

Generally, all enterprises from the sample regarded the main barriers to doing business as: high taxes; an impossibility to remunerate requirements; administrative barriers; customs rates and corruption. ICT enterprises specified as the most important barriers: high taxes, administrative barriers; absence of foreign capital; corruption and disloyal concurrent.

*Who is responsible for the information society developing in Montenegro?*

All three targeted groups had an opportunity to give suggestions for increasing the future development of the information society in Montenegro. According to the sample, all three targeted groups had similar answers. In households, the prevailing opinion is that the Government of Montenegro is the key factor of future ICT development (59.8%). The same opinion exists in the enterprises where 74% believed that the Government (through reducing or nullifying taxes on computers and computer equipment), are one of the most important factors for further development of the information society. The ICT enterprises had a similar opinion (81.4%).

*What needs to be done to increase the level of computer and Internet usage in Montenegro?*

According to the sample of households surveyed, 29.7% of them believe that prices of computers and computer equipment need to be reduced. Additionally, 16.7% of them believe that education in schools needs to be improved. As a suggestion, enterprises denominated:

- A need for permanent education in primary schools and through the media (39.8%);
- Reduction of computer, equipment and Internet service prices (15.3%); and
- VAT reversal on computers and computer equipment (9.2%).

ICT enterprises suggested:

- Need for education (40.7%);
- VAT reversal on computers and computer equipment (33.3%); and
- Possibility for e-commerce development (7.4%).

**COMPUTERS AND INTERNET IN HOUSEHOLDS**

**Part I BASIC QUESTIONS**

The survey on computer and Internet usage targeted 1,000 households from three regions of Montenegro. From that number, 54.1% of households are situated in the central region (municipalities: Podgorica, Niksic and Cetinje); 24.4% from the north (municipalities: Bijelo Polje, Pljevlja and Berane), while 21.5% of households are from the south region of Montenegro (municipalities: Bar, Herceg Novi and Ulcinj). The survey mostly targeted households with four to six members (83.9%), while the average number of household members, according the sample, is 4.7. The percentage of children under 18 is 44.5%.

With relation to the purchasing ability of households through monthly salary, according to the sample, 29.4% of households have a monthly salary lower than €200, while only 8.6% have a monthly salary higher than €700. That data indicates a relatively low level of living standard and, also, purchasing ability of the population.

**Part II COMPUTERS IN HOUSEHOLD**

Analysis of the whole sample shows that 41.5% of households own a computer, while 58.5% do not. From the total number of households that currently do not own a computer 68.4% of them are planning to purchase one in the near future, while 31.6% do not intend to. The main reason/barrier cited for preventing the purchase of a computer is lack of financial resources (in 80.3% households). Other reasons are: lack of interest, free time and knowledge. Households who do decide to purchase would rather purchase a computer from an authorized exponent (77.8%) or on the “gray” market (17.1%).

Analysis of households that own a computer, in which at least one member is a PC user, most often the users are younger than 18. The average age for a child that is a PC user, according the sample, is 12.8 years. This indicates a need for special consideration for the education of the younger generations.

The survey on computer and Internet usage in Montenegro in households had its own goal to analyze ways in which household members were educated to use PC's. According to the data, 39.5% of household members were educated by themselves or with the help of cousins/friends (15.4%) and through educational courses (11.2%). A lack of education is one of the main reasons for non-use of computers in households, especially in the northern region of Montenegro (26.2%). This data is a very important indicator of the significant need of the population for education in computer and Internet use, and the lack of opportunity for this education. It is important to note that 73.4% of respondents are, according to the sample, ready for extra education.

Financial problems are one of the most prevalent barriers for extra education (40.8%). Analysis of the need for extra education shows that 72.2% of children younger than 18 need extra education; as do 23.7% of husbands/wives and 25.3% of children older than 18.

**Part III HARDWARE AND SOFTWARE**

Analysis of households that own computers, according to the sample, shows that 88.7% of them own one; 9.5% own two, while 1.8% own three or more computers. It is worth mentioning that the frequency of purchasing is highest in the period from 2001 to 2003 (48.3% of households purchased computers) and the fact that in 2004 purchasing increased (26.9% of households purchased computers).

Most of the surveyed households own Pentium IV (50.6%) and the most common additional equipment are loudspeakers (82.4%) and printers (60.8%).

**Part IV INTERNET**

From the total number of households that own a computer, 64.8% have an Internet connection, which represents 26.4% of the whole sample. Dial-up connection is the most common type of connection (80.5%).

According to the whole sample, 47.7% of respondents use the Internet, while 52.3% do not use it. Of the total number of those who are Internet users 67.2% use the Internet from home, at work, at a cousin's home, in an Internet café or in a school/faculty. One of the main reasons for not using the Internet is disinterest (26.8%) and the high price of installing an Internet connection.

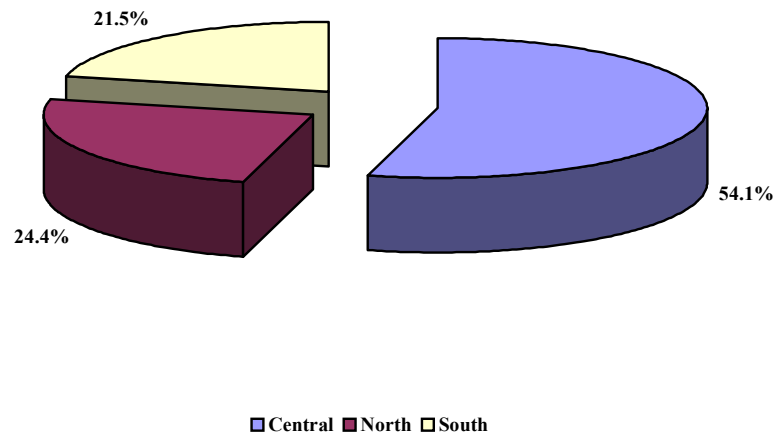
**Part V INFORMATION SOCIETY DEVELOPMENT FROM THE HOUSEHOLD VIEWPOINT**

The surveyed households are of the opinion that the Government of Montenegro, the Ministry of Education and Science and the media need to create an atmosphere for further information society development in Montenegro. Households were given the opportunity to provide suggestions for further increasing computer and Internet usage. The most common suggestions were: reduction of prices for computers and equipment; increasing education levels in schools; and a better standard of living.

**- HOUSEHOLDS -**

***1. Region***

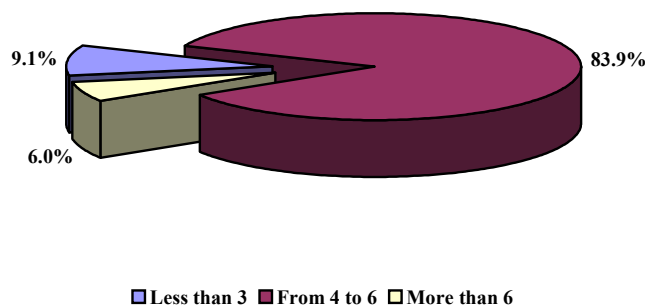
*Graph 1. Household structure by region*



***2. Number of household members***

From the total number of households surveyed 99% provided an answer to the number of members living there. The total number of household members in the surveyed households, according to the data was 4,634.

*Graph 2. Number of household members*



### **3. Number of children, under 18**

Of the surveyed households, 5.8% do not have members younger than 18; 19.8% have one child; 40% have two children; 26.5% have three children, while the remaining 7.9% of households have more than three children. The average number of children in households, according to the sample, is 2.1.

The total number of children in surveyed households is 2,112.

The average relation between the number of children and the number of adults in a household, according to the sample, is 44.5% children younger than 18 and 55.5% adults.

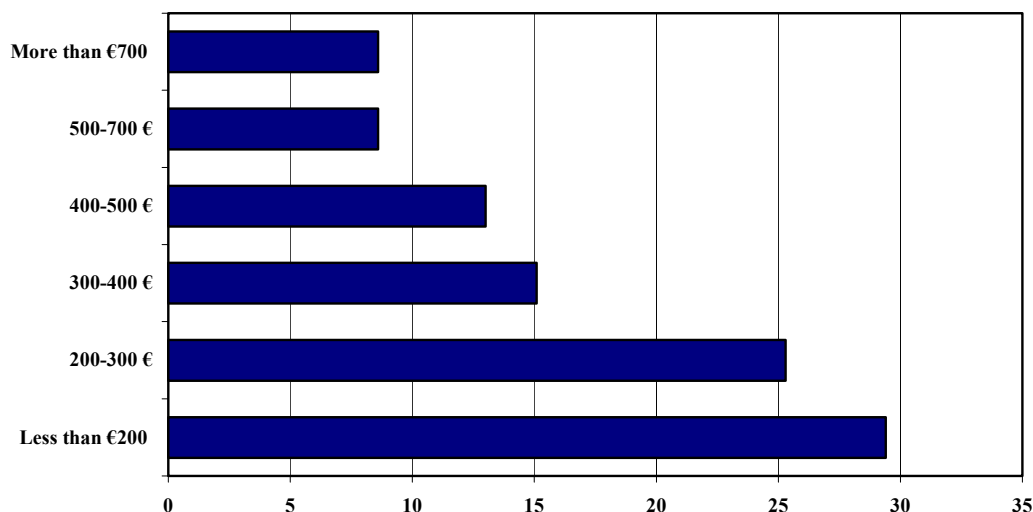
### **4. Number of employees in the household**

Of the surveyed households, respondents 93.5% provided information on the number of employees in the household. 2.5% have no employed members; 46.3% have one employed member; 39.8% have two, while 5% have more than three employed household members.

### **5. Average monthly salary**

90.9% of respondents provided information on the monthly salary in their household; the salaries were categorized as shown in the table below.

*Graph 3. Average monthly salary (%)*



Most households have a monthly salary less than €200 (29.4%); from €200 to €300 (25.3%), while 8.6% have a monthly salary of more than €700.

**6. Age of examinee**

Of the surveyed households, 92.3% provided an answer about their age. 42.9% are younger than 18; 4.7% are from 19 to 30 years; 24.3% are from 30 to 40; 24.5% are 41 to 50, while 3.7% of respondents are more than 50 years old. The average age of the examinee is 29.5 years of age.

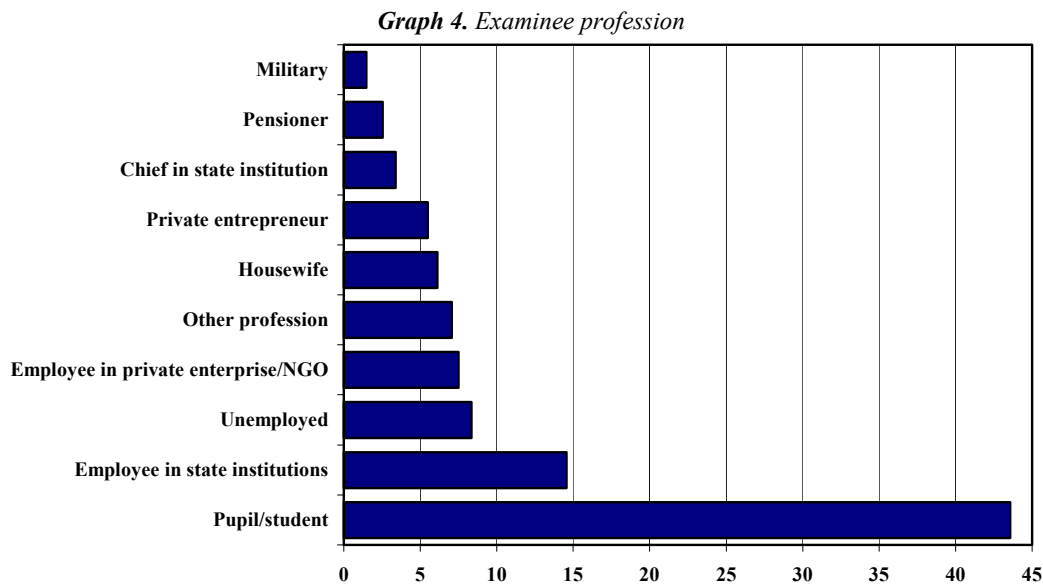
**7. Educational level of examinee**

Of the surveyed households, 98.2% provided an answer about their educational level. 35.9% finished primary school; 46.4% finished secondary school, while 17.7% graduated from a faculty.

Of the total number of respondents that finished their education, 6.9% finished primary, 62% secondary and 31% a faculty education. Among respondents that graduated from a faculty there are mostly those who finished Economics (21.1%), Law (15.1%) and Technical faculty (8.6%).

**8. Examinee profession**

Of the surveyed households, 96% of respondents provided answers about their profession.



Of the total number of respondents, most are pupils or students (43.6%); or employees in state institutions (14.6%), while 8.3% are unemployed. Pensioners (2.5%) and military (1.5%) are the least common.



**COMPUTERS AND THE INTERNET IN ENTERPRISE**

**Part I BASIC QUESTIONS**

The survey on computer and Internet usage included a sample of 200 enterprises in Montenegro: 43.5% from the central region; 36.5% from the south and 20% from the northern region. In most cases these were enterprises with no more than 10 employees (micro enterprises) while only 2.2% were large enterprises (over 250 employees). The sample was also comprised mostly of enterprises in the area of trade (63.5%), production (17%) and architecture (11.5%). Analysis of barriers that represent difficulties for doing business, showed: high taxes, an inability to remunerate requirements, corruption, no loyal concurrent and high customs rates.

**Part II COMPUTERS IN ENTERPRISE**

According to the total number of enterprises from the sample 93.4% use computers for doing business, while 6.6% do not use them because they are not required or due to a lack of financial resources. The average number of computers, among enterprises that use them, is 9.9%. The most common type is Pentium IV (68.6%) and equipment – printers (94.1%) and loudspeakers (55.1%).

Surveyed enterprises mostly use computers for accountancy-financial business (73%) and communication (64.3%).

One of the questions targeted preparation of enterprise for software legalization. It is worth noting that 48.5% of enterprises are not well informed about future software legalization; 23% are preparing and 16.4% of enterprises have their own licensed software. 91.9% of the enterprises that own computers responded to the question about the level of the businesses dependency on them. 49.4% of these enterprises are totally dependent on computers. Most of the enterprises responses indicated that efficiency would be decreased by 25% to 50%. Analysis of the amount of resources that enterprises reserve for computer purchases indicates that most reserve up to €500 (25.7%). Surveyed enterprises intend to purchase more computers and more computer equipment (55.9%). Financial resources planned for that procurement range from €2,000 to €5,000, which is an increase in expenditure compared to financial outlays for in 2004. This implies an increasing level of understanding of computer usage and its importance for modern business.

**Part III EMPLOYEES EDUCATION**

The survey on computer and Internet usage in Montenegrin enterprises showed that more than half of enterprises from the sample that use computers, have an average number of 11.7 employees (67.6%).

However, in the largest number of enterprises (51.9%), according to the sample, there are no conditions for the education of employees inside the enterprise. Employees in most cases educated themselves (53.3%). The main reason for a lack of education is lack of need (74.6%) and lack of motivation (9.5%). The average amount of financial resources reserved for educational purposes (according to the answers of 32.4% of enterprises) was €1,453, or €74.5 per employee.

**Part IV INTERNET**

Of the total number of enterprises that use computers 62% have a dial-up connection, while 24% have ISDN. Employees (at 74.2% of enterprises) use the Internet daily. According to these figures 58.9% of employees use the Internet for up to one hour per day and 17.1% for more than two hours per day.

Analysis of resources that are planned for paying Internet hours shows enterprises pay, on average, €65.80. The main reasons of enterprises for not using the Internet are lack of education (29.4%), lack of interest (23.5%) and lack of need (17.6%).

**Part V WEB SITE**

Of the total number of surveyed enterprises, 47% do not have their own website, while 15.8% do not currently have a site but plan to develop one. Surveyed enterprises paid more than €600 for web site design (on average). Surveyed enterprises initially spent €200 to establish a site and more than €50 per month on web site servicing; in 2005 they are planning to reserve more than €500 for that purpose. 90% of surveyed enterprises indicated the importance of web site presentation for the future of doing business and indicated that it had lots of advantages.

**Part VI INFORMATION SOCIETY DEVELOPMENT FROM THE ENTERPRISE VIEWPOINT**

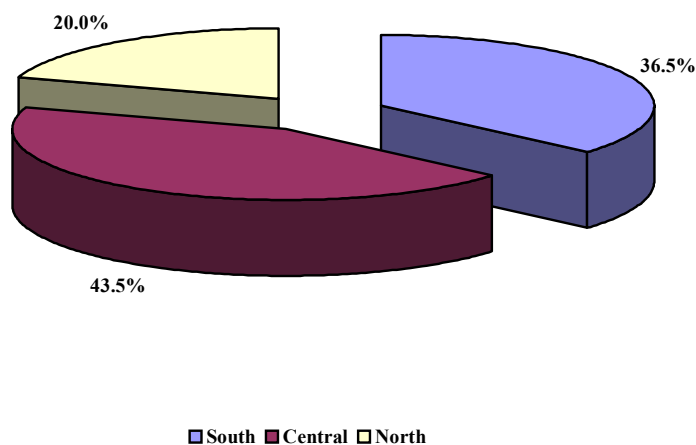
Surveyed enterprises (71.5% of them) indicated that ICT development has a great influence on the overall development of Montenegro. The survey results showed that there is an opinion that the Government of Montenegro needs to be the promoter of information society development, as does the University. 39.8% of the enterprises that gave suggestions for increasing development of computer and Internet usage in Montenegro, indicated that it is important to increase the level of knowledge; reduce the price of computers and Internet usage (15.3%); and nullify VAT on computers (9.2%). 8.2% of enterprises indicated that it is important to reduce tax and customs rates on computers and computer equipment.

**- ENTERPRISES -**

**1. Region**

The total number of surveyed enterprises is 200. According to the regions, 43.5% are from the central region, 36.5% are from the south and 20% from the northern region of Montenegro.

*Graph 5. Structure of enterprises by region*

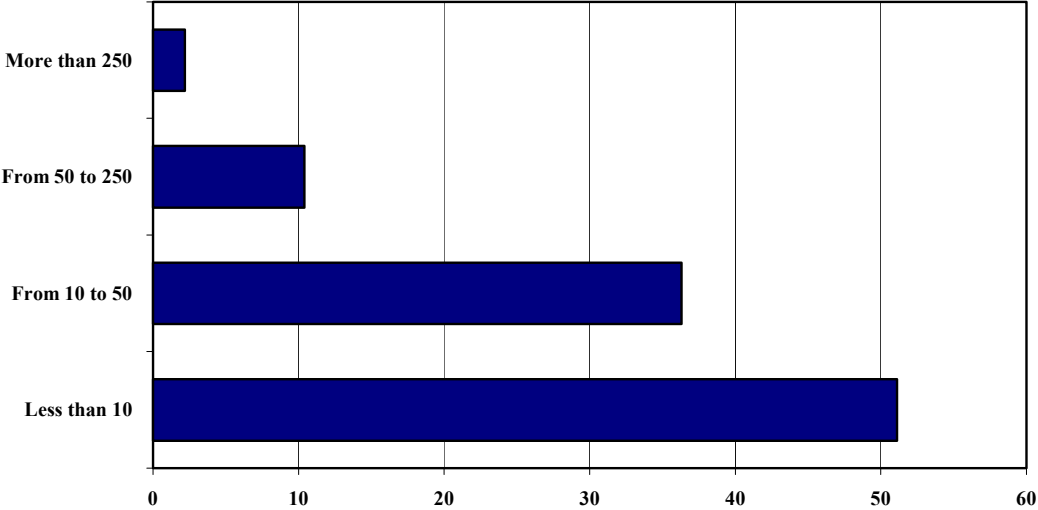


Most of the enterprises are from Podgorica (34%), Bar (10.5%) and Niksic (9.5%). 92% of enterprises surveyed provided information about the year of establishment. 31% were established in the period from 1990 to 1995; 30.4% in the period from 1990 to 1995; 20.7% after 2000, and 17.9% were established before 1990.

**2. Number of employees**

Of the total number of surveyed enterprises 91% provided information. The total number of employees in these enterprises is 5,453, or an average of 29.9%. Of that number, 51.1% have less than 10 employees (micro enterprises), while only 2.2% of the enterprises have more than 250 employees.

*Graph 6. Number of employees*



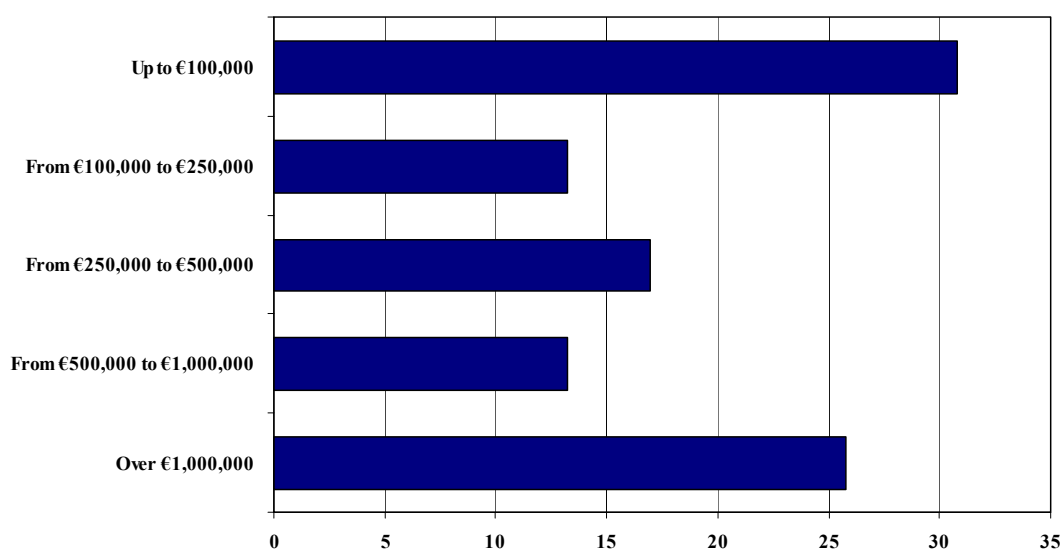
### **3. Activity**

The survey targeted enterprises in different areas of business. Most of them are doing business in the trading area: 35% wholesale and 28.5% retail. Beside that there are enterprises in the areas of: production (17%); architecture (11.5%); tourism (8%); hotels and restaurants (7.5%); transport and traffic (6.5%); agriculture, forestry and water (1%); the refinement industry (0.5%) and real estate (0.5%). Surveyed enterprises could specify other areas of activity. Of these, 9% specified marketing, trade services and graphic design.

### **4. Annual return**

The question about annual return was answered by 79.5% of enterprises. Among them, 30.8% have an annual return of up to €100,000, while 13.2% have a return from €500,000 to €1,000,000.

**Graph 7. Annual return**



**COMPUTERS AND INTERNET IN ICT ENTERPRISES**

**Part I BASIC QUESTIONS**

One section of the survey especially targeted ICT enterprises in Montenegro. The sample included 30 enterprises in all of the three regions in Montenegro: 63% from the central part and 18.5% in the southern and northern regions. Most of the ICT enterprises were established from 1991 to 2000 (66.6%). According to the number of employees, 64% are organized in the form of micro enterprises (less than 10 employees) and 36% in the form of small enterprises (from 10 to 50 employees).

ICT enterprises do several activities simultaneously and the most frequent is servicing (66.7%). Computer and computer equipment is mostly procured on the domestic market (70.4%), in Montenegro. Additionally there are international markets (40.7%); the Serbian market (37%) and ex-Yu market (11.1%). Procurements mostly imply the USA market (45.5%) and Germany (36.4%). Product placement is mostly targeted at the domestic market (96.3%).

The surveyed enterprises specified barriers to doing business. The most dominant are: high taxes, administrative barriers, lack of access to foreign capital, and corruption.

**Part II EMPLOYEES**

Analysis of the structure of employees in ICT enterprises in Montenegro shows that 77.8% of employees have graduated from a faculty; 51.9% have a higher education and 81.5% have graduated high school. The educational level of the CEO shows that the owners usually have faculty diplomas (75%), while 12.5% have a higher education.

Employee's education, as the most important factor of further development of the ICT enterprise, shows that 88.5% of ICT enterprises are conscious of the need to educate employees. The average amount of financial resources reserved for that purpose was €520.8 per employee in 2004. Future plans for education exist in 73.9% of enterprises and they have plans to reserve €794.9 per employee in 2005.

**Part III INTERNET**

Most of the enterprises from the sample own ISDN (58.3%), about 59.3% of ICT enterprises pay monthly Internet services and 22.2% pay per hour. In ICT enterprises employees mostly create websites (71.4%) and from the total number of surveyed ICT enterprises 77.8% has its own website. ICT enterprises in Montenegro cooperate with some global vendors (48.1%) and these are most often Microsoft (30.8%), Oracle (23.1%) and HP (15.4%).

**Part IV INFORMATION SOCIETY DEVELOPMENT FROM THE ICT ENTERPRISE VIEWPOINT**

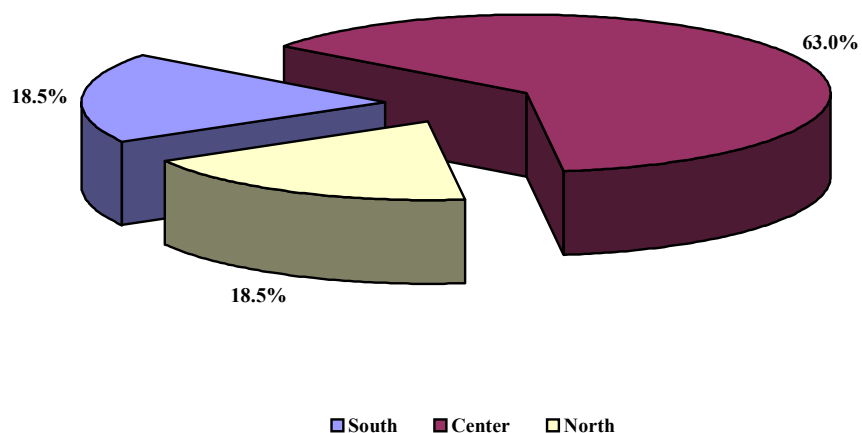
Observing factors important for the future information society development in Montenegro, most ICT enterprises indicated that the Government of Montenegro need to be a key factor in further ICT development (81.4%), the ICT sector (37%) and the media (37%). ICT enterprises were given the opportunity to give suggestions for increasing the level of information literacy among the population. The most frequent responses were: pay special attention to education; nullify VAT on computers and computer equipment, and e-commerce and ICT sector stimulation.

**- ICT ENTERPRISES-**

**1. Region**

According to the regions, 63% of ICT enterprises are from the central part (municipalities of Podgorica and Niksic), while 18.5% are from the south (Bar, Budva, Herceg Novi and Kotor) and northern regions of Montenegro (municipalities: Berane, Bijelo Polje and Pljevlja).

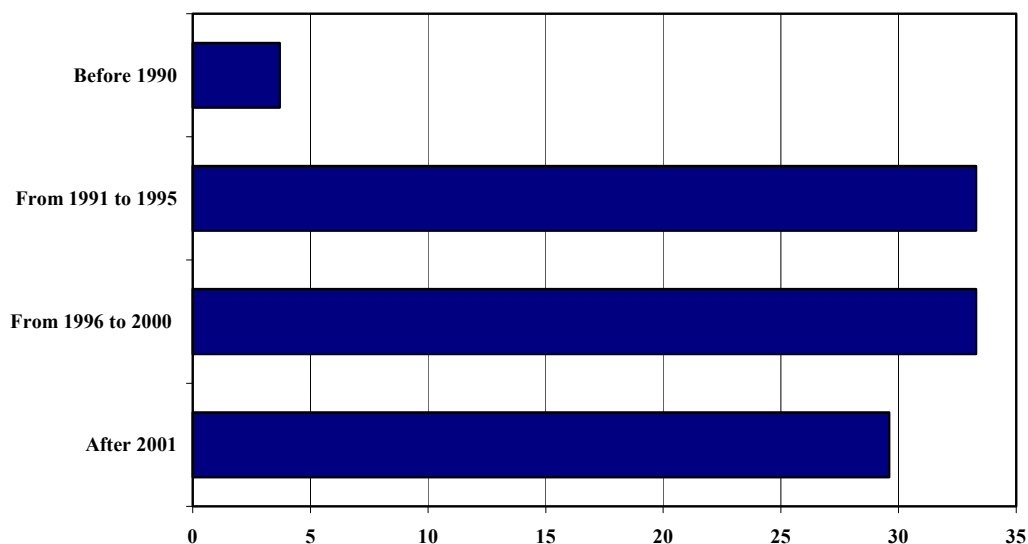
**Graph 8. Structure of ICT enterprises by region**



**2. Year of establishing**

Years of establishment are presented in intervals. 3.7% of ICT enterprises were established before 1990; 33.3% in the interval from 1991 to 1995; 33.3% from 1996 to 2000 and 29.6% after 2001.

**Graph 9. Year of establishing**



### **3. Number of employees**

A question about the number of employees was answered by 92.6% of surveyed ICT enterprises 64% are organized in the form of a micro enterprise (less than 10 employees), while 36% are in the form of small enterprise (from 10 to 50 employees). The most dominant ICT enterprises, according to the regions, are those in the form of micro enterprise. In the northern region that is 100%. When comparing the year of establishing with the number of employees 100% of ICT enterprises established before 1999 is organized in the form of a micro enterprise as are those established after 2001.

### **4. Activity**

A question about the activity of enterprises allowed more than one answer. Of the total number of enterprises surveyed 29.6% of them listed *production*, while others indicated other activities.

Analysis of other activities indicated in the survey, shows that in 63% of enterprises the most common activity is *selling* i.e. hardware and software selling. 91.4% of these enterprises sell hardware and 76.5% sell software.

*Information system projection* is another of the activities of ICT enterprises. The survey shows that in 59.3% of enterprises the most common activity is information system projection. Information system projection includes: software projection, net structure and communication systems. 81.3% of enterprises surveyed do software projection, 75% net infrastructure and 56.3% communication system projection.

Of the total number of surveyed enterprises 66.7% undertake *servicing* 48.1% of ICT enterprises undertake *consulting* and 63% *observance*.

*Education* is one of the activities that ICT enterprises undertake in Montenegro (37%).

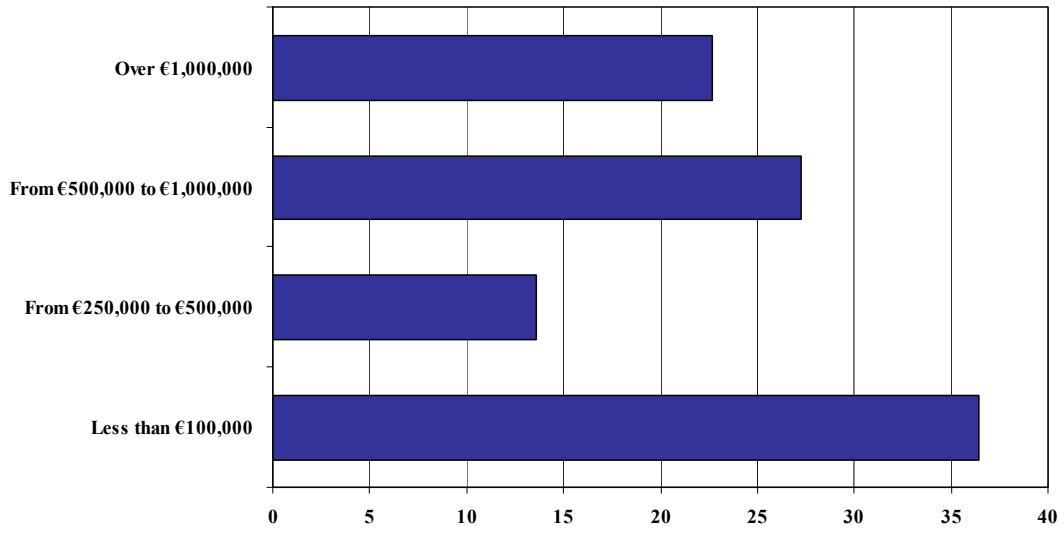
The sample shows that 11.1% of surveyed enterprises do *Information system development* and 18.5% do software development.

### **5. Annual return**

81.5% of ICT enterprises provided a response about their annual return. 36.4% have an annual return of less than €100,000; 13.6% from €250,000 to €500,000; 27.3% from €500,000 to €1,000,000 while 22.7% have an annual return of more than €1,000,000.



*Graph 10. Annual return of ICT enterprise*



**SURVEY ON COMPUTER AND INTERNET USAGE IN  
HOUSEHOLDS**

**COMPUTERS IN HOUSEHOLD**

***1. Does the household own the computer?***

Of the total number of surveyed households, 1.7% did not provide an answer to the question. Of those who responded 41.5% of households have a computer, while 58.5% do not. Analysis of the 41.5% of households that own a computer shows: 48.9% of households are in the central region; 42.7% are families with between four and six household members; 46.6% of households have one child younger than 18 years of age; 61.2% of households have three or more members; 77.9% are families with a monthly income of €700, and 69% of households have a member with a faculty education or still undergraduate.

