USAGE OF INFORMATION AND COMMUNICATION TECHNOLOGIES IN THE REPUBLIC OF SERBIA, 2018

HOUSEHOLDS/INDIVIDUALS
ENTERPRISES

Belgrade, 2018

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INTRODUCTION

Modern society has become "information society" with the development and usage of information and communication technologies, which, as its main characteristic, plays the most important part in production, the economy and all other spheres in the life of individuals and the society as a whole.

Aware of the significance of those technologies, the Statistical Office of the Republic of Serbia carried out in 2004 a pilot survey on the usage of information and communication technologies in organisations dealing with financial and insurance activities. This undertaking was primarily meant to test and prepare the methodologies and instruments for the implementation of similar regular surveys related to households and the economy.

In the previous twelve years, the Statistical Office of the Republic of Serbia conducted two surveys on the usage of information and communication technologies. The first one referred to households and individuals, and the second included also enteprises.

Both surveys were carried out on the territory of the Republic of Serbia also in 2018 based on EUROSTAT methodology. Data for the Republic of Serbia exclude those for AP Kosovo and Metohija.

As for households and individuals, the three months preceeding the telephone interview were taken to be the reference period, which was, for most of the questions asked to enterprises, January 2018, while selected ones referred to the entire 2017.

The survey for households was carried out on a two-stage sample, which was stratified according to the criterion on urban characteristics. The sample was allocated to the territories of Central Serbia (excluding Belgrade), AP Vojvodina and Belgrade, proportionally to the number of households. It included 2800 households and 2800 individuals. The interview was done both by telephone and indirectly (answers given by another person other than the absent one).

The survey for enterprises was carried out on a sample stratified by size classes and activities, through telephone interview. The sample covered 1781 enterprises

The Statistical Office of the Republic of Serbia is hopeful that this publication will provide the users enough information on the current situation in information and communication technologies, which will serve as the basis for further development.

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2nd part
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USAGE OF INFORMATION AND COMMUNICATION TECHNOLOGIES IN THE REPUBLIC OF SERBIA, 2018

HOUSEHOLDS/INDIVIDUALS

1.1. METHODOLOGY

Survey period	• The survey was carried out from 12 March 2018 to 28 March 2018
Type of survey	• Telephone interview
Sample size	• 2800 households • 2800 individuals
Target population	• For households: the target population is made of all households with at least one member aged between 16 and 74 • For individuals: the target population is made of all individuals aged between 16 and 74
Type of sample	• Two-stage, stratified sample
Geographic scope	• Territory of the Republic of Serbia (without AP Kosovo and Metohija)

1.2. SAMPLE

The survey on ICT usage in households was conducted on a representative sample of 2800 households on the territory of the Republic of Serbia. The response rate was 94.7% (2652 households).

Households

Sample (households)	Incme			Region			Type of household		Total
	Up to 300 euros	300 - 600 euros	More than 600 euros	Central Serbia	Vojvodina	Belgrade	Urban	Other	
Number	959	897	530	1212	742	698	1715	937	2652
%	40.2	37.6	22.2	45.7	28.0	26.3	64.7	35.3	100

The same sample was used both for households and individuals aged between 16 and 74 living on the territory of the Republic of Serbia. The sample included 2800 individuals.The response rate was 94.7% (2652 persons).

Individuals

Sample (individuals)	Age						Sex		Educational level			Employment situation				Total
	16 - 24	25 - 34	35 - 44	45 - 54	55 - 64	65 - 74	Men	Women	Lower than secondary	Secondary	Tertiary	Employed	Unemployed	Student	Other	
Number	181	266	421	562	583	639	1112	1540	340	1400	912	1128	454	70	1000	2652
%	6.8	10.0	15.9	21.2	22.0	24.1	41.9	58.1	12.8	52.8	34.4	42.5	17.1	2.6	37.7	100

1.3. MAIN FINDINGS

1.3.1. Devices available in households

Households were offered to give more than one answers to the question relative to the devices available in households. The survey shows that 99.1% of households have a TV set.

> 93.0% of households have a mobile phone

There are 47.6% of households have a laptop, which is an increase of 3.9% and 8.4% in relation to 2017 and 2016, respectively

Chart 1.1. Devices available in households
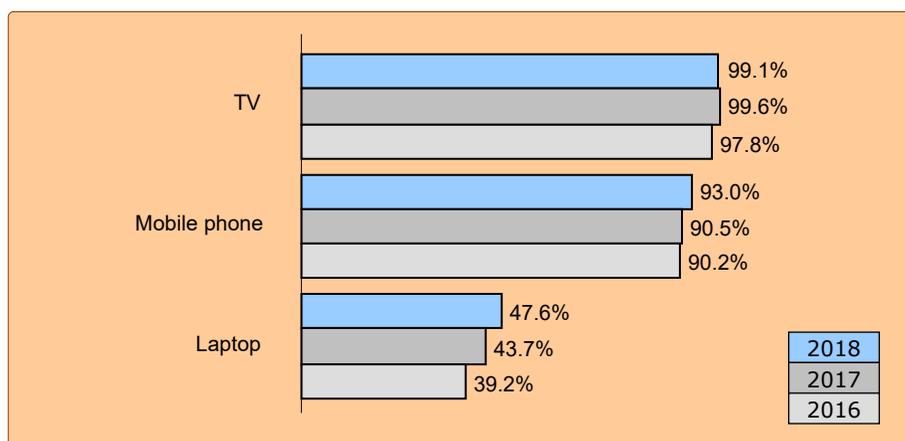
1.3.2. Computers in households

The main findings of the survey show that 72.1% of households in the Republic of Serbia have a computer, which is an increase of 4% and 6.3% in relation to 2017 and 2016, respectively. The percentage of computers in households varies as to the territory: in Belgrade it amounts to 81.1%, in Vojvodina 69.3%, and in Central Serbia 69.0%.

> 72.1% of households have a computer

Chart 1.2. Computers in households
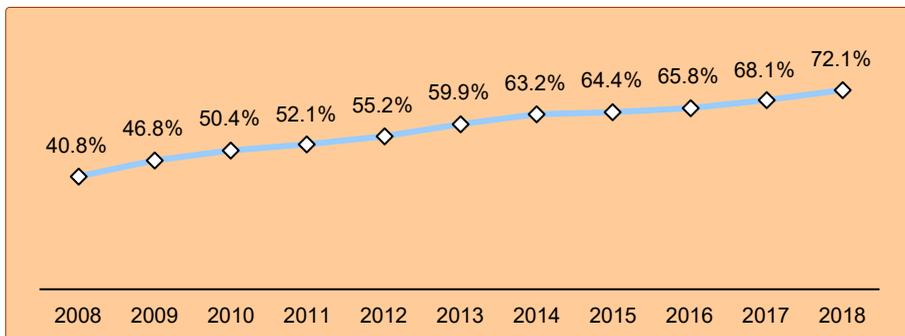
The differences are also visible when comparing the availability of computers in urban and other areas of Serbia: 78.2% versus 61.8%. In relation to 2017, this gap has slightly increased, which is backed by growth rates of computer availability in urban and other parts of Serbia. The growth rate in the urban parts of Serbia is 4.7%, and in the other areas it amounts to 1.1%, when compared to 2017.