***2. Does the household intend to buy the computer in near future?***

Of the total number of households that do not have a computer, 68.4% intend to buy a computer in near future, the other 31.6% do not intend to. In relation to the whole sample, of 1,000 households, 173 or 17.5% indicated that they do not own a computer and do not intend to buy one in the near future, these households are mostly respondents from the central region (73%). The situation is the same for the households with one child. Of the households with no employed member, just 42.1% intend to buy a computer in near future, as is the case for 55.5% of those with a monthly income of €200.

***3. What are the restrictive factors for computer buying?***

The response to this question showed that 93.7% of the households that do not own a computer gave the following reasons: 80.3% stated that a lack of financial resources is a restrictive factor for buying a computer; 9.6% stated a lack of interest; 7.1% indicated a lack of free time; just 1.7% stated a lack of knowledge, while 1.3% gave some other reason.

In the central region of Montenegro, 75.4% of households indicated the restrictive factors to be a lack of financial resources, as did 88.6% of households with more than six members; 59.3% of these do not have children younger than 18 years. The households without children stated a lack of interest in 25.9% cases, and lack of time was a factor in 14.9% cases. More than 90% of households, without any employee, stated that the restrictive factor for buying a computer is the lack of financial resources, as did 12.5% of households with a monthly income above €700.

Analysis of the answers of respondents that stated they will not buy a computer in the near future, shows that 89.9% see a lack of financial resources as the restrictive factor; 6.6% indicated a lack of interest; 2.4% a lack of free time and 1.2% a lack of knowledge.

***4. Where would you buy computer and equipment, if you decide to buy it?***

Of the total number of households without a computer, 75.4% responded to this question. 77.8% stated that they would buy a computer from an authorized distributor, 17.1% on the illegal “gray” market; 5.1% indicated that they would buy a computer somewhere else.

Of the households that live in the north of the Republic 25.8 % would buy a computer on the illegal market; as would 21.7% of households with six or more members; 22.7% of these were households without children younger than 18 ages. Of the households without any employee, 83.3% would buy the computer from an authorized distributor.

Of those who would buy a computer from an authorized distributor just 12.9% indicated the name of the firm they would buy from. The majority of those would buy a computer from Cikom, Tagor and Platon Computers.

Of the average 77.8% respondents who would buy at an authorized distributor, 83.6% are those who live on the north of Montenegro; 80.6% are households with two children; 93.6% are households with monthly earnings between €500 and €700; 90.7% are faculty educational respondents or they are still undergraduate, and 79.2% are households who intend to buy a computer in the near future.

**5. How many household members use the computer?**

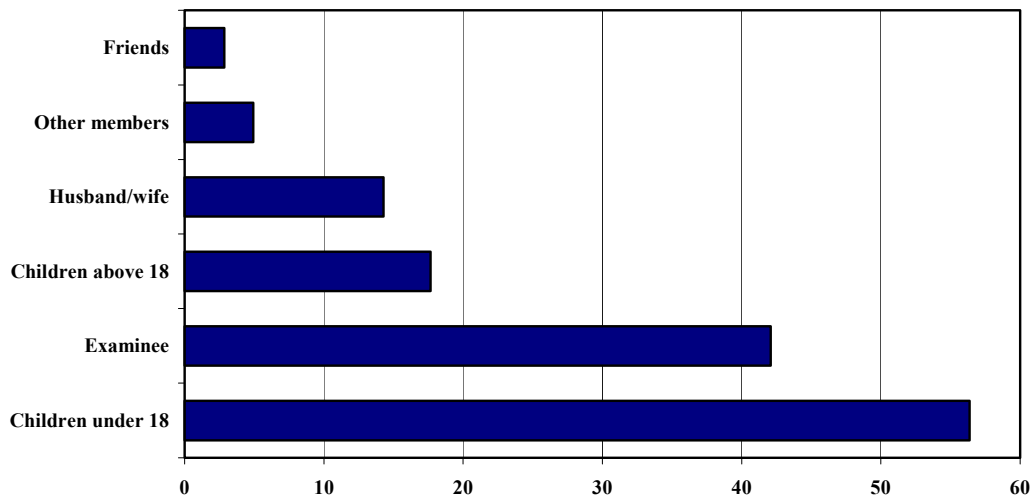
From the total number of those who answered (87.2%), in 44.7% of households do not have any members who use the computer; in 18.9% of households three or more members use the computer; in 15% of households all members use the computer; in 12.8% two members use the computer; and in 8.7% the computer is used by all members of the household.

Of the 8.7% of households in which all members use the computer: 17.4% of households were from the central region; 16.3% of households have between four and six members; 19.1% of households have two children; and 27.8% of households have a monthly income between €500 and €700. Of the households which own a computer: in 8.1% of households only one member uses the computer; in 20.4% two members; in 38.7% three or more members; and in 30.8% all members use the computer. Also, there are households (2%) that own a computer, but do not use them now.

**6. Who most frequently uses the computer in the household?**

Of the total number of households that own a computer and at least one member use the computer (39% of households from the sample): the most frequent users are children above 18 years (56.4%).

*Graph 11. Who most often uses computer in household*



**7. How many children in the household use the computer and how old are they?**

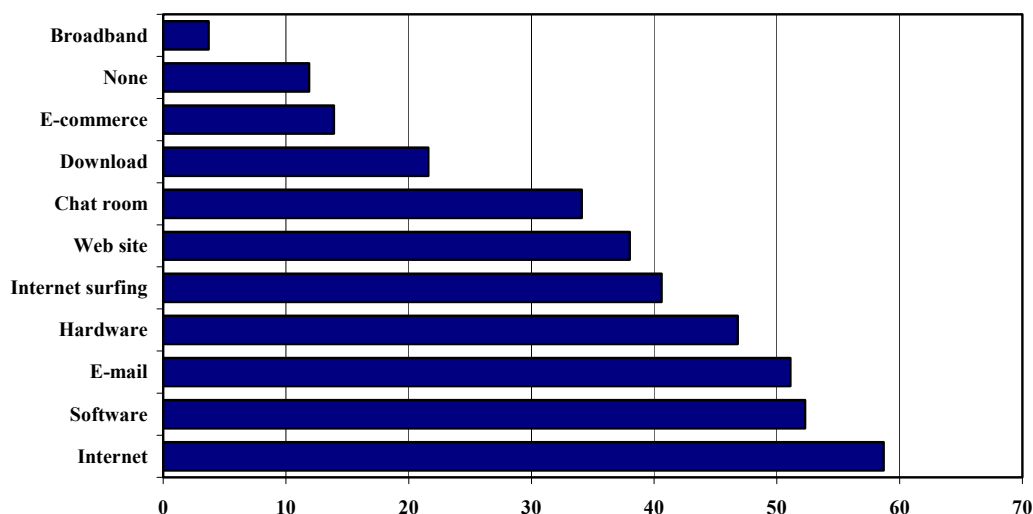
Of the total number of children in households in which at least one member of the family uses the computer (771 households): in 88.2% children (i.e. children from 680 households) use the computer. The average number of children in households that use the computer is 2.1. In 26% of households one child uses the computer; in 51.6% two children; in 19.2% more than three children use three.

If we compare the number of children that use the computer in those households with the total number of children in households, we can get the percentage share. It shows that in 91.4% of households that own a computer at least one member uses it, the share of children that use the computer compared to the total number of children in the households is more than 50%. The average age of the children who use the computer in households that stated that at least one-member uses the computer is 12.8 years.

**8. Knowing the terms**

For this question, all respondents from all households responded and they had the option to give more than one answer. The respondents know the most about the term Internet (58.7%), while they know the least about the term Broadband (just 3.7% of respondents knew this term). Of the total number of respondents from the sample, 11.9% are not familiar with any of the stated terms (Software, Hardware, Surfing, E-commerce, Internet, E-mail, Chat room, Download, Web site, or Broadband).

*Graph 12. Knowledge of terms*



**9. Do you use the computer?**

Of the total number of respondents, 93.4% responded to this question. 52.4% of respondents use the computer. The computer is often used by those who live in the central region (56.9%); those who have a smaller number of members in the household, to three members (61.4%); those with respondents only one child less than 18 years of age (60.3%); those respondents with three or more employees in the household (72.3%); those with an average monthly income between €500 and €700 (81.3%); faculty educated respondents or those who are still undergraduate (70.5%); private entrepreneurs/owners or part-owner of private enterprise (67.3%), and respondents households which own a computer (89.3%). In more than three quarters (75.4%) of households that own a computer, the respondent uses the computer.

**10. How often do you use the computer?**

Of the total number of respondents who use the computer, 98.3% provided an answer about how often they use it. The highest number use the computer every day (64.1%); 17% of respondents use the computer once per week; 8.6% up to three times per week; 2.9% respondents less than once per month, while 7.4% of respondents indicated that they don't know the answer to this question.

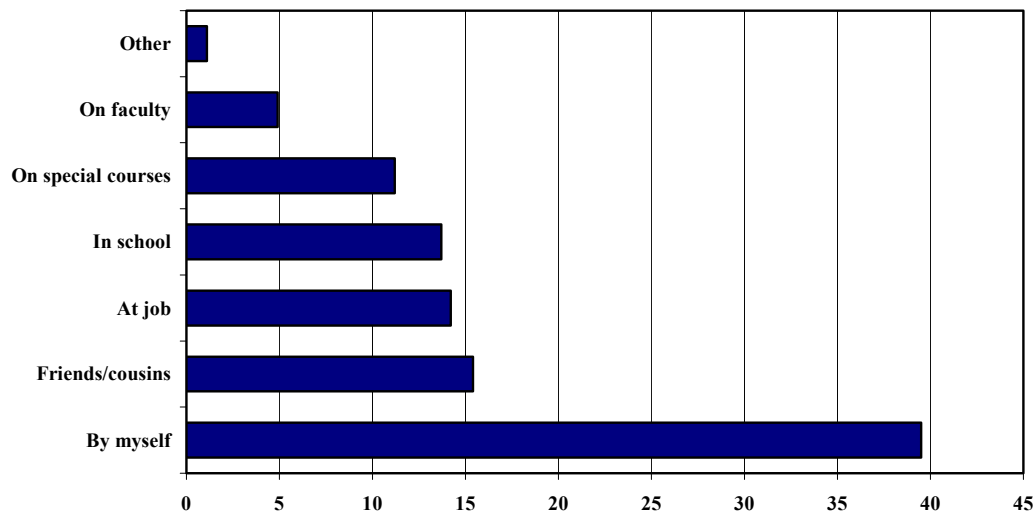
Analysis of these answers shows: 68.5% of respondents of households are from the south region; 72.7% respondents live in households with more than six members; 70.5% of households have two members employed. Have the households with respondents faculty educated or undergraduate members, 74.1% use the computer every day, as do 88.9% of respondents who work as managers in state owned companies.

### 11. Where did you learn to use a computer?

Of the total number of respondents 97.7% provided an answer to this question. The highest number (39.5%) indicated that they gained computer education by themselves; and 15.4% with the help of friends or relatives.

Of the 11.2 % of respondents who use the computer and learned to use computer on special course: 12.5% are from the central region; 16.9% respondents live in households with an average monthly income of more than €700; 21.6% are faculty educated respondents or undergraduate; 25% are unemployed, and 11.9% of respondents own a computer at home.

*Graph 13. Where you learnt to use a computer*



### 12. How would you evaluate your knowledge of using a computer?

For this question, 3.1% of respondents that stated that they use a computer did not give an answer. Of those who responded to this question, respondents most evaluate their knowledge as "medium" (50.3%). 25.4% consider themselves as beginners; 7.5% evaluate their knowledge as high; 3.5% consider themselves expert; while 13% could not give an evaluation.

With relation to the average on the level of the sample of 3.8% of experts, they are often from: the north part of the republic (6.7%); from households with an average monthly income between €500 and €700; respondents are faculty educated or undergraduates (6.1%); are managers in state owned companies (16.7%); and respondents who own a computer at home (4.3%).

### 13. For what purpose do you use the computer often?

Respondents had the option to provide more than one answer to this question. The highest number use the computer for games (51.4%); 32.4% for business purposes and in relation to this number, 42% work for the boss; 34.4% for their own needs; while 23.6% of respondents who stated that they used the computer for business purposes, didn't state if it was for a boss or for themselves. Apart from computer usage from business needs: 10.5% of respondents indicated some other purpose. The majority of respondents use the computers to access the Internet (56.9%), as well as for listening to music (17.6%).

Of those using the computer for business purposes: 39.2% are from the central region; 42.6% from households with two employed members; 55.7% from households with a monthly income between €500 and €700; the older respondents (69.2% of respondents between 51 and 60); respondents who are still undergraduate or finished faculty (70.1%), as well as 88.9% of respondents who are managers in state owned firms. The average number of respondents who use the computer in educative purpose is 43.4%.

Analysis of respondents by common criteria, indicates that the computer is often used by: those from the central region (48.6%); those without children in the household (53.3%); respondents with three or more employed members of a household (55.9%); respondents between 19 and 30 ages (66.7%); and faculty educated respondents (50.4%). More than half of respondents use the computer for entertainment; 57.8% of the respondents from the north of the republic; more than 63% of younger respondents; 67.7% of those who finished or still are in primary school, and 33.3% of faculty educated respondents.

***14. The reason why you don't use the computer?***

The response to this question showed that 76.5% of households do not use a computer. The majority stated the reason as: lack in computer education (22.6%), and lack of financial resources (18.8%). The number who indicated that they do not use a computer due to a lack of education is the highest in the north of the republic (26.2%); in households with between four and six family members (23.4%); in households without an employed member (55.6%); those with a monthly income below €200; those between the ages of 19 and 30 (40%); and those who are faculty educated or undergraduates (31.4%).

***15. Are you ready to get additional education in the field of using computers?***

88.7% of households provided a response to the question about additional education. Between them, 26.6% are not ready for additional education. 73.4% of respondents indicated that they are ready to get additional education in that field. Analysis of these figures show that: 78.9% of respondents live in the central region; 75% live in smaller households - no more than three members; 80% are households where there are three or more employed members; and those with a monthly average income between €300 and €400. The younger respondents are often ready to get additional education (76.6% of respondents up to 18 years); the respondents who have faculty education or are undergraduates (83.4%), as well as 74.1% of respondents who own a computer.

***16. If the answer is "no", why?***

89.7% of respondents, who stated that they don't need additional education in this field responded to this question. 40.8% stated that it is because of a lack of financial resources; 25.8% stated that they do not need it; 21.5% do not have any interest; while 1.7% gave other reasons.

Of the 40.8% of the respondents who do not need additional education because of a lack of financial resources: 69% were from the north; half of the respondents live in households with more than six members; 88.9% of respondents from households without any employees; 55.4% of respondents who are in or have completed primary school; and 65.1% of respondents who don't have a computer at home.

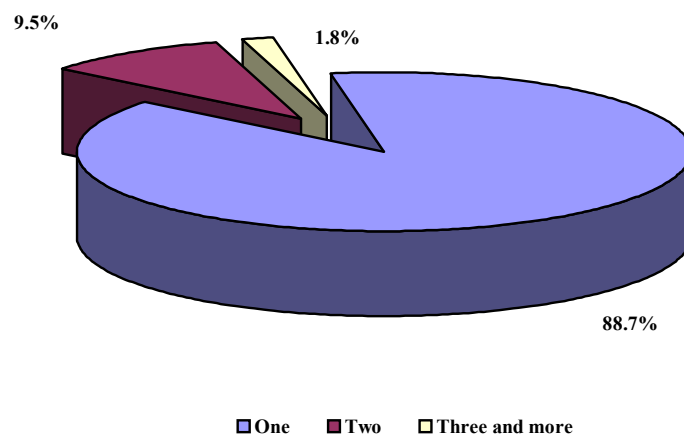
---

**HARDWARE AND SOFTWARE**


---

**1. The number of computers in households**

96.8% of households provided a response to the question about computer ownership. Of the 88.7% of households that own one computer and the 9.5% of households who own two computers, often these are households that: are living in the central region (11.3%); have more than six members in the family (11.8%); have three or more children (10.7%); have two employed members (10.7%); have a monthly average income of more than €700 (13.6%); the respondent is faculty educated or is still undergraduate (13.2%); and 13.6% where the respondent works as a manager in state owned companies.

**Graph 14. Number of computers in household****2. Which year did you buy the computer?**

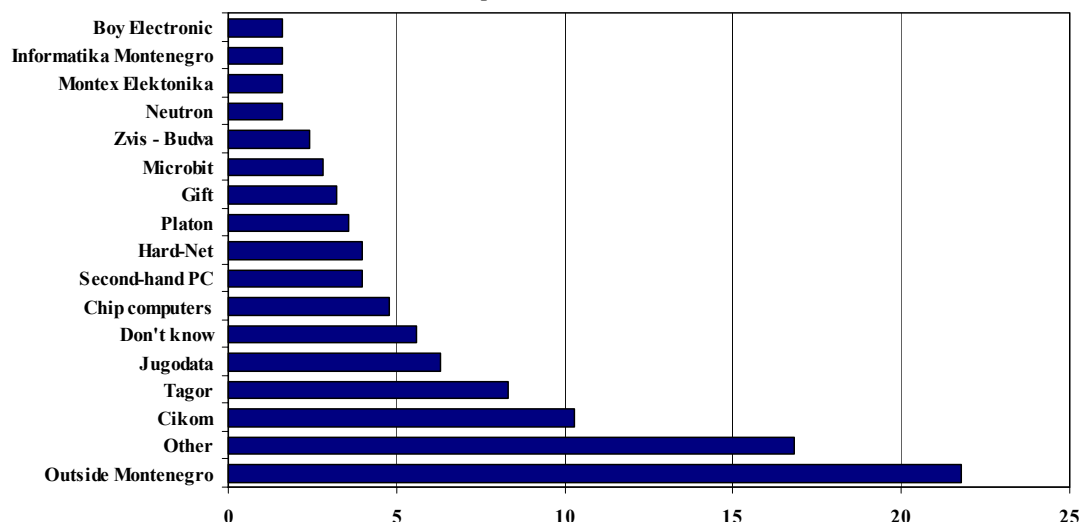
From the total number of the respondents who own the computer at home, 93.1% indicated when the computer was bought. If the household owns more than one computer then the year when the last one was bought is stated. Up until 2000, 24.8% of households bought a computer; in the period from 2001 to 2003, 48.3%; while 26.9% of household bought a computer in 2004. The new computers (those bought in 2004) are often owned by: the households that live in the north (37.2%); those with up to three members (37.5%); households without any employee (66.7%); households with a lower income (37.1% of those who have a monthly income lower than €200); households in which all members use the computer.

**3. Where did you buy the computer (the name of the firm)?**

Of the total number of households that own a computer, 62.5% provided an answer about the company where they bought the computer. Between them, the highest number of them bought the computer out of Montenegro (from that number around 70% of computers are bought in Belgrade). Analysis of the Montenegrin market purchases shows that the highest number of households bought a computer in Cikom (10.3%) then in Tagor (8.3%) and Jugodata (6.3%).



Graph 15. Where computer was purchased



#### 4. Which kind of computer do you own?

The highest numbers of households in the sample who own a computer own the Pentium IV (50.6%), the computer owned by the least amount of respondents is the AMD Duron (just 0.5%).

Of the households that own a Pentium I, 12.5% own two computers, while the rest own only one. Of these

: 5.2% of households are from the south region; 5.9% of households have more than six members; 6.7% of households have one child; 13.3% of households have three or more members employed; and 7.5% of households bought the computer before 2000.

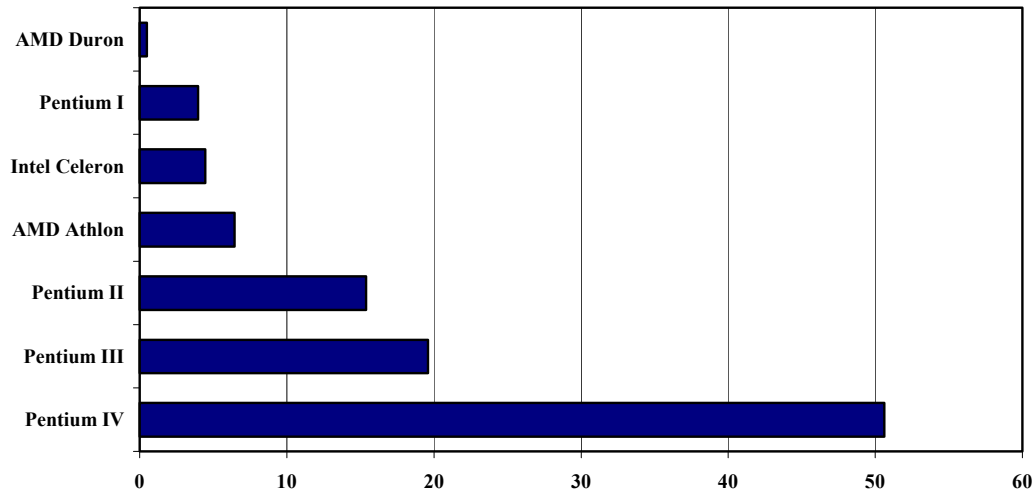
A little bit less than 5% own the Pentium II, often these are owned by: households in the central region; households with between four and six members (16.6%); households without children (25%); households with a monthly income between €400 and €500 (18.6%); households that bought the computer before 2000 (34.4%). In households that own the Pentium III, 2.6% own two or three computers of that generation.

An average of 19.6% of households own a Pentium III, these are: those who live in the south region (20.6%); those with no more than six members (29.4%); those with two children (23.7%); those with three or more members employed (26.7%); those with an average monthly income less than €200 (25.6%); as well as those who bought the computer before 2000 (30.1%).

Of the households that own a Pentium IV, 2.9% own two of computers of this kind. 50.6% households own a Pentium IV. These comprise: 53.3% of households that live in the central region; 55.6% with one child; 53.4% with two employed in household; 55% of households with an average monthly income of more than €700.

A little less than 6% own an Intel Celeron, it is often owned by: those who live in the south region (6.2%); those with two children (6.9%); those with two employed members of households (5%); and those with an average monthly income from €200 to €300 (10.1%).

All households that own AMD Duron or AMD Athlon, own one computer of this kind. Of the 6.5% of households that own an AMD Athlon: households from the central region (7%); households with more than six members (11.8%); those who have one child (8.9%); those with one employee member (7.9%) and monthly average income between €500 and €700 (11.9%).

**Graph 16. Which type of computer do you own?**

### 5. Which equipment do you possess?

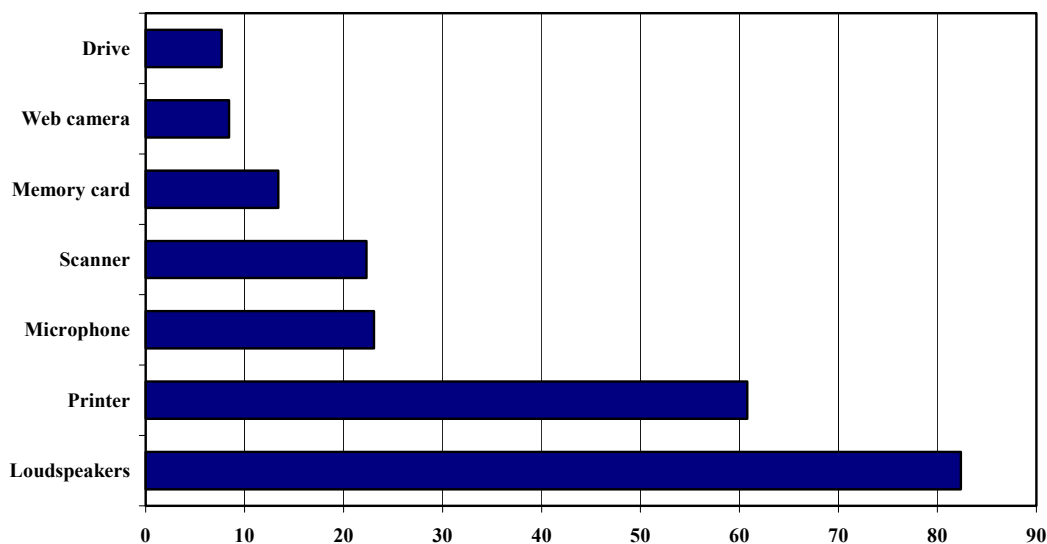
Among those respondents who own computer, the majority of them have loudspeakers (82.4%) and a printer (60.8%) as accompanying equipment. Households that own loudspeakers, have 1.9 of them on average. A minority of households own a web-camera (8.4%) and a transferable drive (7.7%), but it should be noted here that a large number do not know the meaning of the term “transferable drive”.

Of the average 60% of households that own a printer, are mostly households: from the central region (63.4%); with more than six family members (70.6%); with no children (70%); with two employees (65.3%); with an average monthly income higher than €700; where respondents have a faculty diploma (67.2%); where respondents are doing private business (79.4%).

Households who own printers have 1.1 of them on average. A web-camera is mostly owned by households that: live in the south region (11.2%); have more than six family members (11.8%); have two kids (10.4%); have two employees in one household (8.7%); have a monthly income between €200 and €300; respondent is highly educated or still studying; respondent is an entrepreneur or doing private business.

Households that own a web-camera, have one on average. Memory-card reader owners are 13.4% of households that own a computer. Most often owners are households: from the south region (18.6%); with four to six family members; with two children (14.5%); with two employees (14.2%); with an average monthly salary over €700 (20%).

*Graph 17. Computer equipment*



### **6. Most often used programs**

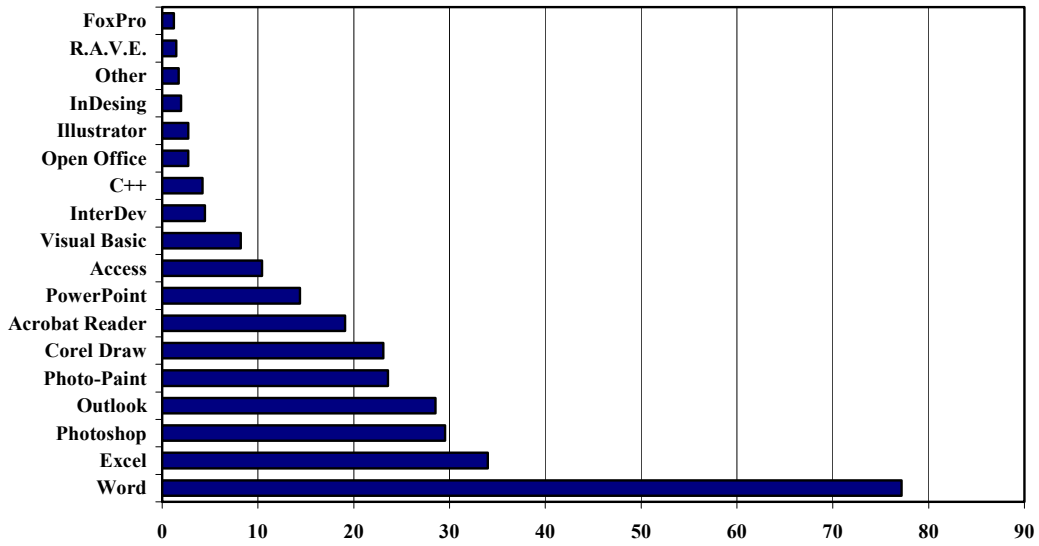
Only respondents who own computers answered this question, with the option of providing multiple answers. The majority of respondents use: Word (77.2%), Excel (34%), Photoshop (29.5%) and Outlook (28.5%). Use of any of the Adobe Creative Suite programs (Photoshop, Illustrator, Acrobat Reader, InDesign, GoLive) was measured at 40.2%.

These creative programs are most often used by people who live in the central region (44.4%), households with more than six family members (52.9%); respondents with no children (50%); with no employed persons in the household (50%); households with monthly incomes between €400 and €500; respondents between 19 and 30 years old (54.5%); respondents with a high school degree (44.8%).

By comparison, an average of 38% of households use some of the programs from the Corel group (Corel Draw, Photo Paint, R.A.V.E.): 41.2% of respondents from the central region, 52.9% from households with up to six family members; 41.7% from households with no children; half of the respondents with no employed family member; 45.7% from households with a monthly salary of €400 to €500; 43.4% under 18 years old; 39% of respondents have finished or still attending high school; and 50% of senior people from government companies.

Further comparison is the group of 15.1% who use any of the programs from the Microsoft Visual Studio group: respondents from the central region (16%); households with more than six family members (23.5%); households with an average monthly income under €200 (25.6%); respondents between 51 and 60 years old (25%), and respondents who finished or still attend high school.

Graph 18. Most used programs

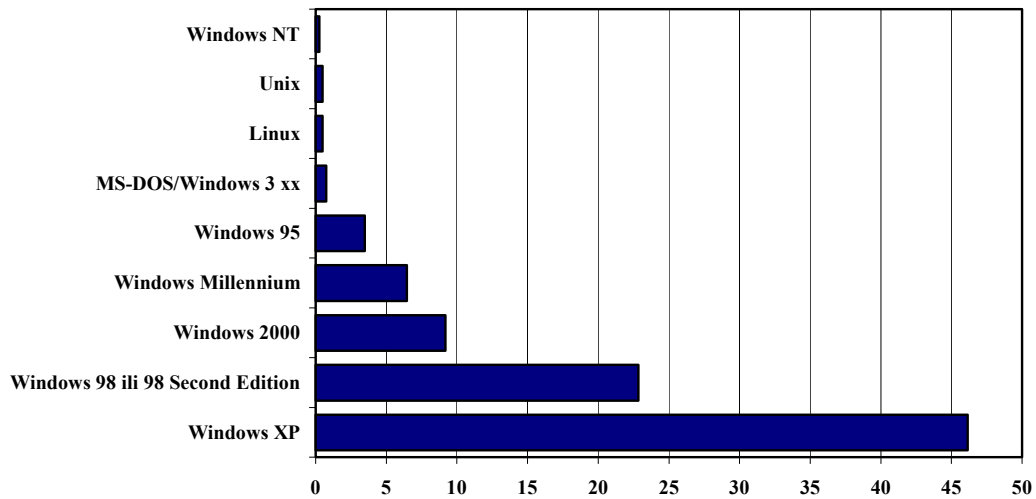


7. Use of a certain type of operating system

The majority of respondents, who own a computer at home, use Windows XP (46.2%), followed by Windows 98 or 98th second edition (22.8%). A lower number of respondents (0.2%) use Windows NT, then UNIX (0.6%) and Linux (0.6%).

Of the 46.2% who use Windows XP: respondents are from the central region (51.4%); households with up to three family members (54.3%); households with two employed people (49.8%); households with an average monthly income between €300 and €400 (55.6%); respondents are between 51 and 60 years old; studying or finished college (48.3%), and all retired persons.

Graph 19. Operational systems



**INTERNET**

***1. How many family members under 18 years of age use the Internet?***

Respondents, who have children less than 18 years of age in their households, were asked about this issue. Among them, 87.2% answered. Of that number, in 57.1% of households the Internet is not used by any of their children; in 18.8% of cases one child is a user, and in 24% two or more children are using it.

Analysis shows that 24% of households have between four and six members; 33.2% of households have two employed people, 58.2% of households have a monthly income between €500 and €700, 42.8% of respondents finished college or were still studying, and 43.7% of those who owned a computer.

***2. Do households use the Internet?***

Of the 87.1% of respondents who answered this question; 47.7% do and 52.3% do not use the Internet.

Analysis of the average of 47.7% of those who are using the Internet shows: households from the central region (53.4%), households with two employed people (59.4%); households with an average monthly income between €500 and €700 (76.7%). Respondents between 19 and 30 years old are the most common users of the Internet (60,5%), and those who finished college or are still studying (61.7%) and live in households that own a computer (75.4%).

***3. How often is the Internet used?***

96.8% of respondents who use the Internet answered this question. Among them, 40.7% use the Internet daily, 35.4% at least once a week, 16.3% two to three times in a month, and 7.5% of respondents from this group are using it less than once in a month. Analysis of the 40.7% of respondents who use the Internet daily shows: 52.9% of them are from the southern region, 59.3% of households have no children, 42.4% of households have two employees, half of the respondents have an average monthly salary over €700, 54.5% are between 19 and 30 years of age, 5% finished college or are still studying, 52% of respondents who own a computer, and 59.1% of people who use a computer daily.

***4. Where is the Internet mostly used?***

94.9% of respondents who use the Internet answered this question. Among these, 67.2% use the Internet at home, 12.8% at work, 9% at their cousins, and 5.9% in the Internet café, and in 5.1% of all cases in a school or faculty. The Internet is more often used at home by: southern region households (75%); households with earnings in the interval of €500 to €700; older respondents (90% and between 51 and 60 years of age); those who finished college (70.1%); housewives (85.7%); those who use a computer daily (79.6%).

Of the 5.9% who use the Internet in an Internet cafe: 12.3% of respondents were from the south, 14.3% with no employees in their households; 17.3% with the lowest earning in their household; 8.3% of those who are younger than 18 years of age, and 17.4% of respondents who use the internet twice or three times in a month.