Chart 1.3. Percentage of households having a computer, by type of settlements
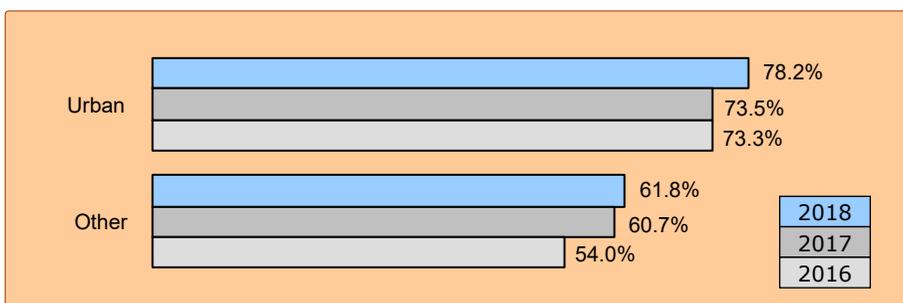
However, the structure of households by monthly income is expressive of the greatest gap as to the availability of computers in households. Computers are mostly available in households with a monthly income of more than 600 euros (87.9%) then in households with an income up to 300 euros (54.8%).

When looking at the data for 2017, growth rates in certain income classes for 2018 indicate that the above mentioned gap decreased, when compared to the previous year. As for households with an income of more than 600 euros the decrease was 7.2%, while for households with an income of 300 – 600 euros an increase of 2.3% was recorded, in relation to 2017. The growth rate for households with an income of less than 300 euros amounts to 5.1%.

> 54.8% of households with an income up to 300 euros have a computer

Chart 1.4. Percentage of households having a computer, by income level
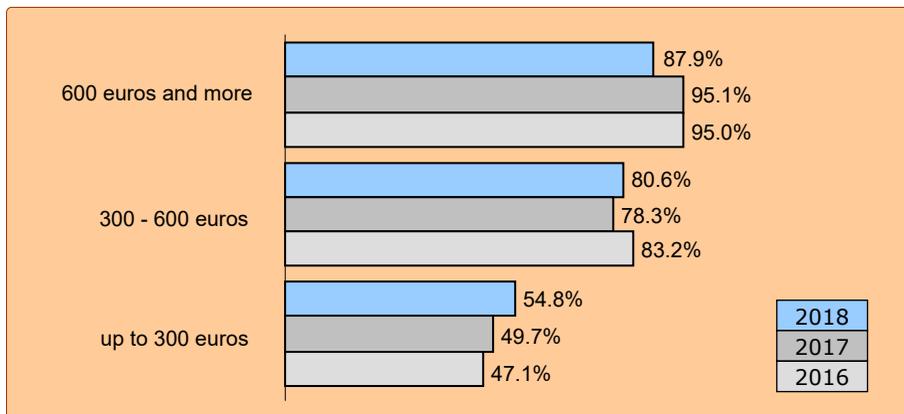
1.3.3. Internet in households

In the Republic of Serbia 72.9% of households have an Internet connection, which is an increase of 4.9% and 8.2%, when compared to 2017 and 2016, respectively.

72.9% of households have an Internet connection

Chart 1.5. Does the household have access to the Internet at home?
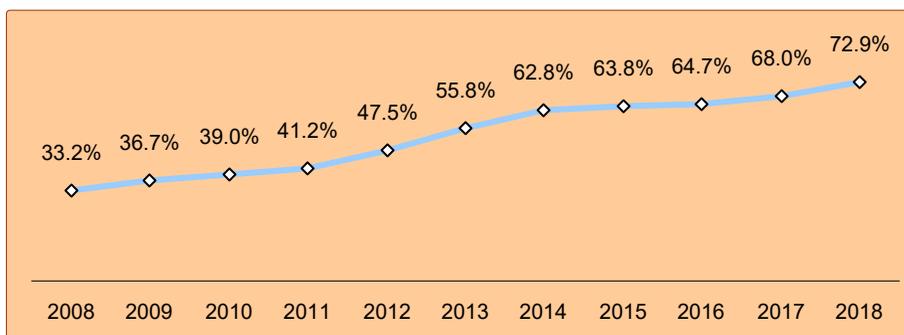
The highest percentage of Internet connection availability was observed in Belgrade (82.2%), in Vojvodina (70.7%), and in Central Serbia (69.3%).