***5. Do you use e-mail?***

92% of respondents answered this question. 80.2% of them use email and 19.8% do not. E-mail is mostly used by: respondents who live in the central region (84.4%); those who live in households with

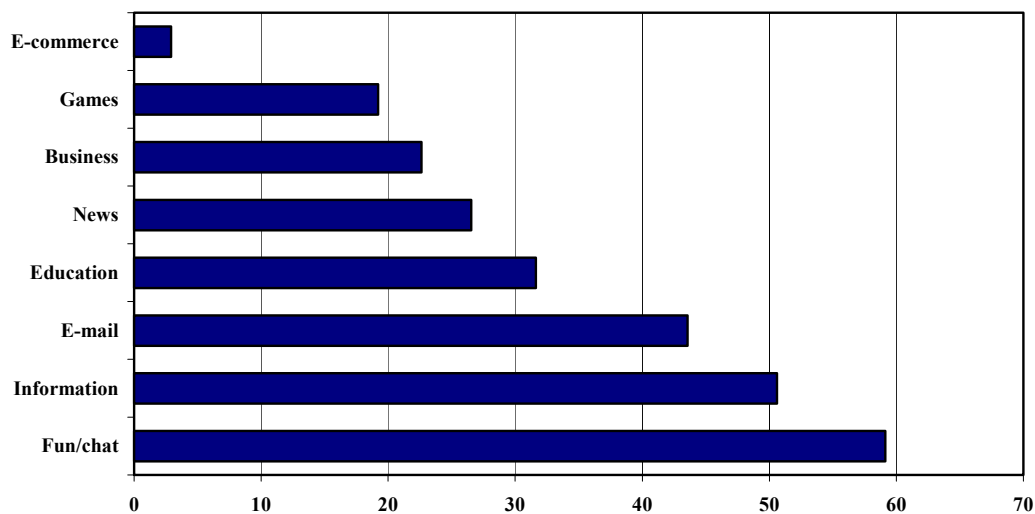
up to three members (81.1%); respondents with three or more employees (84.6%); respondents who are between 51 and 60 years of age (90%), and those who own computer in their households (90.1%).

#### **6. For what purposes is the Internet mostly used?**

Respondents who are Internet users answered this question. They had the opportunity to provide multiple answers. Of the total number of respondents, the majority of them are using the Internet as an entertainment/chat (59.1%); for information (50.6%) and for e-mail (43.6%). A small percentage uses it for e-trade purposes (2.9%).

Analysis of the 22.6% of people who use the Internet for business purposes shows; 28.3% live in a central region; 35.3% have monthly earnings higher than €700; 53.1% of Internet users are between 41 and 50 years old; 56% have a faculty degree or are still studying; 60% of respondents are private entrepreneurs; and owners of businesses, and 32.1% use the Internet daily.

*Graph 20. Purposes the Internet is mostly used for*



#### **7. Does the household own a modem?**

Respondents who own a computer answered this question. The term modem means possession of any kind of Internet connection. Among households that have a computer, 64.8% have an Internet connection, which is 26.4% of the sample group. An Internet connection is mostly present in households: from the central region (70.8%); in households with more than six members (70.6%); in households with two children (66.5%); in households that don't have employees (75%); and households with an earnings in the interval of €500 to €700 (72.9%).

#### **8. Type of connection**

90.4% of respondents who own both a computer and a modem answered this question. 80.5% have a dial-up connection; 15.3% ISDN; 3.8% ADSL and 0.4% some other connection (GPRS). Of the 15.3% of households that have an ISDN connection: 22.2% of the households are from the north; 18.2% have more than six family members; 22.8% have three or more children; 21.1% have three or more employed members; and households with monthly earnings bigger than €700. More than 17% of households that have two or more children using the Internet have an ISDN connection.

***9. What way are you are paying Internet hours?***

95.8% of all Internet connected users answered this question. The majority pay for the Internet by the hour (71.4%); then monthly (21.5%); but only 3.1% of households use special packets. 4% are from the central region; 5% are households with up to three family members; 4.8% are households with one child; 10% with three or more employees, and 4.7% are households in which none of the children are Internet users.

Of the total number of respondents with an Internet connection, 96.2% answered the question about an Internet provider. Among them, 87.6% are satisfied with Internet provider services, and 12.4% of them are not. The main respondent complaints are connected to the price, speed and bad connection. Mostly unsatisfied are: respondents from the south (16.4%); households with one child (16.4%); with no members employed (33.3%); households with earnings in the interval of €200 to €300 (24.2%); from 31 to 60 year old respondents (18.2%); respondents who finished high school or are still attending one (17.2%); households with no children and are internet users (21.7%), and daily internet users (13.8%).

***10. Reasons for not using the Internet***

This question was set for respondents who are not Internet users. Among them, 66.9% answered the question. Out of that number, 30.9% said that they don't have a need for one; 23.6% think that the internet connection price is too high; 5.6% find internet hours expensive; 4.7% have no modem; 3.3% find using the Internet very complicated, and 2% have very old computers.

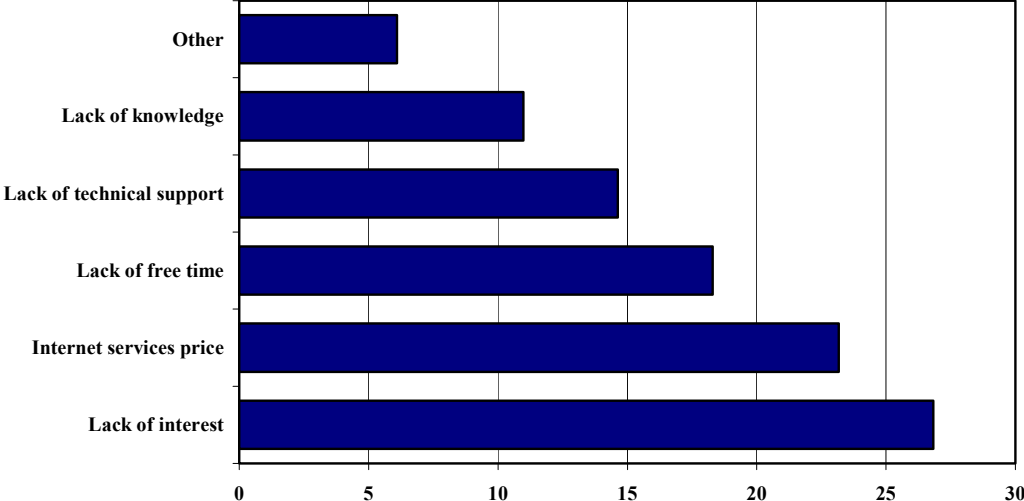
Analysis of the 23.6% of respondents who consider the internet price to be very high: 34.9% of households were from the north; 25.5% of households have four to six children; 27.7% have one employed household member; 32.6% of households have monthly earnings lower than €200.

Also agreeing with the price level issue were: 33.3% of respondents between the ages of 19 and 30 years of age; 31.4% who finished or are still attending high school; 40% of military officers; 25.4% of households where none of the children is internet user, and 26.1% of respondents who don't use computers at all.

***11. What is the reason for not having an Internet connection?***

57.7% of all household respondents that own a computer but don't have an Internet connection answered this question. Among them, 26.8% said they are not interested; 23.2% said that the internet services are way too high; 18.3% do not have enough time for using it; 14.6% have no technical conditions for internet use; 11% of them do not know how to use it, and 6.1% have some other reasons (e.g. lack of phone connection). Of the 14.6% of respondents who do not have technical capacities for internet use: are mostly households from the central region (20%); those with up to three household members (20%); households with one employee (17.1%); households with monthly earnings lower than €200 (25%), and who have only one child as an internet user (27.3%).

Graph 21. Reason for not having an Internet connection





**INFORMATION SOCIETY DEVELOPMENT FROM THE HOUSEHOLD VIEWPOINT**

***1. Which kind, and where did you buy computers and equipment during the year of 2004?***

Out of the total number of households who own computers, 37.7% purchased either a computer or equipment during the past year: 38.8% bought a computer, 79.6% bought equipment, but many households bought both. Most purchased equipment was: printer (33.9%); loudspeakers (24.8%); mouse (22.3%) and scanners (20.7%). Of the total number of households, 52.5% named companies from which they purchased computers.

The majority of buyers bought computers from: Cikom; Neutron computers; Platon computers; Tagor and outside Montenegro (9.4% each). Of the number of households who bought equipment during the last year, 53.7% named companies where they made the purchase. 8.3% bought a computer outside Montenegro; 6.7% in Montex Electronic; and in the following companies: Chip, Jugodata, Modro, Multiprint and Platon computers (5% each).

***2. How much of household financial resources were spent for computer and equipment purchased during the year of 2004?***

Of the total number of households, which own a computer, 66.3% answered this question. 47.9% spent €250; 27.7% from €500 to €1,000; 18.4% from €250 to €500, and only 6% spent over €1,000 during 2004 for this purpose. Analysis of the 6% of households that spent more than €1,000 shows that: 10.7% of those are from the south; 8.5% from households with two children; 7% from households with one employed member; 10% of households with monthly earnings in between €200 and €300, and 13.4% in which every member is using a computer.

***3. How much of household financial resources will you spend in the year 2005?***

Of the total number of households who own or intend to buy a computer in the future, only 41.6% answered this question. Among them, 55.4% intend to spend up to €250; 30% in between €250 and €500; 10.8% from €500 to €1,000, and only 3.7% of households intend to spend more than €1,000 for computer and equipment purchases during the year of 2005.

***4. Who from the household wants to improve their knowledge in the information technology area and under which conditions?***

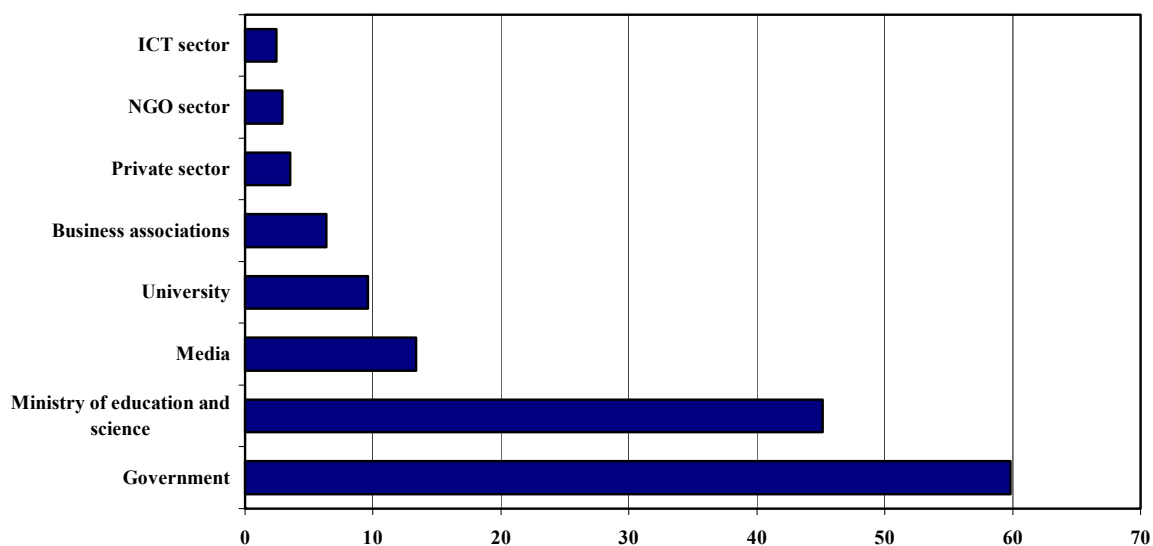
Of the total number of households from the sample, 59.7% answered this question. The majority of respondents gave multiple answers, so we ended up with a total number of 67.4% of answers. The majority of households wanted education for children under 18 years of age (72.2%); other responses were: husband/wife (23.7%); children older than 18 (15.3%), and other household members (1.7%). If wanting to learn, some preconditions need to be fulfilled: financial resources (29.8%); education in schools (19.9%), and better or even free courses (17.7%). Only 23.9% of respondents who answered the question about education improvement gave their opinion about what preconditions needed to be fulfilled.

### 5. Who is responsible for information society development in Montenegro?

55.4% of respondents from the sample answered this question. Among them, there were some who gave multiple answers. The majority of respondents (59.8%) consider that the Montenegrin Government should be responsible for creating a relevant climate for information society development, and 45.1% think that it is the obligation of education and science ministry. The lowest percentage of households (2.4%) consider that companies from this field of work and non government organizations (2.4%) should help with ICT sector development.

Analysis of the 59.8% of respondents who find the government responsible for ICT sector development shows: central region households (64.3%); those with up to three family members (65.6%), those with one child (64.3%); households with two employed members (61.3%); those with monthly earnings in between €500 and €700 (67.2%); households which own computer (64.8%), and those households with more than three family members who are computer users (69.9%).

**Graph 22.** Who is responsible for development of the information society in Montenegro?



### 6. What should be done for better use of computers and the Internet in Montenegro?

Respondents made some suggestions for improving computer and Internet use in Montenegro. 55.3% of respondents gave suggestions, but most of them had similar answers and more than one suggestion. Among respondents who gave their suggestions, the majority of them think that computer prices should be lower (29.7%); schools need to provide conditions for education in this area (16.7%), and 13.4% think that living standards should be improved first.

**SURVEY ON COMPUTER AND INTERNET USAGE IN ENTERPRISES**

**BASIC QUESTIONS**

***1. Is the company using computers?***

This question was answered by 99% of the surveyed companies from the sample. Of that number 93.4% of them are using a computer. Of the 6.6% of companies that do not use a computer: 10.7% of companies were founded from 1990 to 1995. Observing the structure of the companies from the aspect of size, it can be observed that the computer in doing business is not being used by 13% of micro companies, while every company that has more than 10 employees, in the sample, uses a computer. 20.4% of companies with an annual income up to €100,000 and 4.8% from €100,000 to €250,000 is not using computers, while every company with an annual income higher than €250,000 uses computers. Observed by regions, 17.5% of companies that are in the northern part of Montenegro do not use a computer.

***2. What is the main reason for not using a computer?***

Of the total number of surveyed companies 6.6% of them stated that they do not use a computer. The surveyed companies had the possibility to state several reasons. The greatest number stated the basic reason as the there being no need (46.2%) and a lack of funds (46.2%). A lack of knowledge was stated by 7.7% of the companies, while no company stated that the lack of interest by the workers is the reason for not using a computer.

Of the total number of surveyed people that do not use a computer in doing business stated other reasons for not using a computer: computer procurement is currently on course, and a lack of time for computer procurement.

Analysis of the 46.2% of companies that state that the basic reason for not using the computers is the lack of funds for procurement and maintenance: 57.1% of companies were from the northern part of Montenegro; 100% of companies were founded prior to 1990; and 60% of companies have an annual income up to €100,000.

Of the 46.2% of companies that have stated no need as a basic reason for not using a computer: 100% of the companies are in the central region of Montenegro and 100% of the companies have an annual income from €100,000 to €250,000.

***3. Type of computers, quantity and average age***

The total number of computers in the companies from the sample is 1.842, while the average number of computers in a company is 9.9. The type of computer that is most common in the companies from the sample is Pentium IV (678.6)

**Intel Pentium I and older generations**

***Number of computers***

Of the total number of companies that use a computer, 9.7% of them use Intel Pentium I or older type. The average number of computers in the companies from the sample that use Intel Pentium I is 3.7. To be more precise, 61.1% of companies own one computer, 16.7% two to five and 22.2% more than five computers.

Analysis of the 22.2% that use more than five computers of type Intel Pentium I show: 66.7% of companies were founded prior to 1990; and 100% are large companies.

*Average age of the computer*

Of the total number of those that use Pentium I 72.2% stated the age of the computer. The average age of a computer in the companies from the sample that use a Pentium I is 6.3 years. From the total number of companies that have stated the average age of a computer 46.2% own a computer aged from one to five years, while 53.8% of companies have a computer older than five years. Analysis of the 53.8% of companies that have a computer older than five years: 100% of companies were founded prior to 1990; 100% of companies do not have more than 250 employees; 100% of companies have an annual income up to €100,000; and 66.7% of companies are in the central region of Montenegro.

**Intel Pentium II**

*Number of computers*

Of the total number of companies that use a computer, 26.5% of them use an Intel Pentium II. The average number of computers in the companies from the sample that use Intel Pentium II is 2.7. Moreover, 53.1% of them own one computer, 42.9% two to five, and 4.4% more than five computers. Analysis of the 53.1% of companies that have one computer of the type Intel Pentium II: 100% of companies were founded after 2000; 83.3 are micro companies and 100% of companies have an annual income from €100,000 to €250,000.

*Average age of the computer*

Of the total number of companies that use a Pentium II 20.4% did not state the average age of their computers. The average age of computers in companies that use Intel Pentium II is 4.4 years.

Of the total number of companies that have stated the average age of the computer the largest number of them (that is 76.9%) have a computer of one to five years of age, 17.9% of companies own a Pentium II older than five years. Analysis of the 17.9% of companies that use a computer older than five years 72.7% of the companies are from the northern part of Montenegro; 42.9% of companies were founded after 2000; 50% are large companies; and 33.3% of companies have an annual income from €500,000 to €1,000,000.

**Intel Pentium III**

*Number of computers*

Of the total number of companies that use a computer 42.7% uses an Intel Pentium III. The average number of computers in the companies from the sample that use Intel Pentium III is 3.4, which means that 51.9% of companies own one computer, 35.4% from two to five and 12.7% more than five.

Analysis of the 51.9% of companies that use an Intel Pentium III: 72.7% of companies are in the northern part of Montenegro; 70% of companies were founded after 2000; 79.2% are micro companies and 83.3% of companies have an annual income form €100,000 to €250,000.

*Average age of computers*

Of the total number of companies that use a Pentium III, 10.01% of them did not state the age of the computer. The average age of computers in companies that use Pentium III is 3.1 years. Of the total number of companies that have stated the age of their computers, the most frequent age (88.5%) is one to five years, 2.8% of computers are older than five years and 8.5% have a Pentium III are less than one year.

Analysis of the 88.7% of companies that have a Intel Pentium III aged one to five shows: 92.9% of companies are in the central part of Montenegro; 91.7% of companies are founded up until 1990; 100% are micro companies; and 84.6% of companies have an annual income over €1,000,000.

### **Intel Pentium IV**

#### *Number of computers*

Of the total number of companies that use a computer 68.6% use an Intel Pentium IV. The average number of computers in the companies from the sample that use a Pentium IV is 7.6. Moreover 34.6% of them own one computer, 46.5% own two to five computers and 18.9% of those companies own more than five computers. Analysis of the 18.9% of companies that use more than five Pentium IV shows: 23.1% of companies were founded after 2000; 75% are large companies and 33.3% are companies with an annual income of over €1,000,000.

#### *Average age of the computer*

Of the total number of companies that use a Pentium IV, 7.1% have not stated the age of the computers. The average age of computers in the companies that use a Pentium IV is 1.8 years. Of the total number of companies that have stated the age of the computers the largest number, 54.2% of them, have a computer of age one to five, and 44.9% of them own computers less than one year of age. Analysis of the 54.2% of companies that use a computer aged one to five years shows: 58.3% of companies are from the south of Montenegro; 66.7% of companies were founded prior to 1990; 50% are large companies and 62.5% of companies have an annual income from €500,000 to €1,000,000.

### **Intel Celeron**

#### *Number of computers*

Of the total number of companies that use a computer, 7% of them use an Intel Celeron. The average number of computers that use an Intel Celeron is 20.8. Moreover 46.2% of them own one computer, 15.4% two to five, and 38.5% more than five computers. Analysis of the 38.5% of companies that in their business use more than five computers shows: 50% of companies are from the southern part of Montenegro, while no company from the northern part of Montenegro uses more than five Intel Celeron computers; 50% of companies were founded from 1995 to 2000; 100% are large and medium companies and 75% are companies with an annual income of over €1,000,000.

#### *Average age of computers*

Of the total number of companies that use Intel Celeron, 7.7% did not state the age of their computers. The average age of computers in companies that use Intel Celeron is 1.6 years. Of the total number of companies that have stated the average age, the largest number (58.3%) of them owns a computer of less than one year of age, while 41.7% of companies own a computer aged one to five years. Analysis of the 58.3% of companies that use an Intel Celeron less than one year old shows: 75% of companies are in the central region of Montenegro, 100% of companies were founded from 1990 to 1995; and 100% are medium companies.

### **AMD Duron**

#### *Number of computers*

Of the total number of companies that use a computer 2.2% of them uses an AMD Duron. The average age of computers in the company where AMD Duron is used is 7.0; meaning that 50% of companies own one computer and 50% owns more than five computers. Analysis of 50% of companies that have more than five AMD Duron computers shows: 100% of companies are from the southern part of

Montenegro; 50% of companies were founded from 1995 to 2000; 33.3% are micro companies; and 100% of companies have an annual income of over €1,000,000.

### *Average age of computers*

The average age of computers in companies that use AMD Duron is one year.

### **AMD Athlon**

#### *Number of computers*

Of the total number of companies that use a computer 5.4% of them uses AMD Athlon. The average number of computers in companies that use AMD Athlon is 9.5. Moreover 40% of them own one computer, 30% two to five. Analysis of the 40% of companies that use one AMD Athlon computer shows: 100% of companies are from the northern part of Montenegro; 75% of companies were founded after 2000; 75% are micro companies; and 100% are companies that have an annual income from €250,000 to €1,000,000.

#### *Average age*

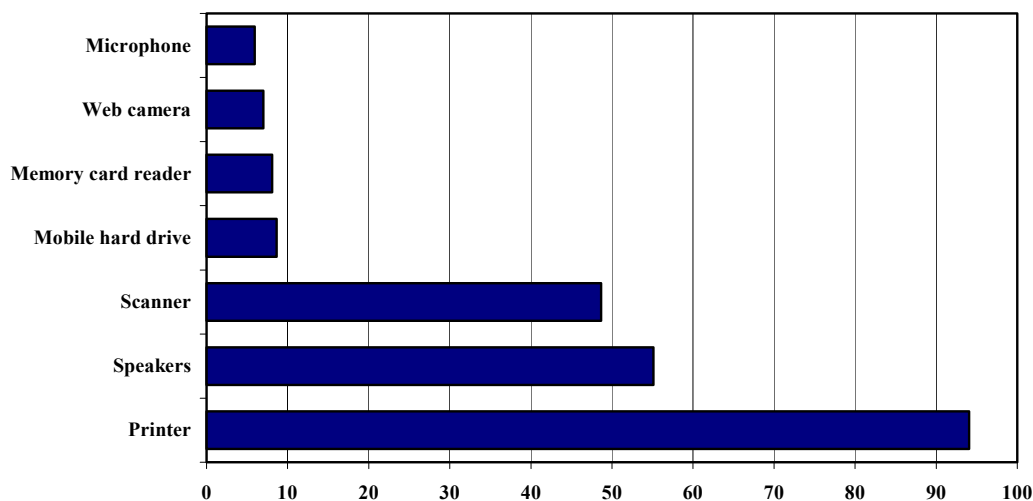
Of the total number of companies that use an AMD Athlon computer, one surveyed company did not state the age of the computer. The average age of computers in companies that use AMD Athlon is 1.8 years. Of the total number of companies that have stated the average age of the computers, the biggest frequency (66.7%) is for computers from one to five years old, while only 33.3% of companies own an AMD Athlon older than a year.

Analysis of the 66.7% of companies that have a AMD Athlon from one to five years shows: 100% of companies are from the northern part of Montenegro; 100% of companies were founded after 2000; 100% are medium companies; and 33.3% are companies with an annual income over €1,000,000.

### **4. Computer equipment**

Of the companies that own computers, the most common computer equipment was printers (94.1%) and speakers (55.1%).

*Graph 23. Computer equipment*



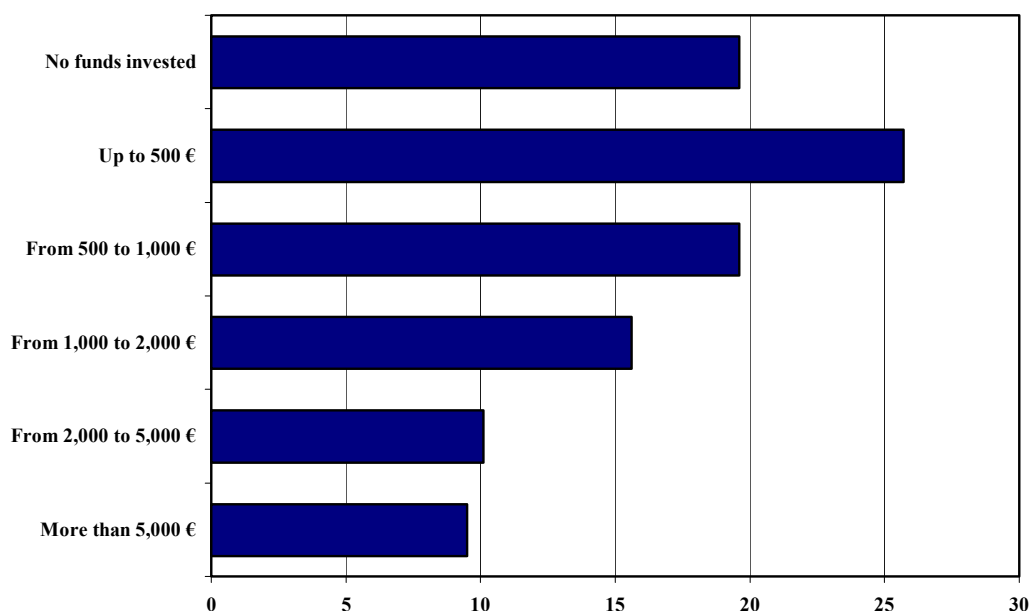
On average, the companies that own a printer as an accessory have 4.1 pieces. Microphones are the least owned accessory (5.9%) and memory card readers (8.1%). Analysis of the 94.1% of companies that own a printer shows: 97% of companies are from the northern region; 97.1% of companies were founded after 2000; 100% are large and medium companies, and 100% are companies that have an annual income from €100,000 to €250,000.

Analysis of the 8.1% of companies that own a memory card reader shows: 10.6% of companies are from the central region; 7.4% of companies were founded from 1995 to 2000; 25% are large companies, and 19% are companies that have an annual income from €500,000 to €1,000,000.

**5. What is the average annual expenditure on the procurement of computers and computer equipment in the year 2004?**

Of the total number of companies that use a computer 96.8% of them responded to this question about expenditure on the procurement of computers and computer equipment in 2004. Among them 25.7% had expenditures up to €500 for the procurement of computers and computer equipment.

**Graph 24.** Average resources used for computer and equipment purchasing in 2004



Analysis of the 25.7% of companies that spent up to €500 in the year 2004 for the procurement of computers and computer equipment shows: 42.4% of companies were from the northern region; 34.4% of companies were founded after 2000; 33.3% are micro companies; and 26.9% are companies that had an annual income from €250,000 to €500,000.

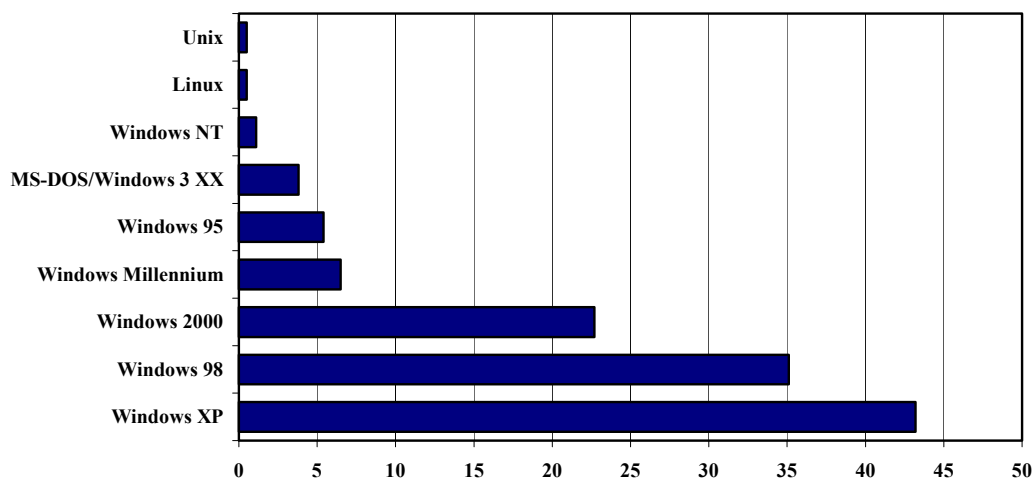
Analysis of the 19.6% of companies that have not had expenses for the procurement of computers and computer equipment shows: 30.3% of companies were in the northern part of Montenegro; 25.8% were founded prior to 1990; 23.1% are small companies and 35.9% are companies that have a annual income up to €100,000.

**6. Type of operating system commonly used in the company**

The type of the operating systems often used in surveyed companies is Windows XP (43.2%) Windows 98 (35.1%) and Windows 2000 (22.7%).



*Graph 25. Type of operating system most commonly used in the company*

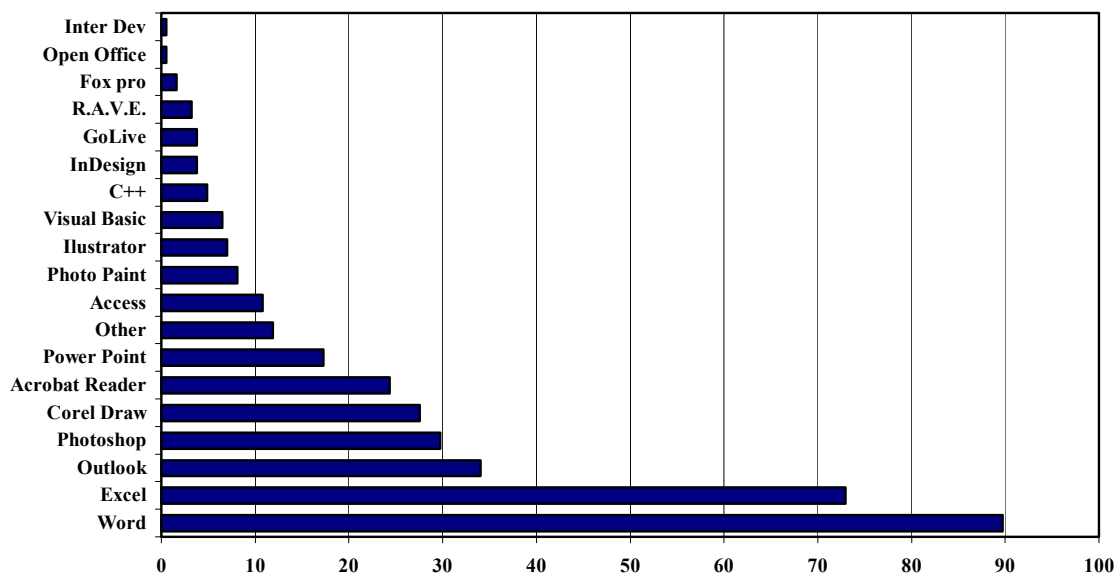


The operating systems least used in the surveyed companies are Linux (0.5%) and Unix (0.5%).

### *7. Most used application programs*

Among all companies, the most used programs are Microsoft Word (89.7%) and Excel (73%).

*Graph 26. Most commonly used programs and applications*



The least used programs are: Open office (0.5%), Inter Dev (0.5%) and Fox pro (1.6%).

### **Open Office**

Open office is used by only 0.5% of companies using a computer.

### **Adobe creative Suite**

Of the total number of companies that own a computer 29.7% of them use Photoshop; 24.3% Acrobat

Reader; 7% Illustrator; 3.8% InDesign and 3.8% GoLive.

Analysis of the 39.5% of companies that use some of the programs from the Adobe Creative Suite shows: 52.9% of companies were founded after 2000; 57.9% are medium companies; and 48.8% are companies with an annual income over €1,000,000.

**Corel**

Of the total number of companies that own a computer, 27.6% of them use Corel Draw. 8.1% Photo Paint and 3.2% R.A.V.E.

Analysis of the 28.6% of companies that use some of the Corel programs shows: 38.2% of companies were founded after 2000; 31.6% are medium companies, and 40% are companies with an annual income from €100,000 to €250,000.

*Microsoft Visual Studio*

Of the total number of companies that own a computer, 6.5% use Visual Basic, 4.9% C++, 1.6% FoxPro and 0.5% InterDev.

Analysis of the 10.3% of companies that use some of the programs from the Microsoft Visual Studio shows 15.2% of companies are from the northern part of Montenegro; 16.1% of companies were founded prior to 1990; 15.8% are medium companies; and 17.1% are companies have an annual income over €1,000,000.

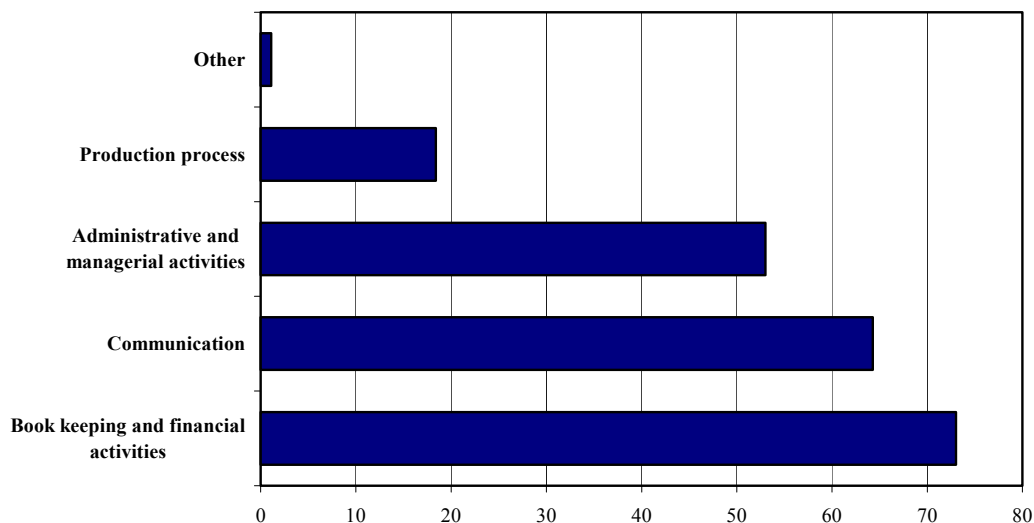
**Other programs**

Of the total number of companies that use a computer in doing business only 11.9% of them use some other applications/programs. Of the total number of companies that use some other programs, 27.3% stated AutoCAD, 18.2% Oracle, 9.1% Archi Cad and 9.1% Winamp.

**8. What are the most frequent purposes for using the computer?**

Surveyed companies mostly use the computer for bookkeeping and financial activities (73%) and communication (64.3%).

*Graph 27. What purposes computer is used for in enterprise?*

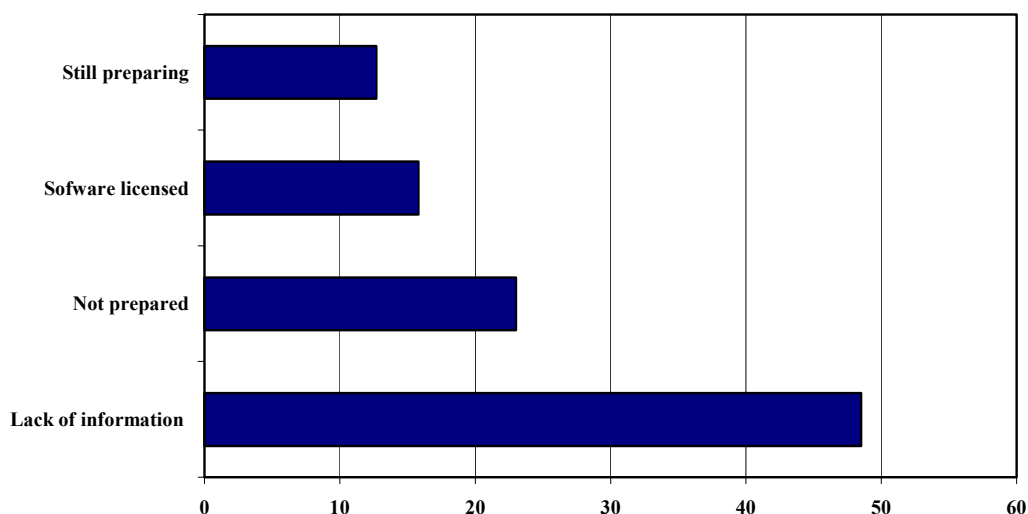


**9. Are you preparing for the incoming software legalization?**

Of the total number of companies that own a computer 10.8% have not given a response to this question. Among those that have responded, 48.5% were not informed regarding the legalization, 23% are preparing, while 16.4% of companies already have licensed software.

Of those companies which are prepared for the legalization: 15.1% are companies from the central region; 15.6% are companies founded after 2000; 23.5% are medium companies; and 20% are companies with an annual income over €1,000,000. The preparation for the legalization for most companies is still on the level of contacts and gathering information from other companies, while 80% of companies state that their preparation is still in the phase of planning to buy a license.

*Graph 28. Are you preparing for the software legalization?*



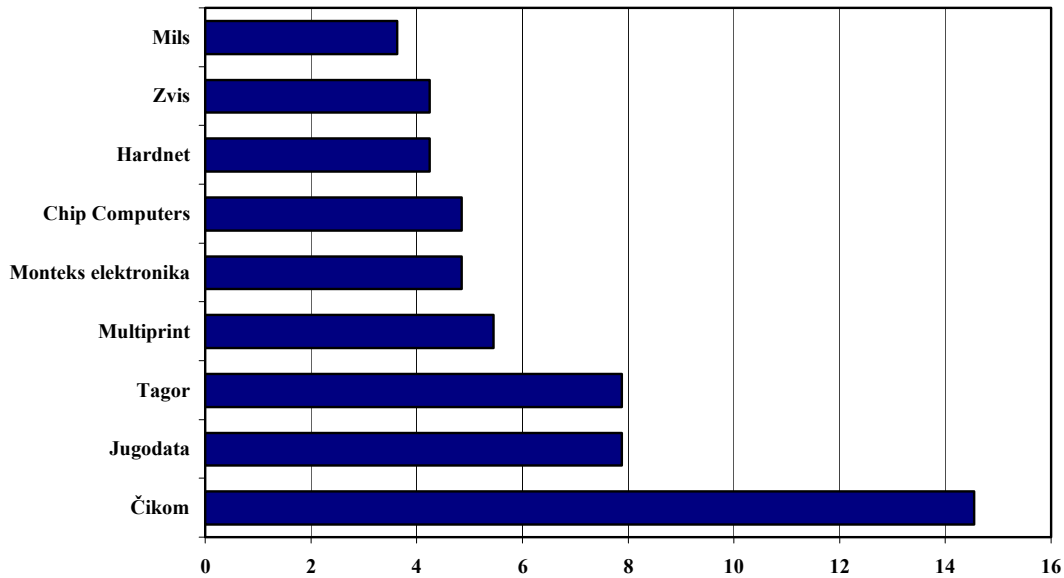
Analysis of the 48.5% of companies that state that they don't have enough information regarding the upcoming computer software legalization: 62.1% of companies are from the northern part of Montenegro; 54.5% of companies were founded in the period from 1990 to 1995; 58.1% are small companies, and 59.4% are companies that haven't had any expenses for the procurement of computers and computer equipment in 2004.

**10. Are the computers bought on the Montenegrin market?**

Of the total number of companies that use a computer in doing business, 97.8% have answered the question about whether the computers were bought on the Montenegrin market. Of that number 91.2% have bought the computers on the Montenegrin market. Analysis of the 8.8% of companies that have procured the computer outside Montenegro shows: 12.1% of companies were founded after 2000; 10.5% are medium companies; and 23.1% are companies that have an annual income from €250,000 to €500,000.

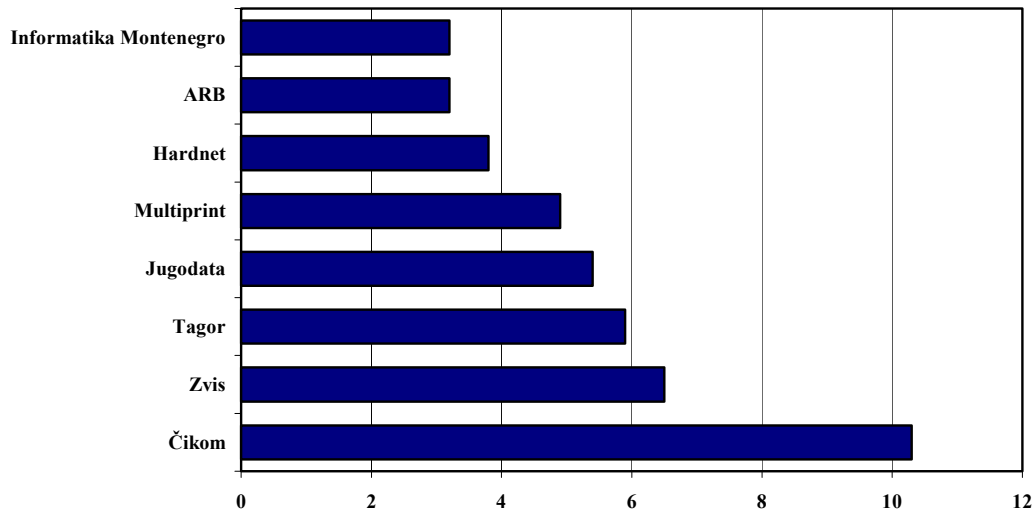
**11. If the response is "yes", state the company in which you have bought the computer?**

Companies that have procured the computers and computer equipment on the Montenegrin market answered this question. The companies procured mostly from: Cikom (14.5%), Jugodata (7.9%), Tagor (7.9%) and Multiprint (5.5%).

*Graph 29. Enterprises in which computers are purchased*

### 12. Where do you maintain your computer and computer equipment?

Of the total number of companies that use the computer in doing business, 89.1% have given the name of the company that maintains their computers and computer equipment.

*Graph 30. Where you have your computers and equipment maintained*

Companies, which the surveyed companies mostly hire for the maintenance of their computers and computer equipment is: Cikom (10.3%) Zvis (6.5%) Tagor (5.9) and Jugodata (5.4%).

### 13. Are you satisfied with the services?

Services are good for 95.2% of surveyed companies. Of the total number of those that are not satisfied with the services 50% stated reasons for dissatisfaction such as: low knowledge of work on computers, irresponsibility, non-professionalism and high cost of services.

Analysis of the 4.8% of surveyed companies that are not satisfied with the services shows: 8.1% of

companies are from the southern region of Montenegro; 9.4% are companies founded after 2000; 7.9% are small companies (while 100% of medium and large companies are satisfied with the services), and 10% are companies that have an annual income from €500,000 to €1,000,000.

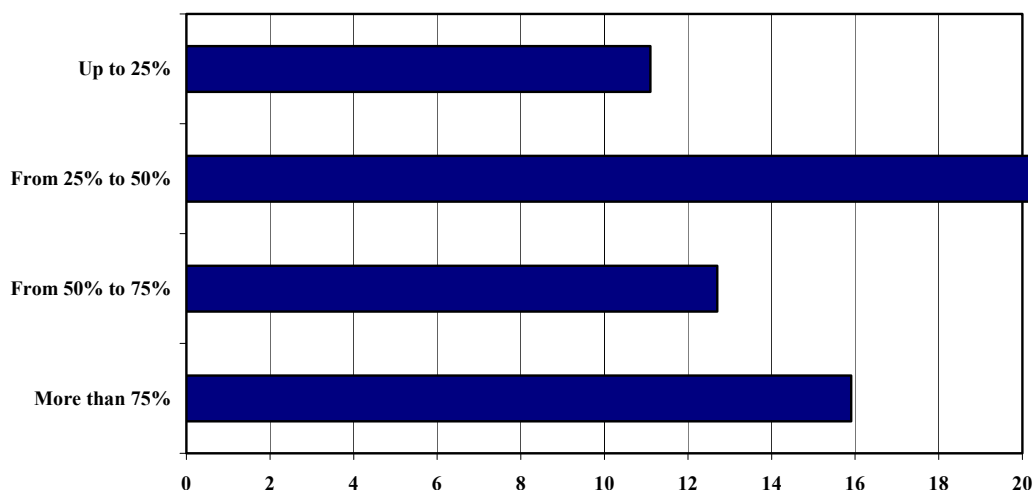
**14. How is your business dependent on the usage of the computer?**

Of the total number of companies that own a computer 91.9% have responded to the question regarding the dependence of the business to computers. The largest number has responded that they could not function (49.4%).

Indicators of the dependence of business to computers are 0.78. The indicator aggregately states the opinion of the surveyed companies about the level of dependence of their businesses to computers. As the indicator is closer to 0, the owners see little dependence between their business and computers, while on the other hand if the indicator is closer to 1, the owners see great dependence between their business and the computers, up to the point that their efficiency without computers would be considerably lowered, or they couldn't even function.

Analysis of the 49.4% of companies that have stated that they couldn't function without the computer shows: 53.3% of companies are from the central region, 53.1% of companies were founded after 2000; 62.5% are medium companies, and 64.1% are companies that have an annual income over €1,000,000.

**Graph 31.** How much enterprise efficiency will decrease if computers are not in use



The greatest number of surveyed companies has stated that their efficiency would be lowered in the interval from 2% to 50%, if they were not to use computers.

**15. Is there a need for the further procurement of computers and computer equipment?**

The response was given by 94% of companies from the sample, of which 55.9% has a need for future procurement of computers.

Analysis of the 55.9% of companies that need new computers and computer equipment shows: 66.7% of companies are from the northern part of Montenegro; 77.4% are companies founded prior to 1990; 100% are large companies; 81% are companies with an annual income from €500,000 to €1,000,000, and 60% are companies that don't use a computer in doing business.

**16. Do you intend to realize some procurement in the near future?**

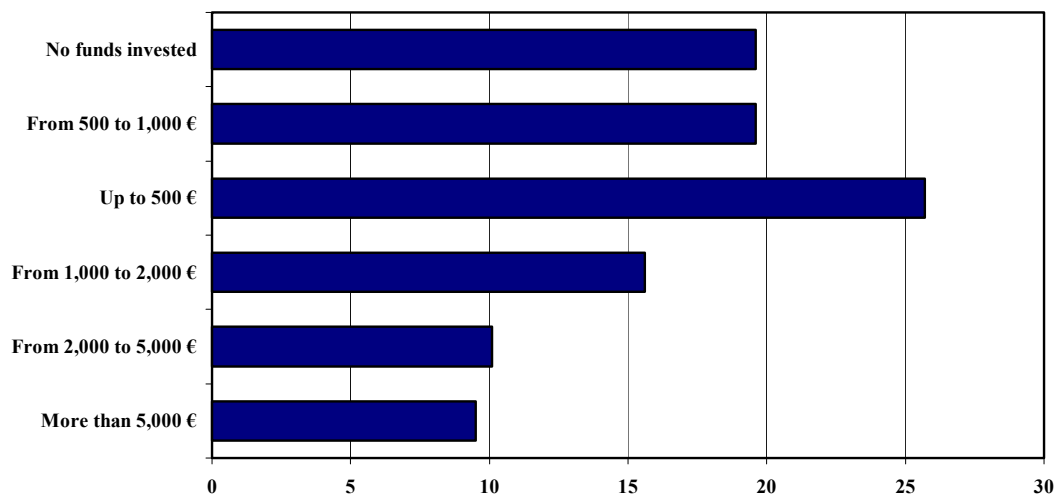
Of the total number of companies that have the need to procure new computers, 54.4% stated that they would make the purchase in the near future.

Analysis of the 54.4% of companies that will realize the procurement in the near future shows: 63.6% of companies are in the central region; 70% of companies were founded from 1995 to 2000; 69.2% are medium companies; 76.2% are companies that have an annual income over €1,000,000, and 66.7% are companies that don't use a computer in doing their business.

**17. What is the average amount the company will spend on the procurement of computers and computer equipment in 2005?**

The biggest percentage of companies that have a need to acquire new computers (27.6%) plan to spend between €2,000 and €5,000 in 2005.

**Graph 32.** *Planned amount of funds invested for the procurement of computers and computer equipment purchases in 2005*



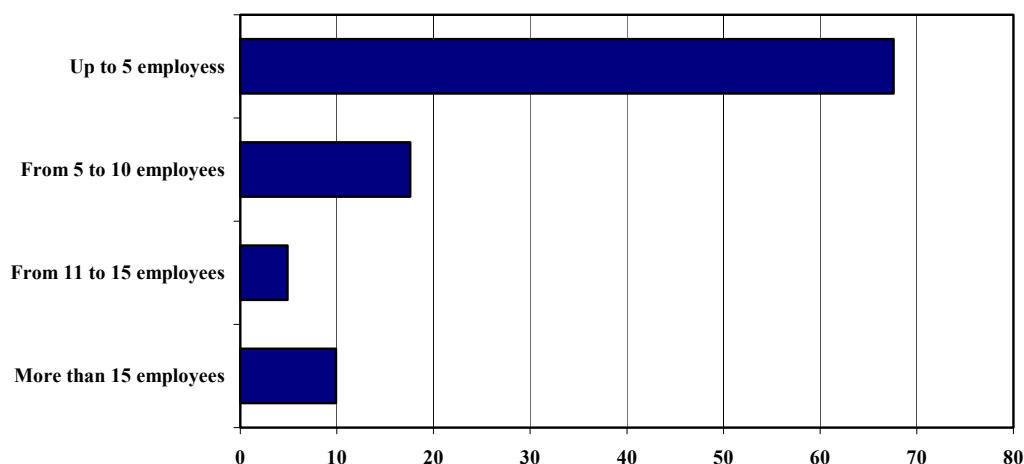
Analysis of the 27.6% of companies that will in 2005 spend €2,000 to €5,000 shows: 28.2% percent are companies from the south of Montenegro; 28% percent are companies that were founded up to 1990; 42.9% are medium companies, and 34.8% are companies that have an annual income of over €1,000,000.

**EMPLOYEE'S EDUCATION**

**1. How many employees in the company are using a computer?**

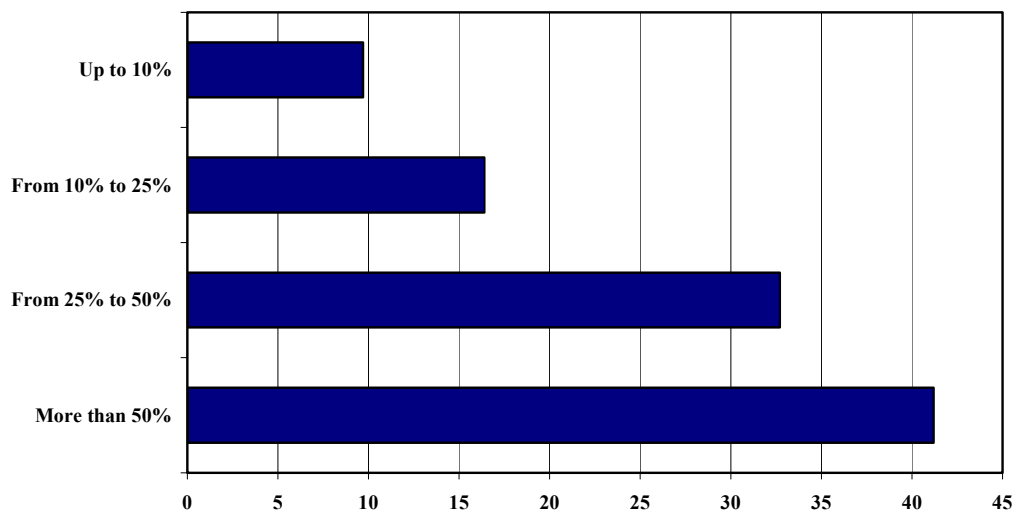
More than half of the companies that use the computer have five or less employees that use them (67.6%). The average number of employees that use the computer in doing business is 11.7%.

*Graph 33. Number of employees that use a computer*



Analysis of the 9.9% companies that have more than 15 employees that use a computer shows: 14.5% of companies are in the central region; 11.3% are companies established from 1995 to 2000; 75% are large companies and 21.1% are companies whose annual income is over €1,000,000.

*Graph 34. Share of employees-computer users related with total number of employees*



Of the total number of companies that use a computer in the more than half employees uses the computer. Analysis of the data shows 50% of companies are in the central region; 57.6% of companies were founded after the year 2000; 63.8% are micro companies; 50% of companies have an annual

income from €250,000 to €500,000, and 51.3% are companies that could not conduct business without computers.

**2. Are there conditions for computer usage education in the company?**

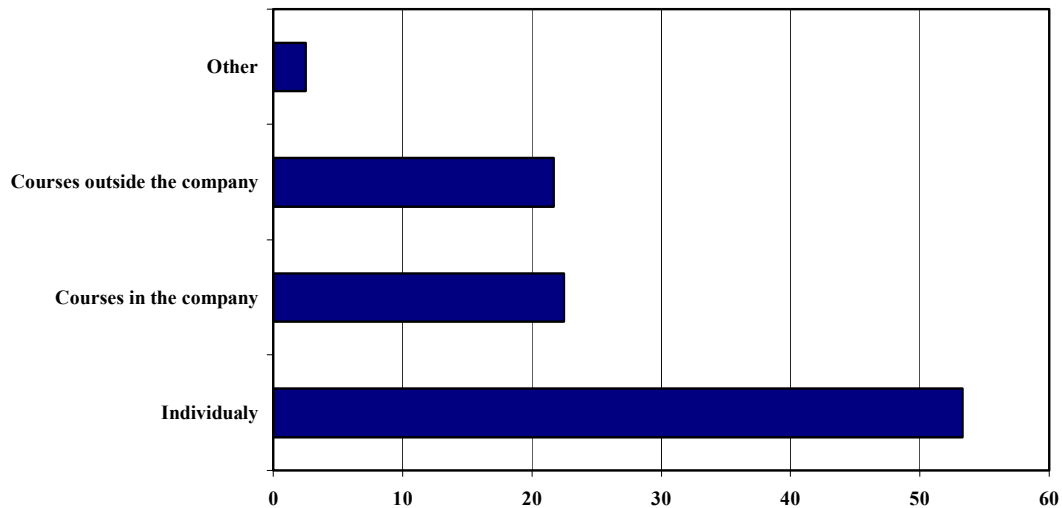
Of the total number of surveyed companies 94.5% answered this question. Among them 51.9% answered that there are no conditions for computer usage education.

Analysis of the 51.9% companies in which there are no conditions for computer usage education shows: 64.9% companies are in the northern region; 43.4% are companies founded prior to year 1990; 51.5% are small companies; 62.2% are companies that have an annual income up to €100,000; 77.8% are companies that do not use a computer, and 50% of companies use computers in the conducting of business.

**3. In what way are employees educated for working on the computer?**

Of total number of companies 53.3% state that the most common means of training is the individual education of the employees.

*Graph 35. Ways of educating employee's in computer usage*



The companies that have stated another means of training have not stated what type of training for computer usage that would be.

Analysis of the 22.5% of companies that have stated that the main way of training of employees is education courses in the company shows: 29.6% of companies are in the central region; 53.8% are medium companies; 33.3% are companies that have an annual income over €1,000,000 and 27.3% are companies that state that they have conditions for computer usage education.

**4. What are the basic reasons for the non-existence of computer usage education?**

Of the total number of companies that have stated the deficiency of conditions for computer usage education 75.5% stated basic reasons. Of that 74.6% do not need education; 9.5% stated a lack of motivation and interest; 8.1% stated that there is a lack of readiness for acquiring new skills. Other reasons were stated by 8.1% of the companies, of which 33.3% stated the lack of financial assets as a basic reason for the lack of computer usage education in the company.

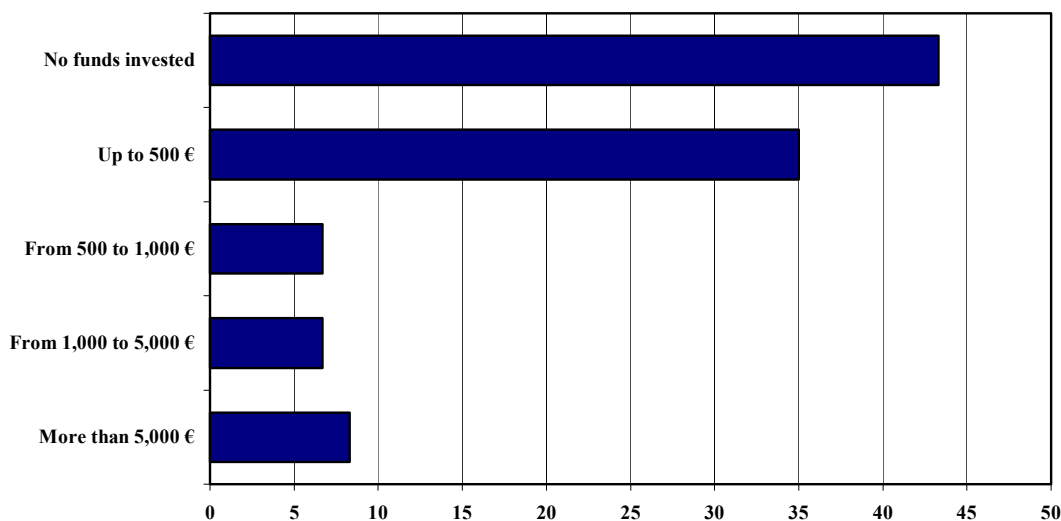


Analysis of the 74.3% of the companies that do not have the conditions for computer usage education of employees because there is no need shows: 83.8% of companies are from the southern region; 94.7% of companies were founded from 1995 to 2000; 100% are large companies; 100% are companies with an annual income over €1,000,000; 74.6% are companies that use a computer in conducting business, and 73.3% are companies with more than 51% of employees using a computer.

### **5. What is an average amount that the company invested in ICT education in the year 2004?**

On this question an answer was given by only 32.4% of companies that use a computer in conducting business. Of that 43.3% companies stated that there were no investments in the ICT education in year 2004.

*Graph 36. How many resources the enterprise invested in ICT education in 2004?*



Analysis of the 8.3% of companies that have invested more than €5,000 in education in the year 2004 shows: 9.7% of companies are from the central region; 23.1% of companies were founded between 1995 and 2000; 100% are large companies; 17.6% are companies with an annual income over €1,000,000; and 55.6% are companies that have, in the course of the year 2004, spent more than €5,000 in the procurement of computers.

### **6. Do you use a computer?**

This question was asked of every surveyed person, regardless if the company they are employed with uses computers or not. From the total number of persons that have responded to the question 91.4% use a computer, while 8.6% do not use a computer at work.

Analysis of the 8.6% persons that do not use a computer shows: 18.4% of persons are from companies in the northern part of Montenegro; 13.8% are employees from micro companies; 22.2% are employees whose companies have an annual income of up to €100,000, and 77.8% of persons are from companies that do not use a computer in doing business.

### **7. How often do you use a computer at work?**

From the total number of surveyed persons that have answered this question, 89% use a computer on a daily basis; 7.9% a few times per week; 1.2% a few times per month; 1.2% rarely and 0.6% very rarely.

Analysis of the 89% of companies that use the computer on a daily basis shows: 93.1% are employees from companies from the central region; 93.9% of surveyed employees are from companies founded between 1995 and 2000; 100% of surveyed employees are from large companies, and 100% of surveyed persons are from companies that have an annual income of over €1,000,000.

**8. *What is the reason you do not use a computer?***

From the total number of surveyed persons that do not use a computer, 35.7% stated the reason for not using a computer. 28.6% stated that a lack of computer skills is a hurdle for them using a computer; 7.1% stated no interest in using a computer and 7.1% stated a lack of free time. Other reasons for the not using computers were stated by 21.4% of surveyed persons.

Analysis of the 28.6% of surveyed persons that do not use a computer due to a lack of computer skills shows: 33.3% of surveyed persons are from companies in the northern part of Montenegro; 40% are surveyed persons from micro companies, and 100% of surveyed people are from companies with an annual income from €100,000 to €250,000.

INTERNET

1. Type of Internet connection

The answer to this question was not given by 7.6% of companies. Of the total number of companies that gave an answer, the largest number (62%) has a dial-up connection, while 24% have ISDN. Only 6.4% of surveyed companies have a rented line, while 7% of surveyed companies do not have an Internet connection.

Dial-up connection is most frequent with companies that have an annual income up to €100,000; while ISDN is more present at companies with an annual income from €500,000 to €1,000,000. From the total number of companies that have an annual income of over €1,000,000 59.5% have an dial-up connection; 24.3% have ISDN; 10.8% have a rented line, and 5.4% companies although they have computers, don't have an Internet connection

Analysis of the 6.4% that have a rented line shows: 10% of companies are from the northern part of Montenegro; 13.3% are companies that were founded prior to 1990; 66.7% are companies that have over 250 employees (large companies) and 10.8% are companies that have an annual income over €1,000,000.

2. Is the surveyed person using the Internet?

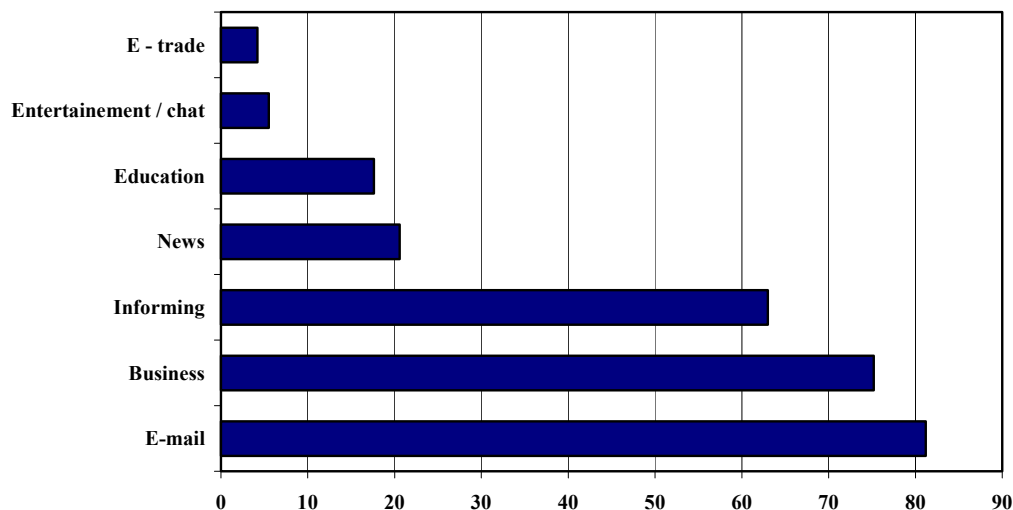
Of the total number of surveyed people in the companies where the computer is being used, 95.7% gave a response to this question; among them 93.2% use the Internet.

Analysis of the 6.8% of surveyed people that don't use Internet shows: 15.6% are in the northern part of Montenegro; 12.1% are employed in companies founded after 2000; 5.6% work in medium sized companies; and 11.5% of surveyed people are employed in companies that have an annual income from €250,000 to €500,000.

3. What do you use the Internet for?

For this question there was the option to give more than one response. The greatest numbers of surveyed people that use the Internet use it for reading e-mail, and for business purposes.

Graph 37. What purpose is the computer used for?

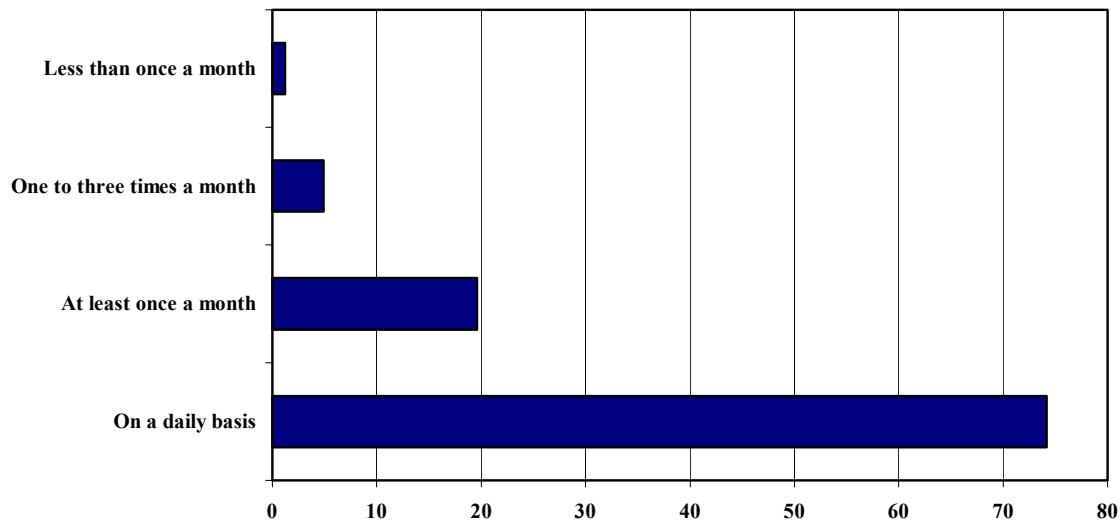


Only 5.5% of surveyed people use the Internet for entertainment. Also, an indicator that the electronic trade did not yet live up to is the fact that only 4.2% state that they use the Internet for e-trade.

#### **4. How often do you use the Internet?**

Of the total number of surveyed people that use the Internet 74.2% use the Internet on a daily basis, while 1.2% use it less than once a month.

*Graph 38. How often you use the Internet*



Analysis of the 74.2% of surveyed people that use the Internet on a daily basis shows: 79.7% are from the central region of Montenegro; 81.6% work in companies that were founded from 1995 to 2000; 83.3% work in companies that have an annual income from €500,000 to €1,000,000; 86.2% use the Internet primarily for education, and 85.7% of surveyed people use the Internet for information.