Chart 1.6. Households having an Internet connection, by type of settlements
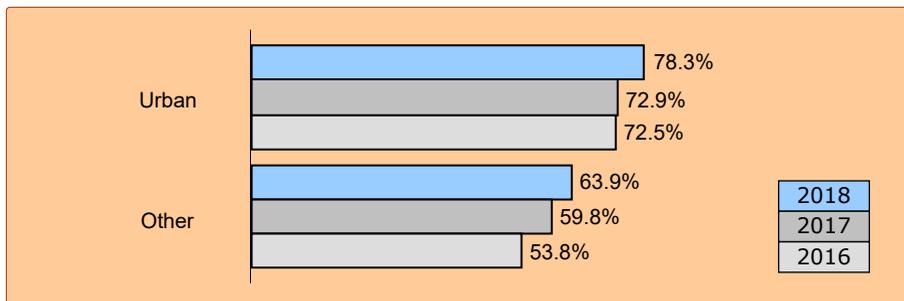
There are also considerable differences as to the percentage of Internet connection in urban and other parts of Serbia: 78.3% versus 63.9%. When compared to 2017, the growth rate in the urban part of Serbia is 5.4% and in the rural part 4.1%.

In the same way as in computer availability in households, a large gap as regard the Internet connection appears when observing the structure of households according to their monthly income level. The internet connection is mostly used by households which monthly income exceeds 600 euros (87.8%), while only 56.8% of households with an income under 300 euros are connected to the Internet.

> 56.8% of households with an income up to 300 euros have an Internet connection

Chart 1.7. Households having an Internet connection, by income level
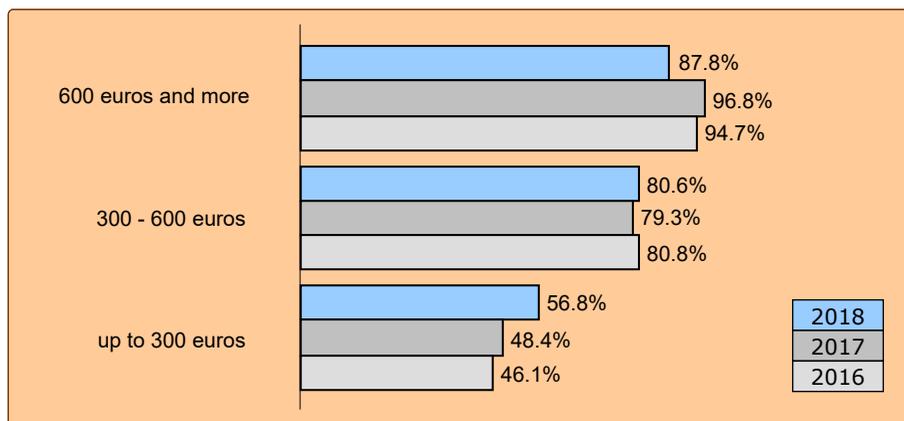
As regard the reasons for not having an Internet connection at home, 76.5% of households said not needing the Internet, 18.6% indicated that equipment costs were too high, while 20.7% of households mentioned the lack of skills.