#### **5. How many Internet hours does the surveyed person, as an employee, spend during the day?**

This question was not answered by 4.2% of the surveyed people. Of the total number of surveyed people that use the Internet, and that have responded to this question, 58.9% spend an hour a day on the Internet; 24.1% one to two hours, and 17.1% spend over two hours a day.

In relation to the average number of surveyed people that use the Internet mainly for business purposes, 50.4% use the Internet up to one hour; 27.2% up to two hours, and 22.4% for over two hours. Among those that use the Internet for education, 28.6% use it up to one hour; 21.4% up to two hours, and 50% use the Internet for over two hours.

Analysis of the 58.9% of surveyed people that spend up to one hour a day on the Internet shows: 65.4% live in the northern Montenegro area; 74.1% work in companies that were founded prior to 1990; 63.8% work in small companies; and 58% use the Internet mostly to check e-mail.

#### **6. How many employees in the company use the Internet?**

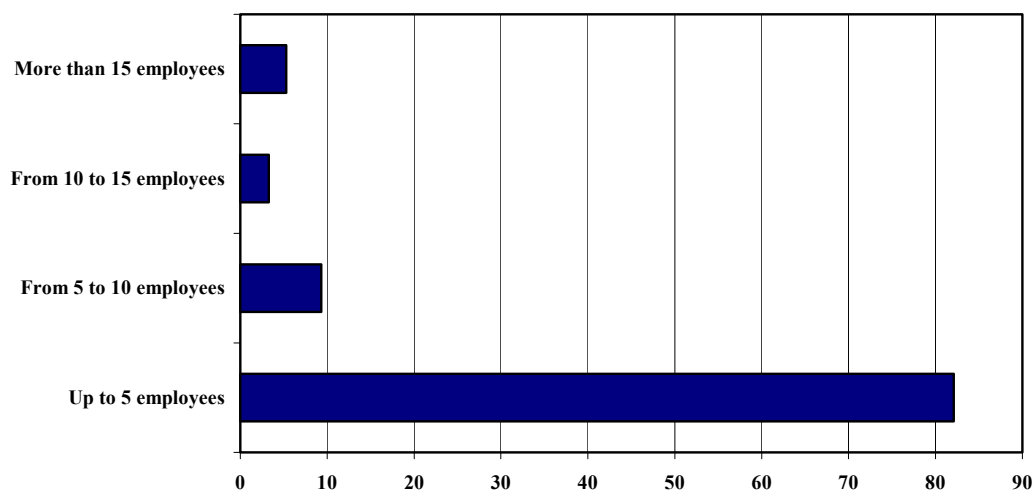
Of the total number of companies that have a computer and Internet connection, and that have responded to this question 82.1% of them have up to five employees using a computer. The average of employees using Internet in companies is 5.91.

Analysis of the 81.2% of companies that have up to five employees using Internet shows: 95.5% of companies are from the northern part of Montenegro; 86.4% of companies were founded from 1991 to 1995; 91% of companies have an annual income of up to €100,000.

Analysis of the 5.3% of companies that have more than 15 employees using the Internet shows: 7.2% of companies are from the central region of Montenegro; and 19.2% of companies were founded up until 1990.

Of the total number of companies that use the Internet and have an Internet connection, in 14.8% of the companies up to 10% of the employees use the Internet; in 28.9% of the companies from 10% to 25% of the employees use the Internet; in 28.6% of the companies from 25% to 50% employees use the Internet; and in 29.6% companies more than 50% of employees use the Internet.

*Graph 39. How many employees in the company use the Internet?*



An analysis of the 29.6% of companies that have a Internet connection and where more than 51% of employees use the Internet shows: 33.9% are from the southern region; 58.3% were founded after 2001; 53.7% are micro companies and 40% of companies have an annual income up to €100,000.

If the number of employees that use a computer is compared to the total number of employees in the company, about 41.2% of employees in the company that has an Internet connection use it.

### ***7. The way in which the company uses the Internet***

Of the total number of companies using the Internet that have responded to this question, 60.7% of companies uses the Internet per hour; 19.3% uses monthly packages; 7.6% per flow of data. Also, 7.6% of the companies use special tariff packets, while 4.8% of the surveyed people from the company do not know how the company uses the Internet.

Analysis of the 60.7% of companies that use Internet per hour shows: 69.8% are from the central part Montenegro; 73.1% were founded after 2000; 67.2% are micro companies; and 86.7% of companies have an annual income from €100,000 to €250,000.

### ***8. What is your Internet provider?***

Of the total number of companies that have answered this question and have a computer and Internet connection, for 98.5% of companies Internet Crna Gora is their provider, while only two firms use the services of the Montsky Company.

### 9. How much is your company paying for the usage of Internet monthly?

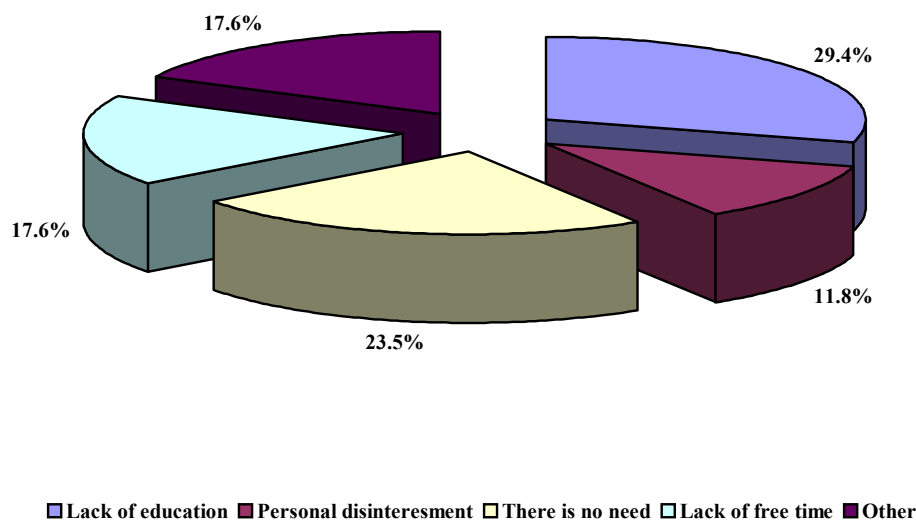
Of the total number of companies that have a computer and Internet connection, 76.1% of them have answered this question. Of that 52.9% of them pay €25 monthly for the Internet connection; 29.8% of them pay from €25 to €50 per month; 7.4% of companies pay from €50 to €100, and 9.9% of companies more than €100 for Internet usage. On average, the companies spend €65.8 for the Internet connection.

Analysis of the 52.9% of companies that spend up to €25 for Internet usage shows: 51.7% are from the northern part of Montenegro; 57.9% were founded from 1991 to 1995; 59.6% are small companies; 71.4% have an annual income from €100,000 to €250,000; and 63.4% of the companies pay Internet per hour.

### 10. The reason for not using the Internet

Of the total number of surveyed people that do not use the Internet, the reason for not using the Internet is stated by 89.5% of the surveyed companies. Related to the number of companies that have given a response, they state the reason for not using the Internet is the biggest obstacle of the lack of education.

*Graph 40. Reason for not using the Internet*



Companies from the southern part of Montenegro (33.3%), as well as employees of micro-companies (40%) have stated the reason for not using the Internet is lack of education.

WEB SITE

**1. Does the company have a web site?**

Of the total number of companies that took part in this research 91.5% gave a response to this question. Among them 47% do not have a web site, 37.2% do have a web site, and 15.8% do not have a web site, but intend to create one.

Analysis of the 47% of companies that do not have a web site shows: 75% are from the northern part of Montenegro; 55.6% were founded after 2000; 56.1% are micro-companies; 63.6% have an annual income up to €100,000; 45.7% use a computer; and 85.7% are companies that consider that their business would not be possible without the use of computers.

It is an interesting statistic that 6.7% of companies that do not have an Internet connection have a web site.

Analysis of the 15.8% of companies that do not have a web site, but intend to create a web site shows: 19.7% are from the southern region of Montenegro; 22.2% were founded after 2000; 31.6% have an annual income from €100,000 to €250,000; and 22% are companies that have up to five employees (micro-companies).

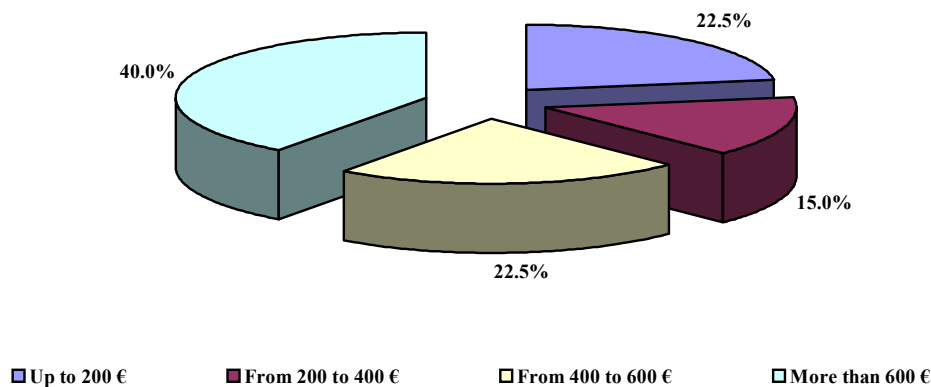
**2. Who was hired for the creation of the web sites?**

Of the total number of companies that have a web site and that have answered this question, 19.4% of companies have hired a company from the ICT sector, 22.6% have hired some of the employees, 56.5% used the services of third parties, while 1.6% stated something else.

Analysis of the 56.5% companies that have used the services of a third party shows: 65.5% are from the southern region of Montenegro; 75% were founded from 1995 to 2000; and 62.5% have an annual income from €250,000 to €500,000.

**3. How much was invested in the construction of the web site?**

*Graph 41. How many resources are employed in web site creation?*



Analysis of the 40% of companies that have spent more than €600 shows: 55% are from the southern region; 71.4% were founded prior to 1990; 66.7% employ from 50 to 250 people, and 50% of

companies have an annual income from €250,000 to €500,000. The companies have spent €1,279.6 on average for the construction of their web sites.

#### **4. What is the average amount spent monthly on the maintenance of the web site?**

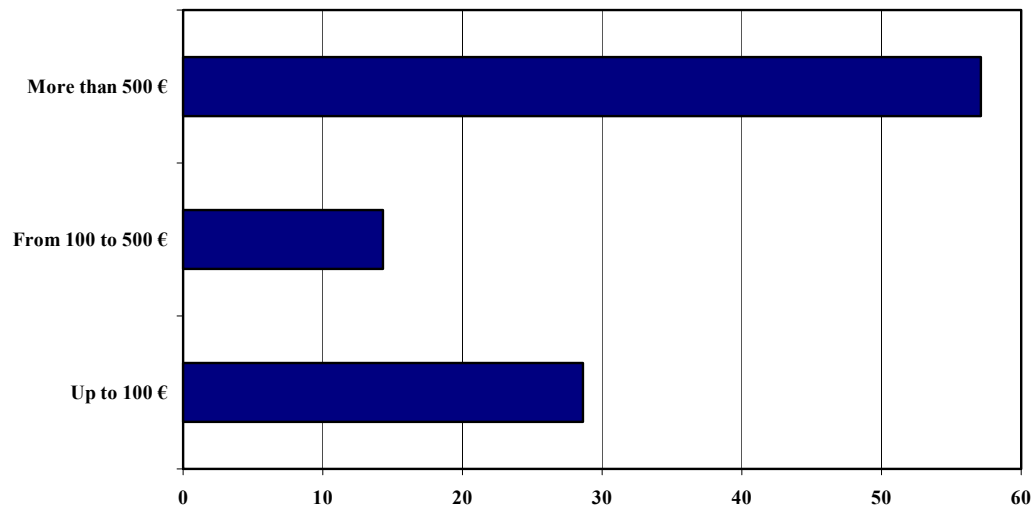
This question was answered by 61.8% of the companies that have a web site. Of the total number of companies that have answered the question, 50% spend €30; 15.4% spend €30 to €50; and 34.6% spend more than €50. On average the companies spend €268.9.

Companies from the southern part of Montenegro (60%) as well as 58.3% that were founded from 1990 to 1995; and 72.7% of companies that have from six to ten employees, spend €30 monthly for the maintenance of their web site. Every company that was founded after 2000 (and has a web site) is spending over €50 monthly for web site maintenance.

#### **5. What is the average planned amount for spending on maintenance of a web site in 2005?**

This question was answered by 41.2% of the total number of companies that have a web site. Of that number the most frequent amount that the companies will spend will be above €500.

**Graph 42.** Average planned funds for the maintenance of the web site in 2005



Analysis of the 28.6% of companies that plan to spend up to €100 for the maintenance of their website shows: 40% are from the southern region; 40% were founded prior to 1990; and 50% have an annual income up to €100,000. Of the total number of companies that have an annual income over €1,000,000; 90% plan to spend more than €500 for the maintenance of the web site, while another 10% plan to spend up to €100.

#### **6. Did you have any use from the web site?**

The response was not given by 11.8% of companies that have their own web site. Of the total number of companies that have responded 90% consider that there is a benefit of the web site, while 10% consider there is no benefit. The opinion that the web site was useful is shared by: 100% of companies from the northern part of Montenegro; 90.9% of companies that have from six to ten employees; as well as 100% of companies that have an annual income from €100,000 to €250,000.

Analysis of the 10% of companies that consider that there is no benefit from the web site shows: 17.6% were founded from 1996 to 2000; and 28.6% have an annual income from €250,000 to €500,000.

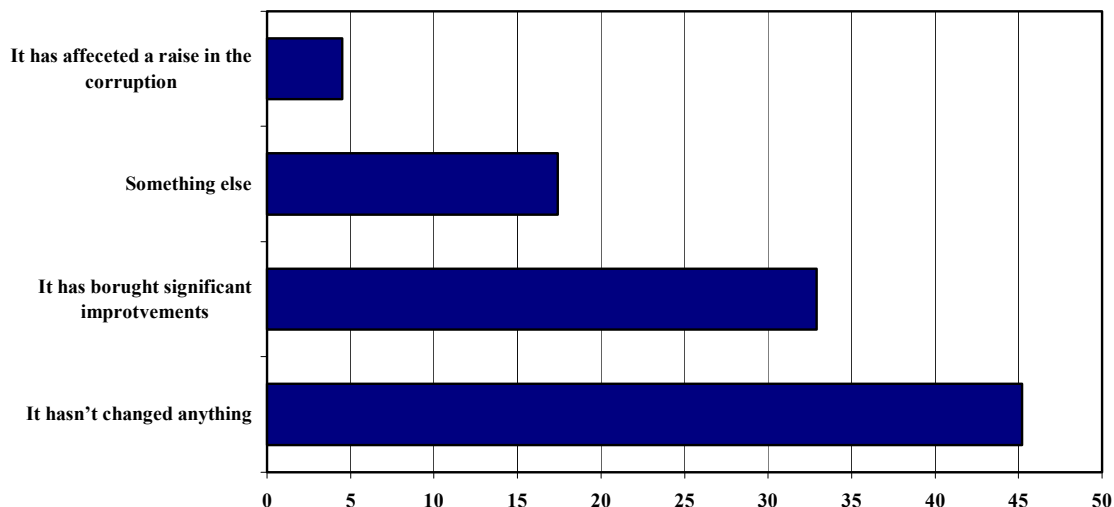


**INFORMATION SOCIETY DEVELOPMENT FROM  
THE ENTERPRISE VIEWPOINT**

**1. How do you rate the Law on public procurement?**

The answer to this question was given by 22.5% of the companies. Of the total number of companies that have given an answer, 45.2% considers that the law on public procurement has brought changes, while 4.5% consider that it has affected a raise in corruption.

*Graph 43. How do you rate the Law on Public Procurement?*



Of the total number of companies that have stated something else, 63% is not in the course of events/doesn't know; 14.8% considers that it has brought improvements, and the same percentage considers that it is not good. The other 7.4% of companies considers that the Law on public procurement should yet yield results.

Analysis of the 32.9% of companies that consider that the law on public procurement has brought significant improvements shows: 36.8% are from the central part of Montenegro; 40.9% were founded from 1996 to 2000; 50% employ from 11 to 50 people (medium companies), and 40% are companies that have an annual income of up to €100,000.

**2. Did you take part in any tender?**

Of the total number of companies that have responded to this question 63.1% did not take part in any public tender, while 36.9% have.

Analysis of the 36.9% of companies that have taken part in a public tender shows: 51.4% are from the central region; 46.7% were founded prior to 1990; 50% employ over 250 people (large companies); 65% have an annual income in the range from €500,000 to €1,000,000 and 37.7% of companies use a computer.

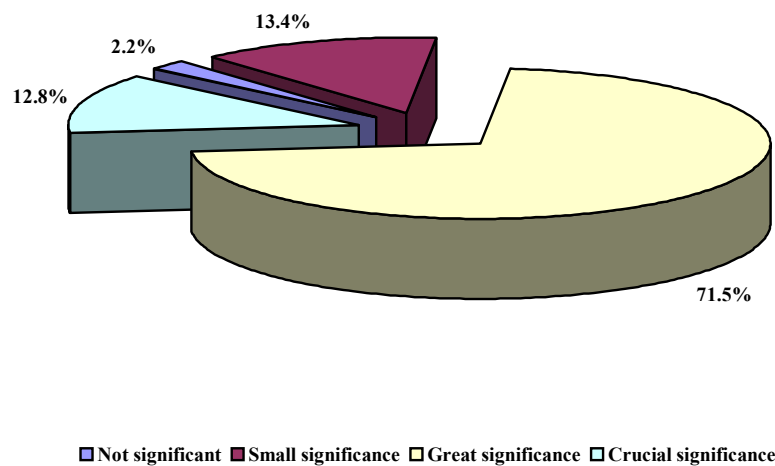
Of the total number of companies that did not take part in a tender, only 13.2% stated the reason for that. Among them the biggest number (57.1%) stated that the basic reason was that there was no need; 14.3% indicated that there was no opportunity, while the same percentage stated bad information as a basic reason.

### 3. What impact on the total development of Montenegro has the ICT sector (computers and the Internet) and why?

This was a question asked of all companies. Of the total number of surveyed companies 89.5% gave an answer.

Among companies that have answered the question 71.5% consider that the ICT sector (computers and the Internet) has great significance for the total development of Montenegro, while only 2.2% consider that there is no significance.

**Graph 44.** What impact on the total development of Montenegro has the ICT sector?



None of the surveyed companies who gave a response that ICT doesn't have any significance for the development of Montenegro, has stated why, while companies that have stated that ICT has a small significance, said that it is because ICT has not yet fully developed in Montenegro, and it has not lived up to its fullest. On the other hand, the companies that consider ICT to have a great significance for the total development of Montenegro stated as the main reason that it brings easier and cheaper communication, and with that great savings in time and money.

The indicator of the significance of the ICT sector in Montenegro is only 0.65. This indicator aggregately measures the opinion of the companies that were surveyed, about the importance of ICT sector for the total development.

### 4. What are the barriers for doing business in your company?

The companies in this research had the opportunity to state the barriers that affect them the most in doing business. Every barrier was rated with 1– “It does not pose a barrier” 3– “It poses somewhat a barrier” 5– “It poses a barrier”.

The surveyed companies stated that high taxes, an inability to pay receivables, corruption, disloyal competition and customs are the biggest barriers to the business of the company.

Of the total number of companies 38.3% consider disloyal competition to be a barrier, 37% that it

poses somewhat of a barrier, while 24.7% consider it not to be a barrier.

Of the total number of companies 28.9% consider that the frequently changed regulations are a barrier, 52.6% considers them somewhat of a barrier, while 18.5% considers it not to be a barrier.

Of the total number of companies 59.5% considers that high taxes are a barrier, 32.5% consider it to be somewhat of a barrier, while 8% consider it not to be a barrier.

Analysis of the companies that consider that the taxes represent a barrier shows: 66.7% are from the south of Montenegro; 62.5% were founded from 1995 to 2000; 61.5% employ from 50 to 250 employees (medium companies); 66.7% have an annual income from €100,000 to €250,000, and 61.3% are companies that use a computer.

The greatest number of companies consider that administrative limitations somewhat represent a barrier (50.3%), while 34.2% consider it to be a barrier, and 15.5% consider it not a barrier.

Of the total number of companies, 17.1% stated that the lack of technical assets and equipment represents a barrier; while 47.3% of the companies stated that it does not present a barrier.

Of the total number of surveyed companies 39.9% consider corruption to be a barrier, 37.2% considers it somewhat of a barrier, while 23% consider it not to be a barrier.

The largest number of companies stated that the political situation is somewhat of a barrier (43%), while 35.8% considers it to be a barrier, and 21.2% not a barrier.

Of the total number of companies 40.1% consider customs to be a barrier, 38.2% somewhat of a barrier, while 21.7% of companies consider them not a barrier.

Of the total number of companies 28.9% consider that export is a barrier, 26.7% somewhat of a barrier, and 44.4% of companies consider it not a barrier.

Of the total number of companies 60.9% consider that the inability to collect receivables is a barrier, 23.7% consider it to be somewhat a barrier, and 15.4% consider it not to be a barrier.

The opinion that it is a barrier is shared by: 65.2% of companies from the Central part of Montenegro; 68.3% of companies founded in the period from 1990 to 1995; 70.4% of companies that employ up to 10 employees (small companies) and 80% of companies that have an annual income from €500,000 to €1,000,000.

The greatest number of companies considers that a small scale of work is somewhat of a barrier (41.9%), 28.4% consider it to be a barrier, while 49% consider it not to be a barrier.

Of the total number of companies 9% consider strong competition to be a barrier, 42.1% that it is somewhat of a barrier, while 49% of companies consider it not to be a barrier.

Of the total number of companies 9.7% considers that inflation is a barrier, 37.5% considers it somewhat of a barrier, while 52.8% consider it not to be a barrier.

The largest number of companies considers that inadequate or obsolete capacities are not a barrier (52.3%), 23.3% consider it somewhat of a barrier, while 15.2% consider it a barrier.

The largest number of companies considers the level of expertise of the employees not to be a barrier and 13.2% of companies consider it a barrier.

Of the total number of companies 9.2% consider that the skills of the workforce are a barrier, 33.8%

consider it somewhat of a barrier, while 57% consider that it is not a barrier.

Of the total number of companies 11.5% consider managerial skills to be a barrier, 32.4% consider them somewhat of a barrier, while 56.1% of the companies do not consider this a barrier.

To better rank barriers, regarding the companies in Montenegro, indicators have been calculated, especially for each barrier. Indicators have values from 0 to 1. The closer the indicator gets to 0, the bigger that barrier is in doing business, according to the companies, while on the other hand, the closer it gets to 1, the less that barrier is for the companies.

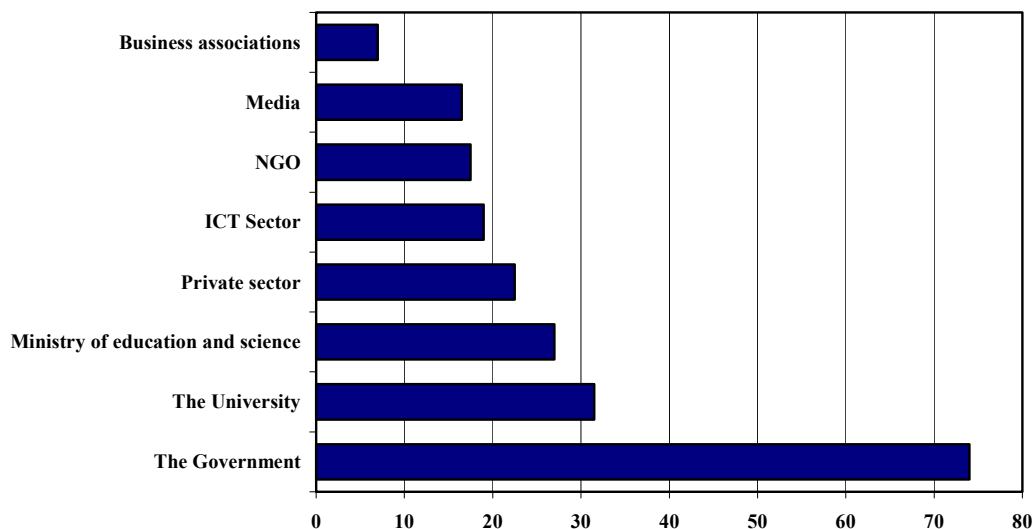
*Table 3. Barriers in business*

BARRIERS FOR CONDUCTING THE BUSINESS	INDICATOR
Disloyal competition	0.57
Frequent changes in the regulation	0.55
High taxes	0.76
Administrative limitations	0.59
Foreign capital	0.50
Lack of information	0.37
Lack of technical assets and equipment	0.35
Corruption	0.58
Political situation	0.57
Customs	0.59
Export	0.42
Inability to pay receivables	0.73
Small scale of work	0.49
Strong competition	0.30
Inflation	0.28
Inadequate or obsolete capacities	0.31
Level of expertise of the employees	0.29
Skills of the workforce	0.26
Managerial skills	0.28

##### *5. Who should be in charge of creating a suitable environment for the development of the information society in Montenegro?*

The companies could give up to three answers for this question. The largest number of companies considers that the Government (by abolishing or diminishing taxes for computer equipment, software, and web presentation construction) should be responsible for the creation of a suitable environment for the development of an information society in Montenegro, and the least number of companies consider that business associations should be responsible.

*Graph 45. Who is responsible for development of the ICT sector in Montenegro?*

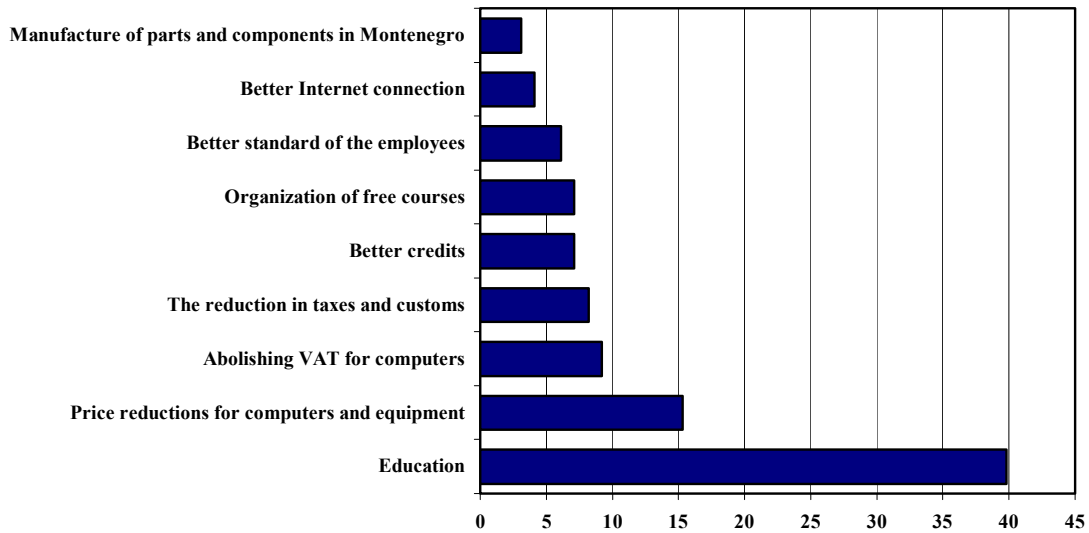


Analysis of companies that consider that the Government (by abolishing or diminishing taxes for computer equipment, software, and web presentation construction) should be responsible for the creation of a suitable environment for the development of an information society in Montenegro shows: 78.2% of companies are from the northern region; 78.8% of companies were founded prior to 1990; 78.9% of companies have 50 to 250 employees (medium companies); 90.5% of companies have an annual income from €500,000 to €1,000,000; and 77.3% of companies own computers.

The opinion that the Ministry of Education and Science should be responsible for the creation of a suitable environment for the development of an information society is from: 37.5% of companies from the northern region; 50% of companies that have over 250 employees (large companies); 33.3% of companies that have an annual income from €100,000 to €250,000 and 58.8% of companies that do not have an internet connection.

**6. What should be done to improve the usage of computers and the Internet in Montenegro?**

In this research, the companies could state their own proposal about what to do in the goal to improving the usage of computers and the Internet in Montenegro. This question was answered by only 49% of companies.

**Graph 46.** *What should be done to improve the usage of computers and the Internet in Montenegro?*

Of the total number of companies that have answered this question, 39.8% of companies consider that the level of knowledge and consciousness about computers and the Internet should be raised. They stated that education should be performed already in primary schools and that there is a need to enhance media information regarding these subjects. 15.3% consider that companies should lower the prices of computers, computer equipment and Internet services; 9.2% of companies state that the VAT should be abolished for computer equipment; and taxes and customs rates lowered (8.2%) Other companies state some of the reasons as; giving credits under favorable terms, enhancement of the standard of the populous; and improvement of the Internet connection.

**SURVEY ON COMPUTER AND INTERNET USAGE IN ICT  
ENTERPRISES**

## BASIC QUESTIONS

**1. On what market does the company supplies?**

All surveyed companies could choose from four offered answers, with the possibility of giving more than one answer. The largest percentage of supply with Montenegrin ICT companies comes from the domestic market (70.4%), followed by the supply from the foreign market (40.7%), then from Serbia (37%), as well as the supply from the territory of the ex-YU (11.1%)

By analyzing the percentage of supplying from the foreign market with the breakdown by countries, the most frequent foreign market is USA (45.5%), Germany (36.4%), Singapore and Austria (27.3%). Average perceptual supply from the domestic market is 62.6%.

Observed according to specific regions, companies from the southern and northern part of Montenegro supply themselves from the domestic market (100%). That percentage is 52.9% for companies from the central region, while 47.1% supplies them on the foreign market. Related to the year they were founded, companies founded prior to 1990 supply themselves on some other market (100%), while companies founded after 2001 mostly supply themselves on the domestic market (75%)

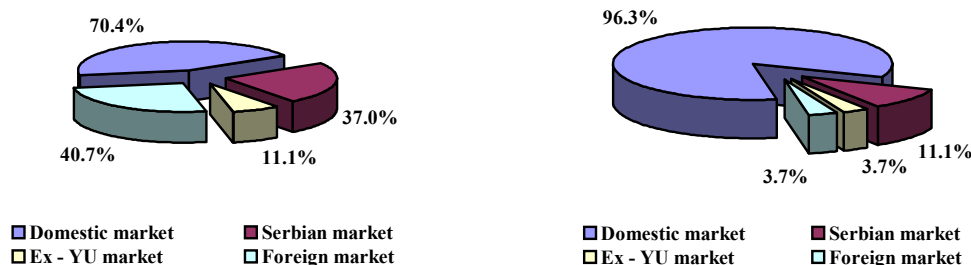
The share of the supply from the Serbian market is 37%. Mostly the companies from the central region supply from the Serbian territory (41.2%), while that percentage is lowest for the companies from the northern sector (20%). Observing the size of the companies, 71.4% of small companies supplies from the Serbian market, while 27.8% of micro companies supplies from that same market.

Analysis of the 11.1% of companies that supply the goods from the territory of the ex-SFRJ shows: 17.6% are from the central region; 25% were founded after 2001; 11.1% are small companies; and 33.3% are companies that have an annual income from €250,000 to €500,000. The goods from abroad are more frequently supplied for themselves by companies: from the central region 64.7%; those founded from 1996 to 2000; small companies 57.1%; and 100% of companies that have an annual income from €250,000 to €500,000.

**2. What is the market for the placement (sale) of the products?<sup>1</sup>**

All surveyed companies have answered this question, by choosing from one of the four offered answers, with the possibility of giving a multiple answer. The companies from the ICT sector place their products on the: domestic market 96.3%; Serbian market 11.1%; ex-YU market 3.7%; and foreign market 3.7%. Companies that place their products on the Serbian market are from the central region of Montenegro (17.6%) and most commonly are in the form of small companies (14.3%), with an annual income in the interval from €250,000 to €500,000 (100%)

*Graphs 47 and 48. Supply and product placement*



<sup>1</sup> This question was asked only to companies that deal in computer hardware.



***Number of sold computer configurations***

The question regarding the number of sold computer configurations was responded to by 25% of surveyed companies. Of that number, in 2003 25% of companies had a raise in the number of sold configurations of 10%, while 75% of the companies experienced a 20% growth of sale.

Observing the change in 2004 to 2002, 50% of the companies had diminishing sold configurations of 0%; 25% of companies had the same sales as in 2003, while 25% had an increase in sales of 16%. The number of sold computer configurations in 2003 related to 2002 has increased on average by 17.5%, while the same category in 2004 has diminished, on average, by 6%.

***Number of laser printers sold***

The question on the number of laser printers sold was answered by 25% of the companies. Of that number, at 25% of companies there was no change in the number of laser printers sold in 2003 to 2002. At 25% of surveyed companies there was an increase in sales of 10%, 30% or 50%.