Chart 1.8. Reason of households for not having an Internet connection at home

Reason	Percentage
Don't need the Internet	76.5%
Lack of skills	20.7%
Equipment too expensive	18.6%
Access costs too high	16.0%
Have access to the Internet elsewhere	9.7%
Broadband Internet is not available	3.6%
Privacy or security concerns	0.2%
None of the above, other reasons	4.4%
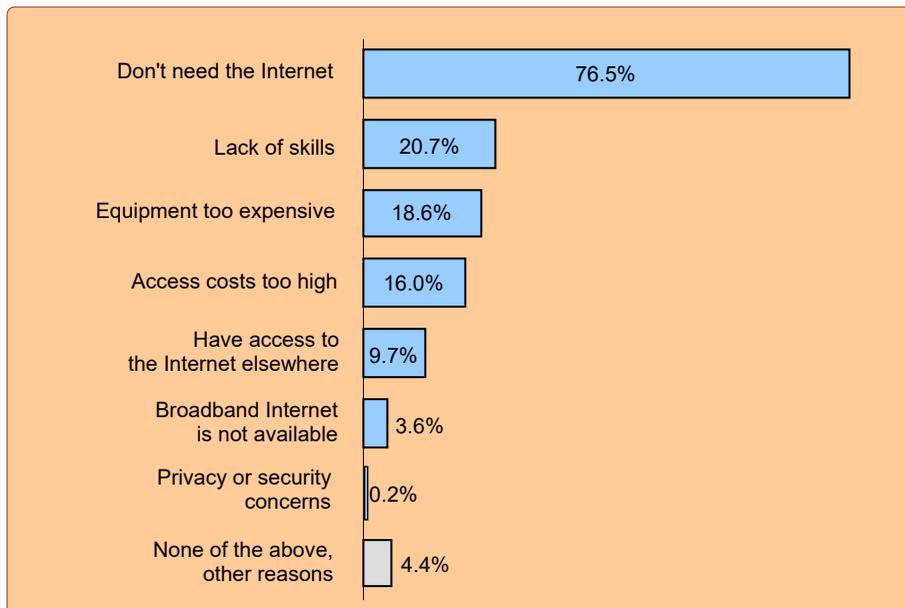
Households were offered several answers to the question relative to the type of connection used to access the Internet. The obtained results show that of the total number of households having an Internet connection, 51.2% have DSL (ADSL), 42.5% cable Internet, and 67.5% use mobile phone via 3G network.

> 51.2% of households having an Internet connection use DSL (ADSL)

The results of the survey indicate that 0.4% of households have a *dial-up* connection. This is principally the result of an increased use of broadband connections

Chart 1.9. Type of Internet connection

Mobile phone (Tablet) (via 3G network)	67.5% / 53.6% / 46.6%
DSL (ADSL)	51.2% / 48.7% / 45.5%
Cable Internet	42.5% / 42.8% / 45.3%
Mobile phone (via GPRS-a)	4.5% / 16.0% / 11.5%

Legend: 2018 / 2017 / 2016
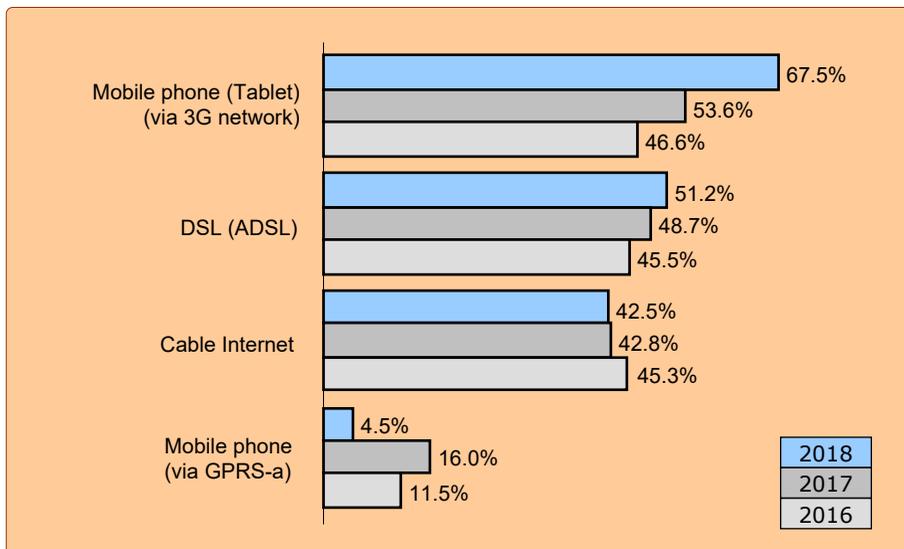
72.5% of households in Serbia have a broadband Internet connection