On the question of sales in 2004 compared to 2002 31.3% of companies have given a response, of which 20% had experienced diminishing sales of 20%. At 40% of companies sales in 2004 compared to 2002 were at the same level; while for 20% of companies it increased by 20% and 33.3%. Observing the average percentage of the change of sales of laser printers in the last two years it is noticed that the number of sold laser printers in 2003 to 2002 has grown by 22.5%, while that percentage in 2004 was 6.6%.

***Number of other printers sold***

The question regarding the number of other types of printers sold was answered by 25% of the companies. Of that number 25% have experienced an increase in sales of 10%; 20% 50% or 70%. By observing the same category in 2004 there were certain changes. The question was answered by 31.3% of the companies, of which 20% experienced diminishing sales of 20%. At 40% of the companies there was an increase in sales of 20%; while for 20% of the companies the sales have grown by 33%, and 60%. The average amount of the raise of the sales of other printers in 2003 compared to 2002 is 37.5%, while that same category in 2004 is 22.6%.

***Number of sold monitors outside the configurations***

On the question of sold monitors outside the configuration in 2003 compared to 2002, 31.3% of surveyed companies gave a response. Of that, 40% of companies didn't have any change in the sales in 2003, while for 40% of companies the sales have increased by 10% and for 20% the sales increased by 39%.

By analyzing the rate of sales in 2004 compared to 2002, 20% of companies have experienced diminishing sales by 20%, while for 20% of companies the sales didn't change. For 20% of companies the sales have increased by 10%, 34%, and 100% respectively related to 2002. The average amount of sales of monitors outside of the configuration in 2003 compared to 2002 is larger by 11.8%, while in 2004 that number is raised by 24.8%.

***Number of modems sold***

The question regarding the modems sold in 2003 compared to 2002 has been answered by 25% of the companies. Of that number 75% have experienced a raise in the sales of 10%, while for 25% of the companies the sales have risen by 100%. The average percentage of modems sold in 2003 compared to 2002 has increased by 32.5%, while that same category in 2004 has risen by 12.5%.

## EMPLOYEES

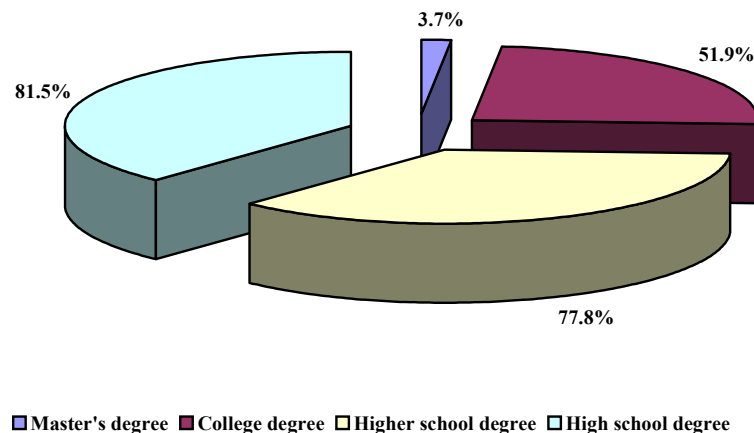
**1. Level of education of the executive director**

The question regarding the education of the executive director was answered by 88.9% of the surveyed companies. Of that number 75% of executive directors have a college degree, and 12.5% a higher school or high school degree. Observing the total number of companies in the northern sector 80% of them have a college degree. Micro companies have a high degree of executive directors with a college degree (81.3%). The companies with an annual income from €250,000 to €500,000 are led by directors with college degrees (100%).

**2. The level of education of the employees**

Employees that have a master's degree, college degree, higher school degree and high school degree characterize the companies from the ICT sector in Montenegro. For 3.7% of the companies employees with master's degree are present; 77.8% of employees with a college degree; 51.9% with a degree of a higher school, and 81.5% with a high school degree.

*Graph 49. Educational level of employees*



Analysis of the 77.8% of companies that have employees with a college degree shows: that they are more often: in the central part of Montenegro 88.2%; 100% of companies were founded prior to 1990; 85.7% are small companies; and 100% are companies in which the owners are with a high-school degree.

Analysis of the 51.9% of the companies that have employees with a higher school degree show: they are more frequently in the northern part of Montenegro 60%; 100% of companies were founded prior to 1990; 85.6% are small companies; 80% have an annual income over €1,000,000 €; and 100% are companies whose owners have a higher school degree.

Analysis of the 81.5% of companies in which employees have a high school degree shows: these companies are more frequently in the central part of Montenegro (88.2%); were founded prior to 1990 (100%); they are micro-companies (83.3%) and companies whose owners have a college degree (94.4%).

The share of employees with a college degree related to the total number of employees is given in intervals. Therefore for 15.8% of companies up to 10% of employees have a college degree; 5.3% of companies have 11% to 25% of employees with a college degree; 57.9% of companies have 26% to 50% of employees with a college degree while 21.1% of companies have more than 51% of employees with a college degree.

Companies with more than 51% of employees with a college degree are more present: in the central region (30.8%); companies founded from 1991 to 1995 (28.6%); micro companies (21.3%); and companies with an annual income from €250,000 to €500,000 (50%)

The average share of employees with a college degree, in companies that employ them, is 37.9%; higher school degree 41.7%, and employees with a high school degree 48%.

Percentile share of employees with a higher school degree is up to 10% of the total number of employees for the companies from the ICT sector is 16.7%, then on interval from 11% to 25% is 25%; than in the interval from 26% to 50% is 33%; and there is 25% of companies with more than 51% of employees with a higher school degree.

Employees with a higher school degree and their share of more than 51% of employees is a characteristic of companies from the southern part of Montenegro (50%); micro-companies (33.3%) and 50% of companies that have an annual income of up to €100,000.

The percentile share of employees with a high school degree up to 10% in the total number of surveyed companies is 5%; in the interval from 11% to 25% 15%; in the interval from 26.6% to 50% 30%; while for 50% of companies this share is more than 51%.

Analysis of the 50% of companies that have more than 50% of employees with a high school degree shows: 75% of companies are from the southern region; 71.4% were founded from 1991 to 1995; 60% are small companies; and 83.3% are companies that had an annual income from €500,000 to €1,000,000.

### ***3. The number of certified employees and types of certificates***

On the question of whether the company has certified workers, the response was affirmative for 40.7% of companies, while 59.3% do not have certified employees.

Analysis of the 40.7% of companies that have certified employees shows: 60% of companies are from the southern and northern part of Montenegro; 55.6% have from 10 to 50 workers; and 100% of companies were founded prior to 1990.

Analyzing the number of certified workers in companies by intervals out of 40.7% of companies that have certified employees; 63.6% of companies have up to two certified workers; 18.2% have three to five; and the same percentage is for companies that have more than five certified employees.

By observing the percentage of companies that have up to two certified employees (because they are the most frequent) it shows: 100% of companies are from the northern and southern part of Montenegro; 100% are micro-companies; companies were founded in the period from 1991 to 1995; and companies that have invested in the education of the employees (63.6%)

*Note: Due to the complexity of the classification of the certificates, only the certificates have been mentioned, not the employees in them.*

## ***Microsoft***

On the question of owning a Microsoft certificate, the response was given by 65.5% of surveyed companies. Of that number 47.7% of companies have that certificate, while 52.6% do not. Analysis of the companies that have a Microsoft certificate (47.7%) shows that the largest number is from: companies from the northern part of Montenegro (100%); small companies (57.1%) companies founded prior to 1990 (100%); companies that have an annual income higher than €1,000,000 (100%); and 52.9% of companies that have so far invested in the education of the employees.

### ***HP***

On the question of owning a HP certificate, the answer was given by 93.1% of the companies. Of that number 14.8% stated that they have that certificate, while 85.2% have not. Analysis of the companies that have a HP certificate shows: companies are from the southern part of Montenegro (20%); they are small companies (22.2%); they are companies founded from 1996 to 2000 (33.3%).

### ***Oracle***

On the question of owning an Oracle certificate the answer was given by 93.1% of surveyed companies. Of those companies 7.4% owns that certificate, while 92.6% do not. Analysis of the number of companies that own an Oracle certificate (7.4%) shows: companies are in the central part of Montenegro (11.8%); they are small companies (11.1%); the companies were founded after 2001 (12.5%); and the companies have an annual income from €250,000 to €500,000 (66.7%).

### ***Cisco***

The question regarding the Cisco certificate has been answered by 93.1% of the companies, of which only 3.7% of them own a Cisco certificate, while 96.3% do not.

#### ***4. Has the company up to now invested in the education of the employees?***

The question regarding the investments in education has been answered by 96.3% of the surveyed companies. Of that number 88.5% has invested in the education of employees, while 11.5% have not.

Analysis of the 88.5% of companies that have invested in the education shows: 100% are from the southern part of Montenegro; 100% were founded prior to 1990; and 100% are small companies.

#### ***5. How much has the company invested in education in 2004?***

By analyzing the answers that the companies from the ICT sector have given on the issue of the amount of invested assets for education, the data shows that 65.2% of companies have invested in the education in 2004. Of that number 40% of companies have invested €1,000; 20% of companies from €1,000 to €5,000; 13.3% of companies invested from €5,000 to €10,000; while 26.7% have invested more than €10,000 in education in the year 2004. The average amount of investments in education in the year 2004 was €8,386.7 or €5.208 per employee.

By analyzing according to the regions, the companies in the southern and northern part of Montenegro have invested up to €1,000 in education (100%); while the biggest percentage of companies from the central part has invested more than €10,000 (36.4%). Companies with an annual income of more than €1,000,000 (75%) have invested more than €10,000 in education in 2004. Small companies (60%) have invested more than €10,000 for education, and 100% are companies where the director has a high school degree.

#### ***6. Is there a plan of employee education?***

On the question regarding the employee plan, 85.2% of companies have given a response. Of that number 73.9% of them have an education plan, while 26.1% do not.

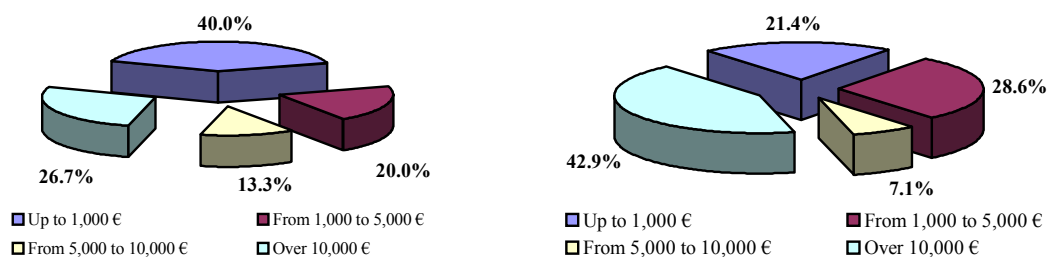
The education plan is more common from: companies from the central region of Montenegro (84.6%); companies founded prior to 1990 (100%); small companies (100%); companies where the executive director has a high school degree (100%); and companies where there was an investment in the education of the employees (75%).

### **7. How much will be invested in the education of employees in the year 2005?**

On the question of investments in education in 2005 59.1% of companies have given a response. Of that number 21.4% of them will invest up to €1,000 in education in 2005; 28.6% from €1,000 to €5,000; 7.1% from €5,000 to €10,000; and 42.9% will invest more than €10,000 in education in the year 2005. The average amount of planned investments in education in 2005 will be €12.800, or €794.9 per employee.

Analysis of the 42.9% of companies that plan to invest more than €10,000 in education shows: 66.7% of companies are from the central region of Montenegro; 60% are small companies; companies that have so far invested in education of the employees (46.2%); and companies whose owners have a college degree (46.2%).

*Graphs 50. and 51. Resources invested in education in 2004, and planned for 2005*

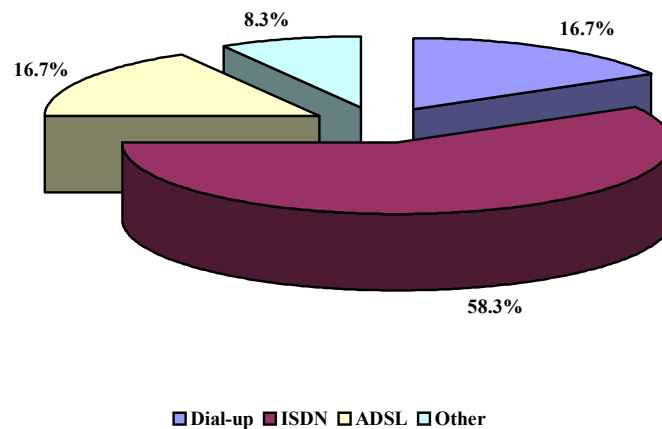


## INTERNET

**1. Speed and type of Internet connection**

Of the total number of surveyed companies from the ICT sector 88.9% have answered the question regarding the type of the Internet connection.

**Graph 52. Speed and type of Internet connection**



Due to the speed of the connection ISDN is preferred (58.3%), followed by 16.7% of ADSL users. Dial up modem connection is preferred by 16.7%, while other types of connections have a share of 8.3%, two companies use a rented line.

Analysis of the 58.3% where the usage is ISDN shows: 80% of companies are from the southern region of Montenegro; 66.7% are companies founded from 1996 to 2000; 73.3% are micro-companies; and 75% of companies have an annual income from €500,000 to €1,000,000.

**2. Internet paying type**

Of the total number of surveyed companies from the ICT sector, 59.3% pay the Internet on a monthly basis, and 22.2% pay per hour. The average use of special tariff packages is 18.5%.

Analysis of the 59.3% of companies that pay Internet per hour shows: 76.5% are from the central region of Montenegro; 100% were founded prior to 1990; 61.1% are micro-companies; 83.3% have an annual income from €500,000 to €1,000,000; and 66.6% are companies in which the number of employees with a college degree compared to the total number of employees, is greater than 50%.

**3. Does the company have a web site?**

In this research 77.8% of companies from the ICT sector have a web site, while 22.2% do not.

Analysis of the 77.8% of companies that have a web site shows: 82.4% are from the northern region; 100% were founded prior to 1990; 85.7% are micro-companies; 100% have an annual income from €250,000 to €500,000; 83.3% are companies where the executive director has a college degree, and 100% are companies in which the number of employees with a college degree compared to the total number of employees, is from 11% to 25%.

***4. Who was hired for the construction of the web site?***

Of the total number of companies that own a web site, 71.4% have used the services of it's own employees; 10.9% used the services of a company from the ICT sector; 4.8% used the services of private individuals, and 4.8% used other services (design studios). Among the companies that have used the services of another ICT company, 75% have used the services of Internet Crna Gora, while 25% used services of the company CT Computers.

Analysis of the 71.4% of companies using the services of it's own employees shows: 100% are from the northern part of Montenegro; 100% were founded prior to 1990; 78.6% are small companies; 100% have an annual income up to €500,000; 68.8% are companies where the executive director has a college degree; and 100% are companies in which the number of employees with a college degree compared to the total number of employees, is from 11% to 25%.

***5. Have you made any cooperation with an international ICT vendor?***

Of the total number of companies from the sample 48.1% of the companies have made cooperation with an international vendor, while 51.2% have not.

Analysis of the 48.1% of companies that have made cooperation with an ICT vendor shows: 70.6% are from the central region of Montenegro; 100% were founded prior to 1990; 66.7% are small companies; 100% have an annual income of over €1,000,000; 66.7% are companies where the executive director has a higher school degree; and 100% are companies in which the number of employees with a college degree compared to the total number of employees, is greater than 50%.

*With which ICT vendors did the cooperation take place?*

On this question the companies could give multiple responses, that is, they could have stated more global vendors with which they have made arrangements.

The largest number of companies, among them the ones that have made cooperation with an international vendor, cooperate with companies like: Microsoft (30.8%); Oracle (23.1%); HP (15.4%); Siemens (15.4%); Cisco (15.4%) and Lexmark (15.4%). Besides that companies from the ICT sector cooperate with companies like Dell, Microstar, MSI, Samsung, Intel, Quest, SAP, Canon, Maxtor, Micros-Fidelio, IBM, Symantec, Toshiba, Veritas, Allied Telesyn, Riverstone and Brand Rex.

**INFORMATION SOCIETY DEVELOPMENT FROM THE ICT ENTERPRISE VIEWPOINT**

*1. Barriers for conducting the business*

The companies in this research had the possibility to state the barriers that distract them in conducting business. Every barrier was rated with 1- “Doesn’t present a barrier” 2- “Presents somewhat of a barrier” and 5- “Presents a barrier”

For the question about *disloyal competition* as a possible barrier, 96.3% of the surveyed companies gave a response. Of that number 53.8% of the companies consider that disloyal competition is somewhat of a barrier, 23.1% of them that it doesn’t pose a barrier, and 23.1% of companies consider it to be a barrier.

Analysis of the 23.1% of companies that consider this to be a barrier shows: 25% are from the southern region of Montenegro; 33.3% were founded from 1991 to 1995; 28.6% are small companies; 40% are companies with an annual income of over €1,000,000; 29.4% are companies where the director has a college degree; and 50% are companies in which the number of employees with a college degree compared to the total number of employees, is greater than 50%.

*Frequent changes in regulation* were rated by 98.9% of the companies. Of that number 20.8% consider them to be a barrier. The largest number consider that it is somewhat of a barrier (54.2%), while 25% of them consider it not to be a barrier.

*High taxes* represent a barrier for 50% of companies, 42.3% of companies consider it somewhat of a barrier, while 7.7% of companies have stated that high taxes do not represent a barrier. The biggest recognition of taxes as barriers to business is for: 80% of companies from the southern region of Montenegro; 75% of companies founded after 2001; 52.9% of micro companies; 87.5% of companies with an annual income of up to €100,000; 66.7% of companies where the director is with a higher school degree, and for 100% are companies in which the number of employees with a college degree compared to the total number of employees, is from 11% to 25%.

*Administrative burdens* are somewhat of a barrier for 58% of companies, while for 29.2% of companies it is a barrier. Related to 29.2% of companies that consider administrative burdens to be a barrier, the opinion is shared by: 40% of companies from the southern region of Montenegro; 100% of companies founded between 1996 and 2000; 33.3% of micro companies; 50% of companies with an annual income from €250,000 to €500,000; 33.3% of companies where the director has a high school degree; and 50% are companies in which the number of employees with a college degree compared to the total number of employees, is greater than 50%.

*No access to foreign capital* was rated by 88.9% of the surveyed companies. Of that for 33.3% of companies it represents a barrier, 41.7% of companies consider it to be somewhat of a barrier, and 25% of companies don’t consider it a barrier.

Analysis of the 33.3% of companies that consider the lack of access to foreign capital a barrier shows: 60% are from the northern region of Montenegro; 50% were founded after 2001; 33.3% are micro companies; 62.5% have an annual income of up to €100,000; 66.7% are companies where the executive director has a higher school degree; and 55.6% are companies in which the number of employees with a college degree compared to the total number of employees, is from 26% to 50%.

*Lack of information* was rated by 88.9% of the surveyed companies. For 58.3% of the companies from the ICT sector in Montenegro it does not pose a barrier; 37.5% consider it somewhat of a barrier, while only 3.7% of the companies have rated lack of information as a barrier.



*Lack of technical assets and equipment* was rated by 85.2% of companies. For 65.1% of the companies it is not a barrier, 34.8% of companies consider it to be somewhat of a barrier. No company has rated it to be a barrier.

*Corruption* as a barrier was rated by 81.5% of the surveyed companies. Of that 27.3% of the companies consider it to be a barrier, 22.7% of the companies consider it somewhat of a barrier, while 22.7% of companies consider it not to be a barrier.

Analysis of the 27.3% of companies that consider corruption a barrier shows: 40% are from the southern region of Montenegro; 42.9% were founded from 1991 to 1995; 33.3% are small companies; 75% of companies have an annual income of over €1,000,000; 40% are companies where the executive director has a college degree; and for 100% of companies in which the number of employees with a college degree compared to the total number of employees, is from 11% to 25%.

*Political situation* was rated by 88.9% of surveyed companies. It does represent a barrier for 8.3% of the companies, 58.3% of the companies consider it somewhat of a barrier, while 33% of the companies don't consider it a barrier.

*High customs* were rated by 70.4% of the companies. They don't represent a barrier for 57.9% of the companies; while 21.1% of the companies consider it to be somewhat of a barrier. High customs are a barrier for 21.1% of the surveyed companies.

*Inflation* was rated by 63.3% of the companies. It doesn't represent a barrier for 70.6% of the surveyed companies, 29.4% of the companies consider it somewhat of a barrier. There are no companies that have stated inflation as a barrier.

*Inadequate or obsolete production capacity*, as a barrier, was rated by 85.2% of companies from the ICT sector. It doesn't present a barrier for 73.9% of the companies from the ICT sector, for 21.7% it does present somewhat of a barrier, and only 4.3% of surveyed companies find inadequate or obsolete production capacity as a barrier to doing business.

*Level of expertise of the employees*, as a barrier, were rated by 85.2% of the surveyed companies. Of that number 82.6% of companies from the ICT sector considers that the level of expertise of the employees does not present a barrier, while only 8.7% of them consider it to be somewhat of a barrier. That same percentage (8.3%) is of companies that have rated this as a barrier.

*Skills of the workforce* doesn't represent a barrier for 82.6% of the companies, while only 8.7% of them consider it to be somewhat of a barrier. Also 8.7% of the companies consider that the skills of the workforce present a barrier.

*Managerial skills* as a barrier were rated by 85.2% of the companies. Of that number 60.9% of the companies consider it not a barrier, 30.4% of the companies consider it somewhat of a barrier, while 8.4% of the companies rated managerial skills as a barrier.

In the summary overview on the level of the entire sample, the indicator points to the fact that the biggest barrier for doing business for ICT companies in Montenegro are high taxes (0.71), followed by administrative burdens.

*Table 4. Barriers in ICT enterprises*

BARRIERS FOR CONDUCTING THE BUSINESS	INDICATOR
High taxes	0,71
Administrative limitations	0,58
Foreign capital	0,54
Corruption	0,52
Disloyal competition	0,50
Frequent changes in the regulation	0,48
Political situation	0,38
High customs	0,32
Export barriers	0,25
Managerial skills	0,24
Lack of information	0,23
Lack of technical assets and equipment	0,17
Inadequate or obsolete production capacities	0,15
Inflation	0,15
Level of expertise of the employees	0,13
Skills of the workforce	0,13

### ***2. Is the company a member of a business association?***

Of the total number of surveyed companies from the ICT sector of Montenegro 96.3% of them answered the question regarding the membership of a business association. The research has showed that among those that have responded 42.3% of them are members of a business association; 50% of them are not, and 7.7% are not, but are planning to join a business association.

Analysis of the 42.3% of the companies that are members of a business association shows: 60% of companies are from the southern region of Montenegro; 100% of companies were founded prior to 1990; 71.4% are small companies; 80% are companies with an annual income over €1,000,000; 100% of companies have a director with a high school degree; and 66.7% are companies in which the number of employees with a college degree compared to the total number of employees, is up to 10%.

#### ***What associations?***

This question was answered by 90.9% of companies that are in a business association. The most frequent association in Montenegro that gathers ICT companies is Montenegro Business Alliance (MBA) (70%), followed by the Montenegrin Union of Employers, and Comrade Group (11.1%)

### ***3. How do you rate the Law on Public Procurement?***

Of the total number of surveyed companies 33% responded that the Law on public procurement did not bring any changes; 25.8% of surveyed companies considers that it brought significant improvements, while 22.2% of the surveyed companies consider it to have increased corruption.

The surveyed companies had the possibility to give an alternative response. 18.5% of the surveyed companies that have given a special comment, the most frequent is the one that there is no sanction in the law (40%).

“It has brought significant improvements” was the grade most often given among the grades from: the central part of Montenegro (29.4%); companies founded prior to 1990; 28.6% small companies; 40% of companies with an annual income of more than €1,000,000; 33.3% of companies where the executive director has a higher school degree, and 50% are companies in which the number of employees with a college degree compared to the total number of employees, is greater than 50%.

#### 4. Have you participated on public tenders?

The response to the question regarding public tenders was given by 96.3% of surveyed companies. Of that 80.8% have taken part in a public tender, while 19.2% have not.

Analysis of the 80.8% of companies that have taken part in public tenders shows: 93.8% of companies are from the central region of Montenegro; 100% are small companies; 100% are companies with an annual income of more than €1,000,000; 100% are companies where the director has a high school or higher school degree; 80% are companies in which the number of employees with a college degree compared to the total number of employees, is from 26% to 50%.

Of the total number of companies that consider the Law on public procurement to have brought significant improvements 85.7% took part in public tenders; while those companies that consider the new law to have brought corruption, 60% took part in public tenders.

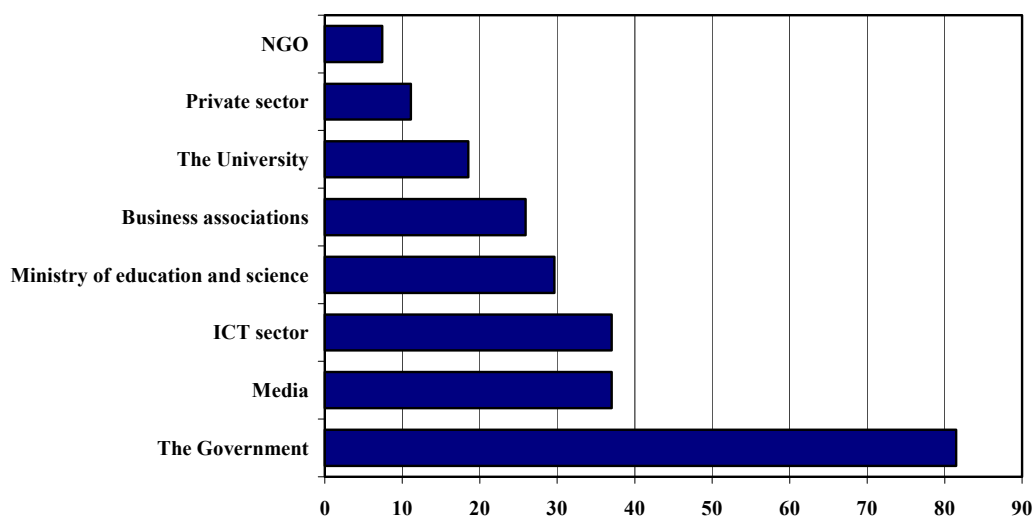
#### *If not, why?*

Only companies that stated not to have taken part in any public tender responded to this question. The most common response was a complicated procedure (75%) and inadequate capacities (25%)

#### 5. Who should be in charge of creating a suitable environment for the development of the information society in Montenegro?

According to the opinion of the surveyed companies the Government of Montenegro is the most responsible for further ICT development in Montenegro (81.4%), the ICT sector (37%) and the media (37%).

*Graph 53. Factors in the development of the information society in Montenegro*



Analysis of the 81.4% of companies that have stated that the Government should be the mainspring shows: 94.1% are from the central region of Montenegro; 100% were founded from 1995 to 2000; 85.7% are small companies; 100% have an annual income of over €1,000,000; 100% are companies where the director has a higher school degree; and 100% are companies in which the number of employees with a college degree compared to the total number of employees, is up to 10%.

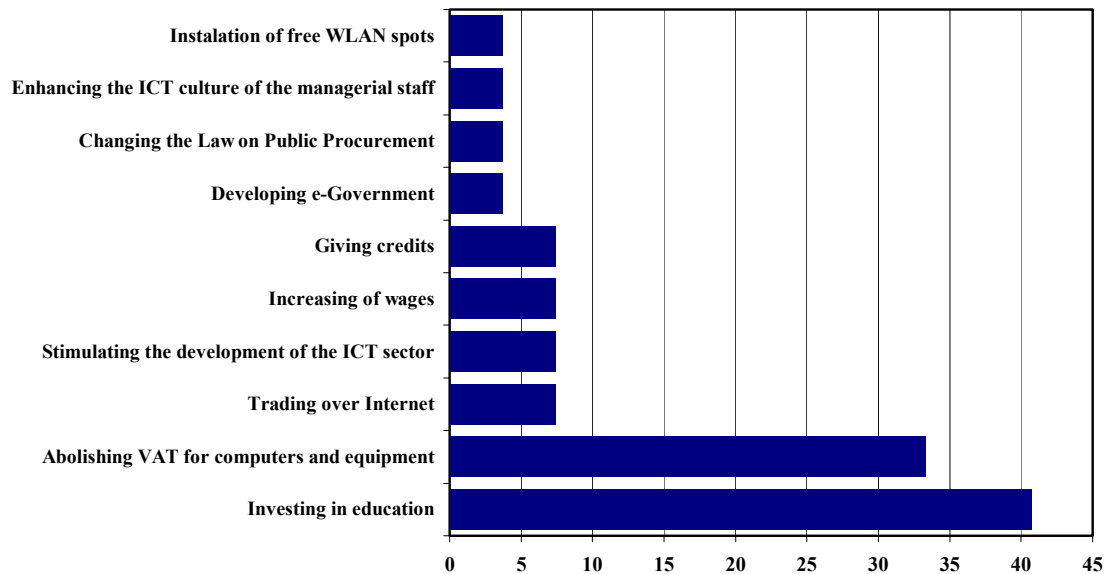
Analysis of the 37% of companies that consider that firms from the ICT sector should contribute to the creation of a more suitable environment for the development of the information society shows: 60% of companies are from the northern region of Montenegro; 66.7% of companies have an executive director with a high school degree; and 66.7% are companies in which the number of employees with a college degree compared to the total number of employees, is up to 10%.

Analysis of the 37% of companies that consider that the media would help shows: 60% of companies are from the northern region of Montenegro; 44.4% of companies were founded from 1991 to 1995; 33.3% are micro companies; 66.7% are companies where the executive director has a higher school degree and 36.4% are companies in which the number of employees with a college degree compared to the total number of employees, is from 26% to 50%.

#### **6. What should be done to improve the usage of computers and the Internet in Montenegro?**

This question gave possibilities for free comments and propositions regarding what should be done to improve the usage of computers and the Internet in Montenegro. The surveyed companies could have given multiple responses, which were later unified and separated.

**Graph 54. Suggestions for increasing computer and Internet usage**



Education in the areas of computer and Internet usage, judging by the given responses, is still lacking, considering that it was a proposal for the development of the ICT sector in Montenegro (40.7%). Some of the other propositions related to the abolishing of VAT for computers and computer equipment (33.3%), and trading on the Internet (7.4%).

### ICT INDICATORS

ICT indicators represent parameters of ICT development in one country. They also represent trends in telecommunication market development. On the other hand, ICT indicators are different between the countries (with highly developed telecommunication infrastructure) and developing countries. According to OECD countries regulations, the most important ICT indicators are: the number of main telephone lines, cellular mobile subscribers, number of televisions, number of PC users, number of Internet users and number of Internet hosts.

*Table 5. ICT indicators in Montenegro*

ICT INDICATORS	1999	2000	2001	2002	2003	2004
Main telephone lines	169.5	177.4	182.5	188	190	190
Public telephones	0.53	0.86	1.25	1.3	1.28	-
Cellular mobile subscribers	62.3	241.4	356.2	445	420	783
Internet hosts	6.3	11.3	18	27	37.5	35

*Source: Telecommunication Agency of Montenegro; Internet CG; ISSP Household survey*

*Note: All data related with 1,000 habitants*

According to the most important ICT indicators, the telecommunication market of Montenegro is in expansion through an increasing number of main telephone lines, Internet hosts and fixed and cellular mobile subscribers.

#### **Telecommunication market of Montenegro at the end of 2003**

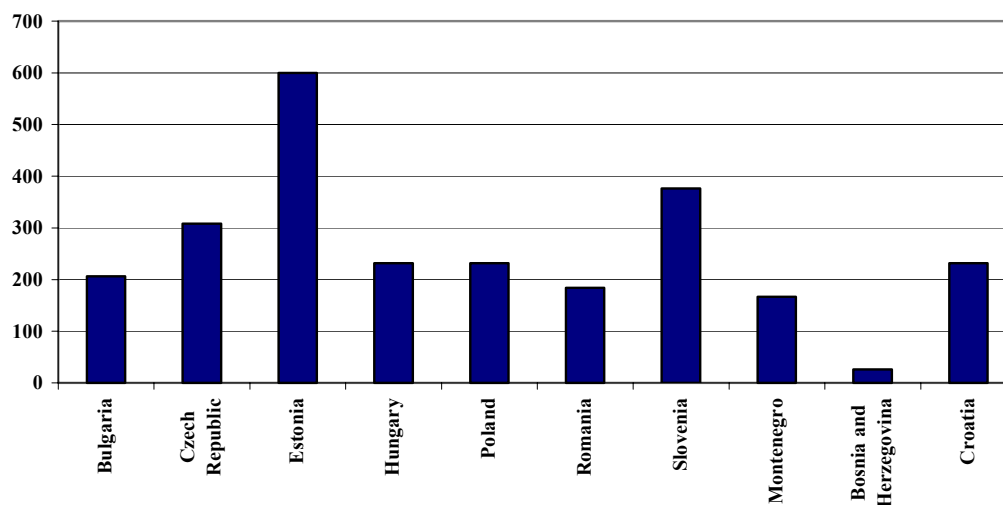
*Telecommunication market of Montenegro (fixed, mobile telephones and Internet) in the last several years is in phase of expansion:*

- 190,000 fixed telephone subscribers;
- Digitalization of fixed network (100%);
- 420,338 cellular mobile phone users;
- 35,000 Internet hosts;
- Internet penetration rate 1.25%.

Considering a three-year period, the number of telephone lines increased 6.6% in 2003, in comparison with 2000. Digitalization of fixed network is on a level of 100% that is characteristic only in developed countries. Countries from the region have digitalization of fixed networks on a level from 22% to 90%.

Furthermore, the number of cellular mobile subscribers in 2003 increased from 241,400 in 2000 to 420,338 in 2003 (increase of 74.1%). According to the cellular mobile subscribers penetration, Montenegro is on a level of 68% which is higher than average in countries ready for integration into the EU (43%). Considering the total population (620,145 according to data from 2003) Montenegro is the first country in the region, according to the number of cellular mobile users.

It is worth mentioning an increasing trend of dial-up Internet subscribers in Montenegro. According to that, the number of Internet subscribers in 2003 compared with 2002 increased 40.1% (35,000 new Internet hosts in 2003).

**Graph 55. Number of Internet users (regional comparison)**

Note: All data related with 1,000 habitants

**Table 6. ICT indicators of countries in the region**

	NUMBER OF TELEVISIONS	NUMBER OF INTERNET USERS	NUMBER OF INTERNET SUBSCRIBERS	NUMBER OF FIXED TELEPHONE LINES	NUMBER OF CELLULAR MOBILE SUBSCRIBERS
Bulgaria		206	205.8	2856.1	466
Czech Republic	538	308	308.1	3626.3	964
Estonia	507	600	444.1	461	777
Hungary	475	232	232.2	3602.9	768
Poland	229	232	232.4	318.7	450
Romania	697	184	184	199.4	324
Slovenia	366	376	400.6	406.8	870
Bosnia and Herzegovina		26.2	1.8	244.8	274
Croatia		231.8	6.7	417.2	583

Source: ITU- International Telecommunication Union, Telecommunication Agency of Montenegro, Internet CG  
Calculations: CARA

The low level of purchasing parity, lack of expertise and educational programs in the area of ICT are some of the limitation factors of future ICT development in Montenegro. Future ICT development in Montenegro is highly dependent of the level of information literacy among households and enterprises.

**CONCLUSIONS**

Permanent innovations in the field of information technology and communications (ICT) create a gap between developed countries and developing countries. Modern business, communication and life style are highly dependent on information technology use. Expertise (starting with information literacy to a sophisticated level of expertise) in that area is one of the most important factors of ICT implementation in transitional countries.

Where is Montenegro, as a transitional economy, in that process? A survey on PC and Internet usage in Montenegro tried to give answers on that question, according to the data and the level of knowledge between populations. The level of information technology usage in Montenegrin households and enterprises are one of the most important questions in the survey.

Analyzing households in Montenegro, there's an increasing need for extra education of the younger generation. In that area, it's important to:

1. Promote education in primary and secondary schools;
2. Organize various contests in PC usage in primary and secondary schools;
3. Organize courses for children and parents.

Analyzing enterprises in Montenegro, it's important to:

1. Organize support programs for software legalization;
2. Initiate tax reductions in the ICT area;
3. Initiate a campaign for the struggle against software pirates.

Generally, what should be done in Montenegro in order to increase further development of ICT? It's important to:

1. Develop and complete regulatory and institutionally framework future ICT development;
2. Develop ICT infrastructure;
3. Develop institutions for ICT development supporting, through different programs and projects (education of population, ICT in business);
4. Develop standards in the ICT area and implement them;
5. Develop e-commerce;
6. Develop e-government;
7. Develop educational levels for the information literacy field; and
8. Develop monitoring of the ICT sector in Montenegro.

The survey on computer and Internet usage in Montenegro is still beginning and is the basis for further activities in the field of ICT, especially information literacy. It is one of the first projects in the area of ICT research in Montenegro that analyses the populations needs in order to develop a level of information culture.

**- ANNEX -**



SURVEY ON COMPUTER AND INTERNET USAGE IN HOUSEHOLDS

Part I BASIC QUESTIONS

1. Region

	Number	Percent
Central	535	54.1
North	241	24.4
South	212	21.5
<b>Total</b>	<b>988</b>	<b>100.0</b>

Municipality

	Number	Percent
Bar	95	9.6
Berane	73	7.4
Bijelo Polje	94	9.5
Cetinje	40	4.0
Herceg Novi	74	7.5
Niksic	147	14.9
Pljevlja	74	7.5
Podgorica	348	35.2
Ulcinj	43	4.4
<b>Total</b>	<b>988</b>	<b>100.0</b>

2. Number of household members

	Number	Percent	Valid percent
Up to 3	90	9.1	9.2
From 4 to 6	829	83.9	84.8
More than 6	59	6.0	6.0
Total	978	99.0	100.0
Without answer	10	1.0	
<b>Total</b>	<b>988</b>	<b>100.0</b>	

3. Number of children under 18

	Number	Percent
None	57	5.8
One	196	19.8
Two	395	40.0
Three	262	26.5
Four	62	6.3
Five	13	1.3
Six	2	0.2
Fifteen	1	0.1
<b>Total</b>	<b>988</b>	<b>100.0</b>

4. Average monthly salary

	Number	Percent	Valid percent
Less than €200	264	26.7	29.4
200-300	227	23.0	25.3
300-400	136	13.8	15.1
400-500	117	11.8	13.0
500-700	77	7.8	8.6
More than €700	77	7.8	8.6
Total	898	90.9	100.0
Without answer	90	9.1	
<b>Total</b>	<b>988</b>	<b>100.0</b>	

**5. Profession**

	Number	Percent	Valid percent
Pupil/student	413	41.8	43.6
Unemployed	79	8.0	8.3
Housewife	58	5.9	6.1
Employee in state institution	138	14.0	14.6
Chief in state institution	32	3.2	3.4
Employee in private enterprise/NGO	71	7.2	7.5
Entrepreneur/owner/partner in private enterprise	52	5.3	5.5
Military	14	1.4	1.5
Pensioner	24	2.4	2.5
Other profession	67	6.8	7.1
Total	948	96.0	100.0
Without answer	40	4.0	
<b>Total</b>	<b>988</b>	<b>100.0</b>	

<b>Part II COMPUTERS IN HOUSEHOLD</b>
---------------------------------------

**1. Does the household own a computer?**

	Number	Percent	Valid percent
Yes	403	40.8	41.5
No	568	57.5	58.5
Total	971	98.3	100.0
Without answer	17	1.7	
<b>Total</b>	<b>988</b>	<b>100.0</b>	

**2. Does the household intend to buy a computer in the near future?<sup>2</sup>**

	Number	Percent	Valid percent
Yes	374	65.8	68.4
No	173	30.5	31.6
Total	547	96.3	100.0
Without answer	21	3.7	
<b>Total</b>	<b>568</b>	<b>100.0</b>	

**3. Which are restrictive factors for computer buying?**

	Number	Percent	Valid percent
Lack of financial resources	427	75.2	80.3
Lack of interest	51	9.0	9.6
Lack of free time	38	6.7	7.1
Lack of knowledge	9	1.6	1.7
Other	7	1.2	1.3
Total	532	93.7	100.0
Without answer	36	6.3	
<b>Total</b>	<b>568</b>	<b>100.0</b>	

**4. Where would you buy computer and equipment if you decide to buy it?**

	Number	Percent	Valid percent
Licensed ICT enterprise	333	58.6	77.8
'Gray' market	73	12.9	17.1
Other	22	3.9	5.1
Total	428	75.4	100.0
Without answer	140	24.6	
<b>Total</b>	<b>568</b>	<b>100.0</b>	

<sup>2</sup> Household members in household that don't have computers answered question.

## Survey on computer and Internet usage in Montenegro

### From which licensed ICT enterprise?

	Number	Percent	Valid percent
Don't know	7	2.1	16.3
Cikom	6	1.8	14.0
Platon Computers	5	1.5	11.6
Tagor	5	1.5	11.6
Radius	4	1.2	9.3
Jugodata	3	0.9	7.0
Vector Computers	3	0.9	7.0
Modro	2	0.6	4.7
Hard Net	2	0.6	4.7
Microbit	1	0.3	2.3
Panda	1	0.3	2.3
Gravex	1	0.3	2.3
Sars	1	0.3	2.3
Top Computers	1	0.3	2.3
Zvis	1	0.3	2.3
Total	43	12.9	100.0
Without answer	290	87.1	
<b>Total</b>	<b>333</b>	<b>100.0</b>	

### 5. How many household members do use the computer?

	Number	Percent	Valid percent
1	75	7.6	8.7
2	110	11.1	12.8
More than 3	163	16.5	18.9
All of them	129	13.1	15.0
None	385	39.0	44.7
Total	862	87.2	100.0
Without answer	126	12.8	
<b>Total</b>	<b>988</b>	<b>100.0</b>	

### 6. Who most frequently uses the computer in household?<sup>3</sup>

Possibility of giving more than one answer	Number	Percent	Valid percent
Children younger than 18 years	217	40.8	56.4
Examinee	162	30.5	42.1
Children above 18 years	68	12.8	17.7
Husband/wife	55	10.3	14.3
Other members	19	3.6	4.9
Friends	11	2.1	2.9

### 7. How often do you use a computer?

	Number	Percent	Valid percent
Daily	305	63.0	64.1
Weekly	81	16.7	17.0
1-3 times per month	41	8.5	8.6
Less than once per month	14	2.9	2.9
Don't know	35	7.2	7.4
Total	476	98.3	100.0
Without answer	8	1.7	
<b>Total</b>	<b>484</b>	<b>100.0</b>	

<sup>3</sup>Household members in household that own computers and at least on member is a computer user answered question.

**8. Where did you learn to use a computer?**

	Number	Percent	Valid percent
School	65	13.4	13.7
Faculty	23	4.8	4.9
Working place	67	13.8	14.2
Special course	53	11.0	11.2
By myself	187	38.6	39.5
With friends/cousins	73	15.1	15.4
Other	5	1.0	1.1
Total	473	97.7	100.0
Without answer	11	2.3	
<b>Total</b>	<b>484</b>	<b>100.0</b>	

**9. How would you evaluate your knowledge of using a computer?**

	Number	Percent	Valid percent
Expert	18	3.7	3.8
High	35	7.2	7.5
Middle	236	48.8	50.3
Beginner	119	24.6	25.4
Cannot evaluate	61	12.6	13.0
Total	469	96.9	100.0
Without answer	15	3.1	
<b>Total</b>	<b>484</b>	<b>100.0</b>	

**10. For what purpose do you use the computer often?**

<i>Possibility of giving more than one answer</i>	Number	Percent	Valid percent
Business	157	21.3	32.4
Work for employer	66	9.0	13.6
Work for own business	54	7.3	11.2
Education purposes	210	28.5	43.4
Games	249	33.8	51.4

**11. The reason why you don't use a computer<sup>4</sup>**

	Number	Percent	Valid percent
Lack of knowledge	76	17.3	22.6
Lack of interest	48	10.9	14.3
Lack of need	50	11.4	14.9
Lack of free time	58	13.2	17.3
Lack of financial resources	63	14.4	18.8
Do not have a computer	41	9.3	12.2
Total	336	76.5	100.0
Without answer	103	23.5	
<b>Total</b>	<b>439</b>	<b>100.0</b>	

**12. Are you ready to get additional education in the field of using computers?**

	Number	Percent	Valid percent
Yes	643	65.1	73.4
No	233	23.6	26.6
Total	876	88.7	100.0
Without answer	112	11.3	
<b>Total</b>	<b>988</b>	<b>100.0</b>	

<sup>4</sup> Household members in a household that does not have a computers answered question.

13. If answer is "no", why?<sup>5</sup>

	Number	Percent	Valid percent
Lack of financial resources	95	40.8	45.5
Lack of interest	50	21.5	23.9
Lack of need	60	25.8	28.7
Other	4	1.7	1.9
Total	209	89.7	100.0
Without answer	24	10.3	
<b>Total</b>	<b>233</b>	<b>100.0</b>	

**Part III HARDWARE AND SOFTWARE<sup>6</sup>**

1. The number of computers in households

	Number	Percent	Valid percent
One	346	85.9	88.7
Two	37	9.2	9.5
Three and more	7	1.7	1.8
Total	390	96.8	100.0
Without answer	13	3.2	
<b>Total</b>	<b>403</b>	<b>100.0</b>	

2. Which year did you buy a computer?<sup>7</sup>

	Number	Percent	Valid percent
Before 2000	93	23.1	24.8
From 2001 to 2003	181	44.9	48.3
In 2004	101	25.1	26.9
Total	375	93.1	100.0
Without answer	28	6.9	
<b>Total</b>	<b>403</b>	<b>100.0</b>	

<sup>5</sup> Question for respondents that are not ready for extra education.

<sup>6</sup> The respondents answered questions in part III from households that own computers.

<sup>7</sup> If household purchased more than one computer they gave the answer about the purchasing year of new one.

## 3. Where did you buy a computer (name of the firm)?

	Number	Percent
Out of Montenegro	55	21.8
Cikom	26	10.3
Tagor	21	8.3
Jugodata	16	6.3
Don't know	14	5.6
Chip computers	12	4.8
Second-hand computer	10	4.0
Hard Net	10	4.0
Platon	9	3.6
Gift	8	3.2
Microbit	7	2.8
Zvis	6	2.4
Neutron	4	1.6
Montex Elektronika	4	1.6
Informatika Montenegro	4	1.6
Boy Electronic	4	1.6
Radius	3	1.2
Mils computers	3	1.2
Milenijum	3	1.2
Data link	3	1.2
Auditron	3	1.2
Vector computers	2	0.8
Top computers	2	0.8
COMPUTER Home	2	0.8
Multiprint	2	0.8
Datronik	2	0.8
Cobra	2	0.8
Soft Company	1	0.4
Raster	1	0.4
Primus	1	0.4
Personal Computer Service	1	0.4
Peri Hard	1	0.4
Computer Media	1	0.4
Modro	1	0.4
MDKom	1	0.4
Kompromis	1	0.4
Gravex	1	0.4
Fokus	1	0.4
Digit Montenegro	1	0.4
CID	1	0.4
Bit	1	0.4
Biro Elektronika	1	0.4
<b>Total</b>	<b>252</b>	<b>100.0</b>

## 4. What kind of computer do you own?

<i>Possibility of giving more than one answer</i>	Number	100.0	101.1
Pentium I	16	3.9	4.0
Pentium II	62	15.2	15.4
Pentium III	79	19.4	19.6
Pentium IV	204	50.1	50.6
Intel Celeron	18	4.4	4.5
AMD Duron	2	0.5	0.5
AMD Athlon	26	6.4	6.5

## 5. What computer equipment do you own?

<i>Possibility of giving more than one answer</i>	Number	100.0	218.1
Printer	245	27.9	60.8
Scanner	90	10.2	22.3
Speakers	332	37.8	82.4
Web-camera	34	3.9	8.4
Handheld partition	31	3.5	7.7
Microphone	93	10.6	23.1
Browser memory label	54	6.1	13.4

**6. Most often used programs**

<i>Possibility of giving more than one answer</i>	Number	100.0	289.3
GoLive	3	0.3	0.7
FoxPro	5	0.4	1.2
R.A.V.E.	6	0.5	1.5
Other	7	0.6	1.7
InDesing	8	0.7	2.0
Open Office	11	0.9	2.7
Illustrator	11	0.9	2.7
C++	17	1.5	4.2
InterDev	18	1.5	4.5
Visual Basic	33	2.8	8.2
Access	42	3.6	10.4
PowerPoint	58	5.0	14.4
Acrobat Reader	77	6.6	19.1
Corel Draw	93	8.0	23.1
Photo-Paint	95	8.1	23.6
Outlook	115	9.9	28.5
Photoshop	119	10.2	29.5
Excel	137	11.7	34.0
Word	311	26.7	77.2

**7. Use of certain type of operating system**

<i>Possibility of giving more than one answer</i>	Number	100.0	90.1
Windows XP	186	46.2	51.2
Windows 98 or 98 Second Edition	92	22.8	25.3
Windows 2000	37	9.2	10.2
Windows Millennium	26	6.5	7.2
Windows 95	14	3.5	3.9
MS-DOS/Windows 3 XX	3	0.7	0.8
Linux	2	0.5	0.6
Unix	2	0.5	0.6
Windows NT	1	0.2	0.3

**Part IV INTERNET**

**1. How many family members use the Internet?<sup>8</sup>**

	Number	Percent	Valid percent
None	464	49.8	57.1
One	153	16.4	18.8
More than two	195	20.9	24.0
Total	812	87.2	100.0
Without answer	119	12.8	
<b>Total</b>	<b>931</b>	<b>100.0</b>	

**2. How often is the Internet used?<sup>9</sup>**

	Number	Percent	Valid percent
Daily	162	39.4	40.7
Weekly	141	34.3	35.4
1-3 times per month	65	15.8	16.3
Less than once per month	30	7.3	7.5
Total	398	96.8	100.0
Without answer	13	3.2	
<b>Total</b>	<b>411</b>	<b>100.0</b>	

<sup>8</sup> Question answered by those respondents that have children under 18.

<sup>9</sup> Question answered by those who are Internet users.

**3. Where is the Internet mostly used?**

	Number	Percent	Valid percent
At home	262	63.7	67.2
In office	50	12.2	12.8
School/faculty	20	4.9	5.1
At cousin's home	35	8.5	9.0
Internet café	23	5.6	5.9
Total	390	94.9	100.0
Without answer	21	5.1	
<b>Total</b>	<b>411</b>	<b>100.0</b>	

**4. Do you use e-mail?**

	Number	Percent	Valid percent
Yes	303	73.7	80.2
No	75	18.2	19.8
Total	378	92.0	100.0
Without answer	33	8.0	
<b>Total</b>	<b>411</b>	<b>100.0</b>	

**5. For what purposes is the Internet mostly used?**

<i>Possibility of giving more than one answer</i>	Number	Percent	Valid percent
Business	93	8.8	22.6
E-mail	179	17.0	43.6
Information	208	19.8	50.6
E-commerce	12	1.1	2.9
Education	130	12.3	31.6
News	109	10.4	26.5
Fun/chat	243	23.1	59.1
Games	79	7.5	19.2

**6. Does the household own a modem?<sup>10</sup>**

	Number	Percent	Valid percent
Yes	261	64.8	64.8
No	142	35.2	35.2
<b>Total</b>	<b>403</b>	<b>100.0</b>	<b>100.0</b>

**7. Type of connection<sup>11</sup>**

	Number	Percent	Valid percent
Dial-up	190	72.8	80.5
ISDN	36	13.8	15.3
ADSL	9	3.4	3.8
Other	1	.4	.4
Total	236	90.4	100.0
Without answer	25	9.6	
<b>Total</b>	<b>261</b>	<b>100.0</b>	

**8. The way you are paying Internet hours**

	Number	Percent	Valid percent
Monthly	56	21.5	22.4
Special tariff packet	8	3.1	3.2
Per hour	186	71.3	74.4
Total	250	95.8	100.0
Without answer	11	4.2	
<b>Total</b>	<b>261</b>	<b>100.0</b>	

<sup>10</sup> Question answered by households that own a computer.

<sup>11</sup> Questions 8 and 9 answered by households that have an Internet connection.



**9. What is the reason for not having an Internet connection?<sup>12</sup>**

	Number	Percent	Valid percent
Lack of interest	22	15.5	26.8
Price of Internet services	19	13.4	23.2
Lack of knowledge	9	6.3	11.0
Lack of technical possibilities	12	8.5	14.6
Lack of time	15	10.6	18.3
Other	5	3.5	6.1
Total	82	57.7	100.0
Without answer	60	42.3	
<b>Total</b>	<b>142</b>	<b>100.0</b>	

**Part V INFORMATION SOCIETY DEVELOPMENT FROM THE HOUSEHOLD VIEWPOINT**

**1. Did you buy a computer or equipment in 2004?<sup>13</sup>**

	Number	Percent	Valid percent
Yes	152	37.7	37.7
No	251	62.3	62.3
<b>Total</b>	<b>403</b>	<b>100.0</b>	<b>100.0</b>

**What did you buy in 2004?**

<i>Possibility of giving more than one answer</i>	Number	Percent	Valid percent
Computer	59	32.8	38.8
Equipment	121	67.2	79.6

**2. Equipment**

	Number	100	163.6
Printer	41	20.7	33.9
Loudspeakers	30	15.2	24.8
Mouse	27	13.6	22.3
Scanner	25	12.6	20.7
CD	11	5.6	9.1
Camera	9	4.5	7.4
Keyboard	11	5.6	9.1
Microphone	7	3.5	5.8
DVD	5	2.5	4.1
Graphics card	4	2.0	3.3
Loudspeakers	4	2.0	3.3
Browser memory label	3	1.5	2.5
Hard disk	4	2.0	3.3
Modem	3	1.5	2.5
Handheld partition	4	2.0	3.3
Toner	3	1.5	2.5
Handler	3	1.5	2.5
IRD port	2	1.0	1.7
Microprocessor	3	1.5	2.5
USB	1	0.5	0.8
Fax	2	1.0	1.7
Elfon	1	0.5	0.8
Game	1	0.5	0.8
Mouse pad	1	0.5	0.8
Consuming material	1	0.5	0.8
Ram	1	0.5	0.8
Monitor	1	0.5	0.8
Copy	1	0.5	0.8
All renewed	1	0.5	0.8

<sup>12</sup> Question answered by those who have a computer, but don't have an Internet connection.

<sup>13</sup> Questions 1 and 2 answered by households that own a computer.

**3. Where did you buy the computer?**

	Number	Percent
Cikom	3	9.4
Neutron computers	3	9.4
Platon	3	9.4
Tagor	3	9.4
Van Crne Gore	3	9.4
Hardnet	2	6.3
Montex elektronika	2	6.3
Acme	1	3.1
Boy electronic	1	3.1
Datalink	1	3.1
Intertrade	1	3.1
Jugodata	1	3.1
Computer home	1	3.1
Private	1	3.1
Sea sky	1	3.1
Soft Company	1	3.1
Strong Electronics	1	3.1
Chip	1	3.1
Top computers	1	3.1
Zvis	1	3.1

**4. Where did you buy the equipment?**

	Number	Percent
Out of Montenegro	5	8.3
Montex elektronika	4	6.7
Chip	3	5.0
Jugodata	3	5.0
Modro	3	5.0
Multiprint	3	5.0
Platon Computers	3	5.0
Cikom	2	3.3
Boy electronic	2	3.3
Compaq	2	3.3
Hardnet	2	3.3
Matrix	2	3.3
Microbit	2	3.3
On grey market	2	3.3
Tagor	2	3.3
Zvis	2	3.3
Acme	1	1.7
Auditron	1	1.7
Birotex	1	1.7
Datalink	1	1.7
€onet	1	1.7
Genius	1	1.7
Gravex	1	1.7
Jolly Comere	1	1.7
Mils	1	1.7
Nec	1	1.7
Computer home	1	1.7
Peri Hard	1	1.7
Sea sky	1	1.7
Soft Company	1	1.7
Strong Electronics	1	1.7
Top computers	1	1.7
Don't know	1	1.7

## Survey on computer and Internet usage in Montenegro

### 5. How much of household financial resources were spent for computer and equipment purchases during the year 2004?

	Number	Percent	Valid percent
Up to €250	128	31.8	47.9
From €250 to €500	49	12.2	18.4
From €500 to €1,000	74	18.4	27.7
More than €1,000	16	4.0	6.0
Total	267	66.3	100.0
Without answer	136	33.7	
<b>Total</b>	<b>403</b>	<b>100.0</b>	

### 6. How much of household financial resources will be spent in the year 2005?<sup>14</sup>

	Number	Percent	Valid percent
Up to €250	179	23.0	55.4
From €250 to €500	97	12.5	30.0
From €500 to €1,000	35	4.5	10.8
More than €1,000	12	1.5	3.7
Total	323	41.6	100.0
Without answer	454	58.4	
<b>Total</b>	<b>777</b>	<b>100.0</b>	

### 7. Who from the household wants to improve knowledge in the information area and under what conditions?

<i>Possibility of giving more than one answer</i>	Number	Percent	Valid percent
Husband/wife	140	21.0	23.7
Children (less than 18 years)	426	64.0	72.2
Children (above 18 years)	90	13.5	15.3
Other members	10	1.5	1.7

### *Educational conditions*

	Number	Percent
Financial resources	42	29.8
Education in school	28	19.9
Free or better training courses	25	17.7
Computer purchasing	11	7.8
Lower prices of training course	12	8.5
Free services	1	0.7
Literature	1	0.7
Free computers and Internet use	1	0.7
Free time	6	4.3
Learning at home via CD or VHS	1	0.7
Better information	1	0.7
More Internet cafés	1	0.7
Better organization	2	1.4
Better lecturer capabilities	2	1.4
Better living standards	2	1.4
Payment in part	2	1.4
Better equipment	3	2.1
<b>Total</b>	<b>141</b>	<b>100.0</b>

### 8. Who is responsible for development of the information society in Montenegro?

<i>Possibility of giving more than one answer</i>	Number	Percent	Valid percent
Government	591	41.8	59.8
University	95	6.7	9.6
Ministry of education and science	446	31.5	45.1
Business sector	35	2.5	3.5
NGO sector	29	2.0	2.9
ICT sector	24	1.7	2.4
Media	132	9.3	13.4
Business associations	63	4.5	6.4

<sup>14</sup> Question answered by those who currently don't have a computer, but intend to buy one.

**9. What should be done for better use of computers and the Internet in Montenegro?**

	Number	Percent
Computer price reduction	179	29.7
Stimulate education in schools	101	16.7
Upgrade living standards	81	13.4
Decrease Internet prices	50	8.3
Tax reduction	42	7.0
Better credit environment	36	6.0
Decrease prices of courses or initiate free courses	25	4.1
Initiate free Internet	13	2.2
Educate younger children	9	1.5
Increase level of media participation	9	1.5
More schools provided with computer equipment	8	1.3
Initiate new services of Telecom and upgrade available	7	1.2
Investing in education	7	1.2
Decrease service prices of Telecom (ISDN)	6	1.0
Upgrade government stimulation	5	0.8
Upgrade ICT promotion	4	0.7
Involve more Internet providers	4	0.7
Provide free computers	4	0.7
Increase number of public places with available Internet	3	0.5
Increases competitive (subtraction monopoly of Internet CG)	3	0.5
Involve foreign investors	2	0.3
Involve NGO sector	2	0.3
Upgrade electricity network	1	0.2
Increase number of education centers	1	0.2
Open new jobs	1	0.2
Increase production of computers	1	0.2
<b>Total</b>	<b>608</b>	<b>100.0</b>

**SURVEY ON COMPUTER AND INTERNET USAGE IN ENTERPRISES****Part I BASIC QUESTIONS****1. Enterprise structure by the region**

	Number	Percent	Valid Percent
South	73	36.5	36.5
Central	87	43.5	43.5
North	40	20.0	20.0
<b>Total</b>	<b>200</b>	<b>100.0</b>	<b>100.0</b>

**2. Year of establishing**

	Number	Percent	Valid Percent
Up to 1990	33	16.5	17.9
From 1990 to 1995	56	28.0	30.4
From 1995 to 2000	57	28.5	31.0
After 2000	38	19.0	20.7
Total	184	92.0	100.0
Without answer	16	8.0	
<b>Total</b>	<b>200</b>	<b>100.0</b>	

**3. Number of employees**

	Number	Percent	Valid Percent
Micro	93	46.5	51.1
Little	66	33.0	36.3
Average	19	9.5	10.4
Big	4	2.0	2.2
Total	182	91.0	100.0
Without answer	18	9.0	
<b>Total</b>	<b>200</b>	<b>100.0</b>	

4. Main activity

<i>Possibility of giving more than one answer</i>	Number	100.0	139.0
Production	34	12.2	17.0
Retail trade	57	20.5	28.5
Wholesale	70	25.2	35.0
Hotels and restaurants	15	5.4	7.5
Tourism	16	5.8	8.0
Construction	23	8.3	11.5
Agriculture, forestry and hydraulic	2	0.7	1.0
Hunting and fishing	0	0.0	0.0
Extraction of minerals	0	0.0	0.0
Manufacturing industry	1	0.4	0.5
Electricity production and gas	0	0.0	0.0
Transport, traffic and connections	13	4.7	6.5
Financial consulting	8	2.9	4.0
Real property, charter and business activities	1	0.4	0.5
Education	0	0.0	0.0
Health and social protection	0	0.0	0.0
Other	38	13.7	19.0

5. Annual return of enterprise

	Number	Percent	Valid Percent
Up to €100,000	49	24.5	30.8
From €100,000 to €250,000	21	10.5	13.2
From €250,000 to €500,000	27	13.5	17.0
From €500,000 to €1,000,000	21	10.5	13.2
More than €1,000,000	41	20.5	25.8
Total	159	79.5	100.0
Without answer	41	20.5	
<b>Total</b>	<b>200</b>	<b>100.0</b>	

**Part II COMPUTERS IN ENTERPRISE**

1. Is the company using computers?

	Number	Percent	Valid Percent
Yes	185	92.5	93.4
No	13	6.5	6.6
Total	198	99.0	100.0
Without answer	2	1.0	
<b>Total</b>	<b>200</b>	<b>100.0</b>	

2. What is the main reason for not using a computer?<sup>15</sup>

<i>Possibility of giving more than one answer</i>	Number	100.0	115.4
Lack of need	6	40.0	46.2
Lack of financial resources	6	40.0	46.2
Lack of interests	0	0.0	0.0
Lack of knowledge	1	6.7	7.7
Other	2	13.3	15.4

3. Type of computers, quantity and average age

	Quantity	Total number of computers	Average age
Intel Pentium I	68	3.7	6.3
Intel Pentium II	134	7.3	4.4
Intel Pentium III	270	14.7	3.1
Intel Pentium IV	976	53.0	4.8
Intel Celeron	271	14.7	1.6
AMD Duron	28	1.5	1.0
AMD Athlon	95	5.2	1.8

<sup>15</sup> Question answered by enterprises that don't use computers.

**4. Average number of computers**

	Pentium I	Pentium II	Pentium III	Pentium IV	Intel Celeron	AMD Duron	AMD Athlon
Yes	18	49	79	127	13	4	10
No	167	136	106	58	172	181	175
Average	3.78	2.73	3.42	7.69	20.85	7.00	9.50

**5. Computer equipment**

<i>Possibility of giving more than one answer</i>	Number	Percent	Valid Percent
Printer	174	41.3	94.1
Scanner	90	21.4	48.6
Loudspeakers	102	24.2	55.1
Web-camera	13	3.1	7.0
Handheld partition	16	3.8	8.6
Microphone	11	2.6	5.9
Browser memory label	15	3.6	8.1

**6. What is the average annual expenditure on the procurement of computers and equipment in the year 2004?**

	Number	Percent	Valid Percent
No financial resources	35	18.9	19.6
From 0 to €500	46	24.9	25.7
From €500 to €1,000	35	18.9	19.6
From €1,000 to €2,000	28	15.1	15.6
From €2,000 to €5,000	18	9.7	10.1
More than €5,000	17	9.2	9.5
Total	179	96.8	100.0
Without answer	6	3.2	
<b>Total</b>	<b>185</b>	<b>100.0</b>	

**7. Type of operating system commonly used in the company**

<i>Possibility of giving more than one answer</i>	Number	Percent	Valid Percent
MS-DOS/Windows 3 XX	7	3.2	3.8
Windows 95	10	4.5	5.4
Windows 98	65	29.5	35.1
Windows NT	2	0.9	1.1
Windows Millennium	12	5.5	6.5
Windows 2000	42	19.1	22.7
Windows XP	80	36.4	43.2
Linux	1	0.5	0.5
Unix	1	0.5	0.5

**8. Most used application programs**

<i>Possibility of giving more than one answer</i>	Number	Percent	Valid Percent
Word	166	25.6	89.7
Excel	135	20.8	73.0
Outlook	63	9.7	34.1
Photoshop	55	8.5	29.7
Corel Draw	51	7.9	27.6
Acrobat Reader	45	6.9	24.3
Power Point	32	4.9	17.3
Other	22	3.4	11.9
Access	20	3.1	10.8
Photo Paint	15	2.3	8.1
Illustrator	13	2.0	7.0
Visual Basic	12	1.9	6.5
C++	9	1.4	4.9
InDesign	7	1.1	3.8
GoLive	7	1.1	3.8
R.A.V.E.	6	0.9	3.2
Fox pro	3	0.5	1.6
Open Office	1	0.2	0.5
Inter Dev	1	0.2	0.5

**9. What are the most frequent purposes for using the computer?**

<i>Possibility of giving more than one answer</i>	Number	Percent	Valid Percent
Process of production	34	8.8	18.4
Accountancy-finance	135	34.8	73.0
Administration	98	25.3	53.0
Communication	119	30.7	64.3
Other (fun)	2	0.5	1.1

**10. Are you preparing for the incoming software legalization?**

	Number	Percent	Valid Percent
Software licensed	27	14.6	16.4
Preparing	20	10.8	12.1
Not preparing	38	20.5	23.0
Lack of information	80	43.2	48.5
Total	165	89.2	100.0
Without answer	20	10.8	
<b>Total</b>	<b>185</b>	<b>100.0</b>	

**Way of preparation**

	Number	Valid Percent
Contact with company	1	20.0
Planning to buy a license	4	80.0
Total	5	100.0
Without answer	15	
<b>Total</b>	<b>20</b>	

11. If response is "yes" state the company in which you have bought the computer?<sup>16</sup>

<i>Possibility of giving more than one answer</i>	Number	100.0	103.6
Cikom	24	14.0	14.5
Agency for information	1	0.6	0.6
Alatel	2	1.2	1.2
Arb	1	0.6	0.6
Auditron	3	1.8	1.8
Biroelektro Bar	1	0.6	0.6
Centrobiro	4	2.3	2.4
Chip Computers	8	4.7	4.8
Click	3	1.8	1.8
Cobra system	2	1.2	1.2
Computer Servis	1	0.6	0.6
Comtrade	1	0.6	0.6
Comtrade group	2	1.2	1.2
Datalink	3	1.8	1.8
Datronc	3	1.8	1.8
EG Inženjering Niksic	1	0.6	0.6
Gravex	1	0.6	0.6
Hardnet	7	4.1	4.2
IDK Computers	1	0.6	0.6
Informatika Montenegro	4	2.3	2.4
Jugodata	13	7.6	7.9
Kos Intel	2	1.2	1.2
Link 086	1	0.6	0.6
MB Soft	1	0.6	0.6
MD COM	4	2.3	2.4
MG Soft	1	0.6	0.6
Microbit	2	1.2	1.2
Millenium Computers	2	1.2	1.2
Mils	6	3.5	3.6
Modro	4	2.3	2.4
Monteks elektronika	8	4.7	4.8
Multiprint	9	5.3	5.5
NCR	1	0.6	0.6
Panda	1	0.6	0.6
Platon	3	1.8	1.8
Soft Company	1	0.6	0.6
Tagor	13	7.6	7.9
Tradecom	3	1.8	1.8
Tricen doo	3	1.8	1.8
VPV	1	0.6	0.6
Zvis	7	4.1	4.2
BCOMPUTER	1	0.6	0.6
Comtel	1	0.6	0.6
Digit Montenegro	1	0.6	0.6
Informatika Montenegro	4	2.3	2.4
COMPUTER Computers	1	0.6	0.6
Smart tech	1	0.6	0.6
Tradecom	2	1.2	1.2
Yomil	1	0.6	0.6

<sup>16</sup>That question was answered by enterprises which use computers that are bought in Montenegro.



12. Where do you maintain your computer and computer equipment?

<i>Possibility of giving more than one answer</i>	Number	100.0	89.2
Out of Montenegro	3	1.8	1.6
ARB	6	3.6	3.2
Alatel	1	0.6	0.5
Auditron	5	3.0	2.7
Bast-Pljevlja	1	0.6	0.5
Biroelektro Bar	1	0.6	0.5
Boy Electronic	1	0.6	0.5
Chip	4	2.4	2.2
Cikom	19	11.5	10.3
Click Kotor	2	1.2	1.1
Cobra	2	1.2	1.1
Computer Servis	1	0.6	0.5
Comtrade group	1	0.6	0.5
CUOL	1	0.6	0.5
Datalink	1	0.6	0.5
Datronic	3	1.8	1.6
Detel	1	0.6	0.5
EG Inženjering Niksic	1	0.6	0.5
Elipsa	1	0.6	0.5
Gravex Bar	1	0.6	0.5
Hardnet	7	4.2	3.8
IDK Computers	1	0.6	0.5
Informatika Montenegro	6	3.6	3.2
Internet	2	1.2	1.1
Jugodata	10	6.1	5.4
Computer service Podgorica	1	0.6	0.5
Kos Intel	2	1.2	1.1
Kvisko	1	0.6	0.5
Link 086	1	0.6	0.5
MB Soft	1	0.6	0.5
MD COM	5	3.0	2.7
Microbit	2	1.2	1.1
Microdisk Novi Pazar	1	0.6	0.5
Millenium Computers	1	0.6	0.5
Mils	3	1.8	1.6
Modro	4	2.4	2.2
Montexelektronika	3	1.8	1.6
Multiprint	9	5.5	4.9
Panda Bijelo Polje	1	0.6	0.5
COMPUTER Computers	2	1.2	1.1
Personal computers	1	0.6	0.5
Platon	3	1.8	1.6
Soft Company	1	0.6	0.5
Tagor	11	6.7	5.9
Tisa Com Bar	1	0.6	0.5
Tradecom	2	1.2	1.1
Tricen	4	2.4	2.2
VPV	1	0.6	0.5
Employees into company	5	3.0	2.7
Zvis	12	7.3	6.5
Comtel	1	0.6	0.5
Digit Montenegro	1	0.6	0.5
Raster	1	0.6	0.5
Tagor	2	1.2	1.1

**13. Are you satisfied with the services?**

	Number	Percent	Valid Percent
Yes	159	85.9	95.2
No	8	4.3	4.8
Total	167	90.3	100.0
Without answer	18	9.7	
<b>Total</b>	<b>185</b>	<b>100.0</b>	

**14. How much will efficiency decrease if computers are not used?**

	Number	Percent	Valid Percent
Up to 25%	7	3.8	11.1
From 26% to 50%	38	20.5	60.3
From 51% to 75%	8	4.3	12.7
More than 75%	10	5.4	15.9
Total	63	34.1	100.0
Without answer	122	65.9	
<b>Total</b>	<b>185</b>	<b>100.0</b>	

**15. Do you intend to realize some procurement in the near future?<sup>17</sup>**

	Number	Percent	Valid Percent
Yes	56	53.3	54.4
No	47	44.8	45.6
Total	103	98.1	100.0
Without answer	2	1.9	
<b>Total</b>	<b>105</b>	<b>100.0</b>	

**16. What is the average amount the company will spend on the procurement of computers and computer equipment in 2005?**

	Number	Percent	Valid Percent
From 0 to €500	20	19.0	20.4
From €500 to €1,000	25	23.8	25.5
From €1,000 to €2,000	13	12.4	13.3
From €2,000 to €5,000	27	25.7	27.6
More than €5,000	13	12.4	13.3
Total	98	93.3	100.0
Without answer	7	6.7	
<b>Total</b>	<b>105</b>	<b>100.0</b>	

<b>Part III EMPLOYEES EDUCATION</b>
-------------------------------------

**1. How many employees are PC users in enterprise?**

	Number	Percent	Valid Percent
Up to 5 employees	123	66.5	67.6
From 6 to 10 employees	32	17.3	17.6
From 11 to 15 employees	9	4.9	4.9
15 employees and more	18	9.7	9.9
Total	182	98.4	100.0
Without answer	3	1.6	
<b>Total</b>	<b>185</b>	<b>100.0</b>	

<sup>17</sup>Questions 16 and 17 are answered examinees from enterprises which use computers and planning computer and equipment purchasing.

## Survey on computer and Internet usage in Montenegro

### Share of employees that are PC users in total number of employees

	Number	Percent	Valid Percent
Up to 10 employees	16	8.6	9.7
From 11 to 25 employees	27	14.6	16.4
From 26 to 50 employees	54	29.2	32.7
More than 51 employees	68	36.8	41.2
Total	165	89.2	100.0
Without answer	20	10.8	
<b>Total</b>	<b>185</b>	<b>100.0</b>	

### 2. Are there conditions for PC education inside the enterprise?

	Number	Percent	Valid Percent
Yes	91	45,5	48,1
No	98	49,0	51,9
Total	189	94,5	100,0
Without answer	11	5,5	
<b>Total</b>	<b>200</b>	<b>100,0</b>	

### 3. On which ways employees learn PC using?

	Number	Percent	Valid Percent
Organization course in enterprise	27	13.5	22.5
Finance course out of enterprise	26	13.0	21.7
Employees are educate automatically	64	32.0	53.3
Other	3	1.5	2.5
Total	120	60.0	100.0
Without answer	80	40.0	
<b>Total</b>	<b>200</b>	<b>100.0</b>	

### 4. The main reasons for lack of conditions in area of PC usage in the enterprise<sup>18</sup>

	Number	Percent	Valid Percent
Lack of necessity	55	56.1	74.3
Lack of motivation and interest	7	7.1	9.5
Not ready for a new skill	6	6.1	8.1
Other	6	6.1	8.1
<b>Total</b>	<b>74</b>	<b>75.5</b>	<b>100.0</b>
Without answer	24	24.5	
<b>Total</b>	<b>98</b>	<b>100.0</b>	

### 5. How many resources enterprise gave for purposes of ICT education in 2004?

	Number	Percent	Valid Percent
Did not invest financial resources	26	14.1	43.3
Less than €500	21	11.4	35.0
From €500 to €1,000	4	2.2	6.7
From €1,000 to €5,000	4	2.2	6.7
More than €5,000	5	2.7	8.3
<b>Total</b>	<b>60</b>	<b>32.4</b>	<b>100.0</b>
Without answer	125	67.6	
<b>Total</b>	<b>185</b>	<b>100.0</b>	

<sup>18</sup> Answered by enterprises that do not have conditions for employees education.

**6. Reason for not -using PC<sup>19</sup>**

	Number	Percent	Valid Percent
Ignorance of work on computer	4	25.0	28.6
Disinterested	1	6.3	7.1
Lack of need	5	31.3	35.7
Lack of free time	1	6.3	7.1
Other	3	18.8	21.4
<b>Total</b>	<b>14</b>	<b>87.5</b>	<b>100.0</b>
Without answer	2	12.5	
<b>Total</b>	<b>16</b>	<b>100.0</b>	

<b>Part IV INTERNET</b>
-------------------------

**1. Type of Internet connection<sup>20</sup>**

	Number	Percent	Valid Percent
Dial-up	106	57.3	62.0
ISDN	41	22.2	24.0
Do not have connection	12	6.5	7.0
Rental connection	11	5.9	6.4
Other	1	0.5	0.6
<b>Total</b>	<b>171</b>	<b>92.4</b>	<b>100.0</b>
Without answer	14	7.6	
<b>Total</b>	<b>185</b>	<b>100.0</b>	

**2. What do you use Internet for?<sup>21</sup>**

<i>Possibility of giving more than one answer</i>	Number	Percent	Valid Percent
E-mail	135	30.5	81.2
Business	124	28.1	75.2
Information	104	23.5	63.0
News	34	7.7	20.6
Education	29	6.6	17.6
Fun/chat	9	2.0	5.5
E-trade	7	1.6	4.2

**3. How often do you use the Internet?**

	Number	Percent	Valid Percent
Daily	121	73.3	74.2
Minimum once per month	32	19.4	19.6
1-3 times per month	8	4.8	4.9
Less than once a month	2	1.2	1.2
<b>Total</b>	<b>163</b>	<b>98.8</b>	<b>100.0</b>
Without answer	2	1.2	
<b>Total</b>	<b>165</b>	<b>100.0</b>	

**4. How many Internet hours employee spend during the day?**

	Number	Percent	Valid Percent
Up to one hour	93	56.4	58.9
Up to two hours	38	23.0	24.1
More than two hours	27	16.4	17.1
<b>Total</b>	<b>158</b>	<b>95.8</b>	<b>100.0</b>
Without answer	7	4.2	
<b>Total</b>	<b>165</b>	<b>100.0</b>	

<sup>19</sup>Question answered by respondents that are not PC users, does not matter whether the enterprise uses computers or not.

<sup>20</sup>Questions 1 and 2 answered by the enterprises that use computers.

<sup>21</sup>Questions from 3 to 9 were answered from enterprises which use computer and Internet.

**5. How many employees in the company use the Internet?**

	Number	Percent	Valid Percent
Up to 5 employees	124	78.0	82.1
From 6 to 10 employees	14	8.8	9.3
From 11 to 15 employees	5	3.1	3.3
15 employees and more	8	5.0	5.3
Total	151	95.0	100.0
Without answer	8	5.0	
<b>Total</b>	<b>159</b>	<b>100.0</b>	

**6. The way which the company uses the Internet**

	Number	Percent	Valid Percent
Monthly	28	17.6	19.3
Special tariff packet	11	6.9	7.6
Per hour	88	55.3	60.7
By the flow	11	6.9	7.6
Do not know	7	4.4	4.8
Total	145	91.2	100.0
Without answer	14	8.8	
<b>Total</b>	<b>159</b>	<b>100.0</b>	

**7. How much is your company paying for the usage of the Internet monthly?**

	Number	Percent	Valid Percent
Up to €25	64	40.3	52.9
From €26 to €50	36	22.6	29.8
From €51 to €100	9	5.7	7.4
More than €100	12	7.5	9.9
Total	121	76.1	100.0
Without answer	38	23.9	
<b>Total</b>	<b>159</b>	<b>100.0</b>	

**8. Reason of non-using the Internet<sup>22</sup>**

	Number	Percent	Valid Percent
Lack of education	5	26.3	29.4
Disinterested	2	10.5	11.8
Lack of need	4	21.1	23.5
Lack of free time	3	15.8	17.6
Other	3	15.8	17.6
Total	17	89.5	100.0
Without answer	2	10.5	
<b>Total</b>	<b>19</b>	<b>100.0</b>	

**Part V WEB SITE**

**1. Does the company have a web site?**

	Number	Percent	Valid Percent
Yes	68	34.0	37.2
No	86	43.0	47.0
No, but they have an intent to create one	29	14.5	15.8
Total	183	91.5	100.0
Without answer	17	8.5	
<b>Total</b>	<b>200</b>	<b>100.0</b>	

<sup>22</sup>Question answered by enterprises that use computers, but not the Internet.

**2. Who was hired for the construction of web sites?<sup>23</sup>**

	Number	Percent	Valid Percent
Enterprise from ICT area	12	17.6	19.4
Employees in enterprise	14	20.6	22.6
Services third party	35	51.5	56.5
Other	1	1.5	1.6
Total	62	91.2	100.0
Without answer	6	8.8	
<b>Total</b>	<b>68</b>	<b>100.0</b>	

**Which ICT enterprise?**

	Number	Percent	Valid Percent
Angel Multimedia	1	8.3	11.1
Baroom	1	8.3	11.1
CFE Pg	1	8.3	11.1
Cikom	1	8.3	11.1
INI Bg	1	8.3	11.1
Tricen	1	8.3	11.1
Trikom	3	25.0	33.3
Total	9	75.0	100.0
Without answer	3	25.0	
<b>Total</b>	<b>12</b>	<b>100.0</b>	

**3. Did you have any use from the web site?**

	Number	Percent	Valid Percent
Yes	54	79.4	90.0
No	6	8.8	10.0
Total	60	88.2	100.0
Without answer	8	11.8	
<b>Total</b>	<b>68</b>	<b>100.0</b>	

**Part VI ICT SOCIETY DEVELOPMENT FROM THE  
ENTERPRISE VIEWPOINT**

**1. How do you rate the Law on public procurement?**

	Number	Percent	Valid Percent
Bringing significant advancement	51	25.5	32.9
Influence on increasing corruption	7	3.5	4.5
No change	70	35.0	45.2
Other	27	13.5	17.4
Total	155	77.5	100.0
Without answer	45	22.5	
<b>Total</b>	<b>200</b>	<b>100.0</b>	

**2. What impact on the total development of Montenegro has the ICT sector?**

	Number	Percent	Valid Percent
No significance	3	1.5	1.7
Less significant	24	12.0	13.5
Significantly	128	64.0	71.9
Highly significant	23	11.5	12.9
Total	178	89.0	100.0
Without answer	22	11.0	
<b>Total</b>	<b>200</b>	<b>100.0</b>	

<sup>23</sup> Questions from 2 to 6 answered by the enterprises that have own web site.

**3. What are the barriers for doing business in your company?**

Barrier in business	Evaluation	
Disloyal concurrence	Don't represent barrier	24,7
	Rather represent barrier	37,0
	Represents barrier	38,3
Frequent changes to regulations	Don't represent barrier	18,5
	Rather represent barrier	52,6
	Represents barrier	28,9
High taxes	Don't represent barrier	8,0
	Rather represent barrier	32,5
	Represents barrier	59,5
Administration limits	Don't represent barrier	15,5
	Rather represent barrier	50,3
	Represents barrier	34,2
Foreign capital	Don't represent barrier	32,9
	Rather represent barrier	33,6
	Represents barrier	33,5
Lack of information	Don't represent barrier	44,6
	Rather represent barrier	37,2
	Represents barrier	18,2
Lack of technical resources and equipment	Don't represent barrier	47,3
	Rather represent barrier	35,6
	Represents barrier	17,1
Corruption	Don't represent barrier	23,0
	Rather represent barrier	37,2
	Represents barrier	39,9
Political situation	Don't represent barrier	21,2
	Rather represent barrier	43,0
	Represents barrier	35,8
Tariff	Don't represent barrier	21,7
	Rather represent barrier	38,2
	Represents barrier	40,1
Export	Don't represent barrier	44,4
	Rather represent barrier	26,7
	Represents barrier	28,9
Impossibility to collect requirements	Don't represent barrier	15,4
	Rather represent barrier	23,7
	Represents barrier	60,9
Low value of business	Don't represent barrier	29,7
	Rather represent barrier	41,9
	Represents barrier	28,4
Strong concurrent	Don't represent barrier	49,0
	Rather represent barrier	42,1
	Represents barrier	9,0
Inflation	Don't represent barrier	52,8
	Rather represent barrier	37,5
	Represents barrier	9,7
Inadequate or exceeded capacity	Don't represent barrier	52,3
	Rather represent barrier	32,6
	Represents barrier	15,2
Level of competencies of employees	Don't represent barrier	55,6
	Rather represent barrier	31,3
	Represents barrier	13,2
Skills of employees	Don't represent barrier	57,0
	Rather represent barrier	33,8
	Represents barrier	9,2
Skills of managements	Don't represent barrier	56,1
	Rather represent barrier	32,4
	Represents barrier	11,5

**4. Who should be in charge of creating a suitable environment for the development of the information society in Montenegro?**

Possibility of giving more than one answer	Number		
Government	148	34.4	74.0
University	45	10.5	22.5
Ministry of education and science	54	12.6	27.0
Business sector	35	8.1	17.5
ICT sector	63	14.7	31.5
NGO sector	14	3.3	7.0
Media	38	8.8	19.0
Business association	33	7.7	16.5

**5. What should be done to improve the usage of computers and Internet in Montenegro (suggestion)?**

	Number	Percent	Valid Percent
Better credit environment	7	3.5	7.1
Education	39	19.5	39.8
Production fragment in Montenegro	3	1.5	3.1
Organization of free courses	7	3.5	7.1
Better Internet connection	4	2.0	4.1
Better standard of inhabitants	6	3.0	6.1
Decrease prices of computers, equipment and Internet services	15	7.5	15.3
Decrease tax and tariff rate	8	4.0	8.2
Nullifying VAT on computers	9	4.5	9.2
Total	98	49.0	100.0
Without answer	102	51.0	
Total	200	100.0	

**SURVEY ON COMPUTER AND INTERNET USAGE IN ICT ENTERPRISES****Part I BASIC QUESTIONS****1. Region**

	Number	Percentage
<b>SOUTH</b>	5	18.5
Bar	1	3.7
Budva	1	3.7
Herceg Novi	1	3.7
Kotor	2	7.4
<b>CENTRAL</b>	17	63.0
Podgorica	16	59.3
Niksic	1	3.7
<b>NORTH</b>	5	18.5
Berane	2	7.4
Bijelo Polje	1	3.7
Pljevlja	2	7.4
<b>Total</b>	<b>27</b>	<b>100.0</b>

**2. Year of establishing**

	Number	Percentage
Up to 1990	1	3.7
From 1991 to 1995	9	33.3
From 1996 to 2000	9	33.3
After 2001	8	29.6
<b>Total</b>	<b>27</b>	<b>100.0</b>

**3. Activity**

	Number	Percentage
Production	8	29.6
Sale	17	63.0
Information system projecting	16	59.3
Servicing	18	66.7
Consulting	13	48.1
Maintaining	17	63.0
Education	10	37.0
Information system development	3	11.1
Software	5	18.5



## Survey on computer and Internet usage in Montenegro

### 4. On what market does the company supplies?

<i>Possibility of giving more than one answer</i>	100.0	159.3
Domestic market	44.2	70.4
Territory of Serbia	23.3	37.0
Ex-Yu territory	7.0	11.1
International market	25.6	40.7

### Supply from international market

<i>Possibility of giving more than one answer</i>	100.0	209.1
USA	21.7	45.5
EU	56.4	118.3
Singapore	13.0	27.3
China	8.7	18.2

### 5. What is the market for the placement of products?

<i>Possibility of giving more than one answer</i>	Number	100.0	114.8
Domestic market	26	83.9	96.3
Territory of Serbia	3	9.7	11.1
Ex-Yu territory	1	3.2	3.7
International market	1	3.2	3.7

### 6. Increasing/decreasing of sold computer configurations in 2003 comparing with 2002<sup>24</sup>

	Number	Percentage	Valid Percentage
10%	1	6.3	25.0
20%	3	18.8	75.0
Total	4	25.0	100.0
Without answer	12	75.0	
<b>Total</b>	<b>16</b>	<b>100.0</b>	

### Increasing/decreasing of sold computer configurations in 2004 comparing with 2002

	Number	Percentage	Valid Percentage
-20%	2	12.5	50.0
0%	1	6.3	25.0
16%	1	6.3	25.0
Total	4	25.0	100.0
Without answer	12	75.0	
<b>Total</b>	<b>16</b>	<b>100.0</b>	

### Increasing/decreasing of sold laser printers in 2003 comparing with 2002

	Number	Percentage	Valid Percentage
0%	1	6.3	25.0
10%	1	6.3	25.0
30%	1	6.3	25.0
50%	1	6.3	25.0
Total	4	25.0	100.0
Without answer	12	75.0	
<b>Total</b>	<b>16</b>	<b>100.0</b>	

### Increasing/decreasing of sold laser printers in 2004 compared with 2002

	Number	Percentage	Valid percentage
-20%	1	6.3	20.0
0%	2	12.5	40.0
20%	1	6.3	20.0
33%	1	6.3	20.0
Total	5	31.3	100.0
Without answer	11	68.8	
<b>Total</b>	<b>16</b>	<b>100.0</b>	

<sup>24</sup> Question answered by those who sell hardware.

*Percentage of increasing/decreasing of sold laser printers compared with 2002*

	Minimum	Maximum	Average
Number of sold laser printers in 2003 compared with 2002 (%)	0	50	22.5
Number of sold laser printers in 2004 compared with 2002 (%)	-20	33	6.6

*Increasing/decreasing of sold other types of printers in 2003 compared with 2002*

	Number	Percentage	Valid percentage
10%	1	6.3	25.0
20%	1	6.3	25.0
50%	1	6.3	25.0
70%	1	6.3	25.0
Total	4	25.0	100.0
Without answer	12	75.0	
<b>Total</b>	<b>16</b>	<b>100.0</b>	

*Increasing/decreasing of sold other types of printers in 2004 compared with 2002*

	Number	Percentage	Valid percentage
-20%	1	6.3	20.0
20%	2	12.5	40.0
33%	1	6.3	20.0
60%	1	6.3	20.0
Total	5	31.3	100.0
Without answer	11	68.8	
<b>Total</b>	<b>16</b>	<b>100.0</b>	

*Increasing/decreasing of sold monitors without configuration in 2003 compared with 2002*

	Number	Percentage	Valid percentage
0%	2	12.5	40.0
10%	2	12.5	40.0
39%	1	6.3	20.0
Total	5	31.3	100.0
Without answer	11	68.8	
<b>Total</b>	<b>16</b>	<b>100.0</b>	

*Increasing/decreasing of sold monitors without configuration in 2004 compared with 2002*

	Number	Percentage	Valid percentage
-20%	1	6.3	20.0
0%	1	6.3	20.0
10%	1	6.3	20.0
34%	1	6.3	20.0
100%	1	6.3	20.0
Total	5	31.3	100.0
Without answer	11	68.8	
<b>Total</b>	<b>16</b>	<b>100.0</b>	

*Increasing/decreasing of sold modems in 2003 compared with 2002*

	Number	Percentage	Valid percentage
10%	3	18.8	75.0
100%	1	6.3	25.0
Total	4	25.0	100.0
Without answer	12	75.0	
<b>Total</b>	<b>16</b>	<b>100.0</b>	

*Increasing/decreasing of sold modems in 2004 compared with 2002*

	Number	Percentage	Valid percentage
-20%	1	6.3	25.0
10%	2	12.5	50.0
50%	1	6.3	25.0
Total	4	25.0	100.0
Without answer	12	75.0	
<b>Total</b>	<b>16</b>	<b>100.0</b>	

**Part II EMPLOYEES**

**1. Level of education of the executive director**

	Number	Percentage	Valid percentage
Faculty	18	66.7	75.0
Higher education	3	11.1	12.5
High school education	3	11.1	12.5
Total	24	88.9	100.0
Without answer	3	11.1	
<b>Total</b>	<b>27</b>	<b>100.0</b>	

**2. Level of education of the employees**

<i>Possibility of giving more than one answer</i>	Number	Percentage	Valid percentage
PhD	0	0.0	0.0
MSc	1	1.7	3.7
Faculty	21	36.2	77.8
Higher education	14	24.1	51.9
High school education	22	37.9	81.5

**Share of employees with faculty education in total number of employees**

	Number	Percentage	Valid percentage
Up to 10 employees	3	11.1	15.8
From 11 to 25 employees	1	3.7	5.3
From 26 to 50 employees	11	40.7	57.9
More than 51 employee	4	14.8	21.1
Total	19	70.4	100.0
Without answer	8	29.6	
<b>Total</b>	<b>27</b>	<b>100.0</b>	

**3. Has company certified employees?**

	Number	Percentage	Valid percentage
Up to 2 employees	7	63.6	63.6
From 2 to 5 employees	2	18.2	18.2
More than 5 employees	2	18.2	18.2
<b>Total</b>	<b>11</b>	<b>100.0</b>	<b>100.0</b>

**4. Has the company up to now invested in the education of the employees?**

	Number	Percentage	Valid percentage
Yes	23	85.2	88.5
No	3	11.1	11.5
Total	26	96.3	100.0
Without answer	1	3.7	
<b>Total</b>	<b>27</b>	<b>100.0</b>	

**5. How much has the company invested in education in 2004?<sup>25</sup>**

	Number	Percentage	Valid percentage
Up to €1,000	6	26.1	40.0
From €1,000 to €5,000	3	13.0	20.0
From €5,000 to €10,000	2	8.7	13.3
More than €10,000	4	17.4	26.7
Total	15	65.2	100.0
Without answer	8	34.8	
<b>Total</b>	<b>23</b>	<b>100.0</b>	

<sup>25</sup> Answered by those who invested in employee's education.

**6. Is there a plan of employee education?**

	Number	Percentage	Valid percentage
Yes	17	63.0	73.9
No	6	22.2	26.1
Total	23	85.2	100.0
Without answer	4	14.8	
<b>Total</b>	<b>27</b>	<b>100.0</b>	

**7. How much will be invested in the education of the employees in the year 2005?**

	Number	Percentage	Valid percentage
Up to €1,000	3	11.1	21.4
From €1,000 to €5,000	4	14.8	28.6
From €5,000 to €10,000	1	3.7	7.1
Over €10,000	6	22.2	42.9
Total	14	51.9	100.0
Without answer	13	48.1	
<b>Total</b>	<b>27</b>	<b>100.0</b>	

<b>Part III INTERNET</b>
--------------------------

**1. Speed and type of Internet connection**

	Number	Percentage	Valid percentage
Dial-up	4	14.8	16.7
ISDN	14	51.9	58.3
ADSL	4	14.8	16.7
Other	2	7.4	8.3
Total	24	88.9	100.0
Without answer	3	11.1	
<b>Total</b>	<b>27</b>	<b>100.0</b>	

**2. Internet paying type**

	Number	Percentage	Valid percentage
Monthly	16	59.3	59.3
Special tariff packages	5	18.5	18.5
Per hour	6	22.2	22.2
<b>Total</b>	<b>27</b>	<b>100.0</b>	<b>100.0</b>

**3. Does the company have a web site?**

	Number	Percentage	Valid percentage
Yes	21	77.8	77.8
No	6	22.2	22.2
<b>Total</b>	<b>27</b>	<b>100.0</b>	<b>100.0</b>

**4. Who was hired for the construction of the web site?<sup>26</sup>**

	Number	Percentage	Valid percentage
ICT enterprise	4	19.0	19.0
Employees	15	71.4	71.4
Third person services	1	4.8	4.8
Other	1	4.8	4.8
<b>Total</b>	<b>21</b>	<b>100.0</b>	<b>100.0</b>

**5. Have you made any cooperation with an international ICT vendor?**

	Number	Percentage	Valid percentage
Yes	13	48.1	48.1
No	14	51.9	51.9
<b>Total</b>	<b>27</b>	<b>100.0</b>	<b>100.0</b>

<sup>26</sup> Answered by those who have a web site.

*Which one<sup>27</sup>?*

<i>Possibility of giving more than one answer</i>	Number	100.0	269.2
Microsoft	4	11.4	30.8
Oracle	3	8.6	23.1
HP	2	5.7	15.4
Siemens	2	5.7	15.4
Cisco	2	5.7	15.4
Lexmark	2	5.7	15.4
Dell	1	2.9	7.7
Microstar	1	2.9	7.7
MSI	1	2.9	7.7
Samsung	1	2.9	7.7
Intel	1	2.9	7.7
Quest	1	2.9	7.7
Sap	1	2.9	7.7
Canon	1	2.9	7.7
Maxtor	1	2.9	7.7
Micros-Fidelio	1	2.9	7.7
IBM	1	2.9	7.7
Symantec	1	2.9	7.7
Toshiba	1	2.9	7.7
Veritas	1	2.9	7.7
Allied Telesyn	1	2.9	7.7
Riverstone	1	2.9	7.7
Brand Rex	1	2.9	7.7
Allot Communications	1	2.9	7.7
Syn Micro Systems	1	2.9	7.7

**Part IV INFORMATION SOCIETY DEVELOPMENT FROM THE ICT ENTERPRISE VIEWPOINT**

*1. Barriers for conducting the business?*

	No barrier	Partly	Barrier
Disloyal competition	23.1	53.8	23.1
Regulatory changes	25.0	54.2	20.8
High taxes	7.7	42.3	50.0
Administrative barriers	12.5	58.3	29.2
Lack of foreign capital	25.0	41.7	33.3
Lack of information	58.3	37.5	4.2
Lack of technical equipment	65.2	34.8	
Barriers in export	65.0	20.0	15.0
Corruption	22.7	50.0	27.3
Political situation	33.3	58.3	8.3
High custom rates	57.9	21.1	21.1
Inflation	70.6	29.4	
Lack of capacity	73.9	21.7	4.3
Lack of employee's expertise	82.6	8.7	8.7
Employee's skills	82.6	8.7	8.7
Managerial skills	60.9	30.4	8.7

*2. Is the company a member of a business association?*

	Number	Percentage	Valid percentage
Yes	11	40.7	42.3
No	13	48.1	50.0
No, but have intention	2	7.4	7.7
Total	26	96.3	100.0
Without answer	1	3.7	
<b>Total</b>	<b>27</b>	<b>100.0</b>	

<sup>27</sup> Answered by those who have cooperation with some global ICT vendor.

**3. How do you rate the Law on public procurement?**

	Number	Percent	Valid Percent
Bringing significant advancement	7	25.9	25.8
Influence on increasing corruption	6	22.2	22.2
No change	9	33.3	33.3
Other	5	18.5	18.5
<b>Total</b>	<b>27</b>	<b>100.0</b>	<b>100.0</b>

**4. Who should be in charge of creating a suitable environment for the development of the information society in Montenegro?**

<i>Possibility of giving more than one answer</i>	Number	100.0	248.1
Government	22.0	32.8	81.5
ICT sector	10.0	14.9	37.0
Media	10.0	14.9	37.0
Ministry of education and science	8.0	11.9	29.6
Business association	7.0	10.4	25.9
University	5.0	7.5	18.5
Private sector	3.0	4.5	11.1
NGO sector	2.0	3.0	7.4

**5. What should be done to improve the usage of computers and Internet in Montenegro (suggestion)?**

<i>Possibility of giving more than one answer</i>	Number	100.0	118.5
Education	11	34.3	40.7
Nullifying VAT on computers	9	28.1	33.3
Better standard	2	6.2	7.4
ICT sector stimulation	2	6.2	7.4
Credits	2	6.2	7.4
E-commerce	2	6.2	7.4
Changes in Law on public procurement	1	3.1	3.7
Increasing of ICT culture	1	3.1	3.7
E-government	1	3.1	3.7
Free WLAN	1	3.1	3.7