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The broadband Internet connection, besides providing faster access, changes the entire way of using the Internet since it allows quicker download of information compared to the classic dial-up modem connection. Accordingly, from 2005 the percentage of households having this type of Internet connection is taken to be one of the main indicators of ICT development in the European Union. In Serbia, 72.5% of households have a broadband connection, which is an increase of 10.6% and 14.7% in relation to 2017 and 2016, respectively. This type of Internet connection is most used in Belgrade (82.1%), in Vojvodina (70.3%), and the least in Central Serbia (68.8%).

Chart 1.10. Broadband Internet connection in households

2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
22.9%	27.6%	31.0%	38.0%	43.4%	55.1%	56.0%	57.8%	61.9%	72.5%
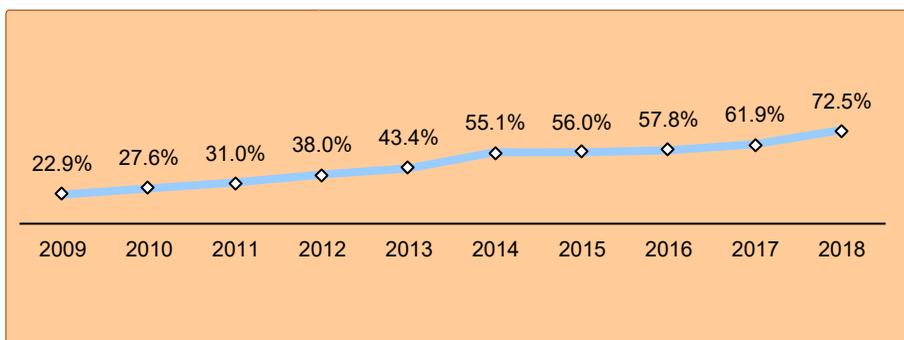
Broadband Internet connection is mostly available in households with a monthly income exceeding 600 euros (87.6%), while the percentage of those with an income under 300 euros is 56.7%.

Large differences are also observed when comparing the use of this type of Internet connection in rural and other parts of Serbia: 77.9% versus 63.5%

Chart 1.11. Broadband Internet connection in households, by territory
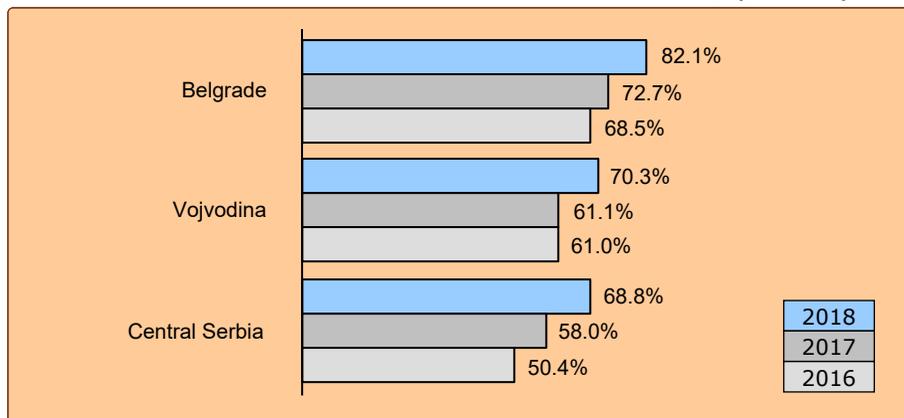
1.3.4. Individuals: use of computers

In the Republic of Serbia, 70.7% of individuals used a computer in the last three months, 2.0% more than three months ago, and 4.5% more than one year ago. There are even 22.8% of individuals who have never used a computer. The number of computer users increased by 3.3%, 4.5% and 5.9% in relation to 2017, 2016 and 2015, respectively.

The number of computer users increased by 3.3%, compared with 2017

When compared with 2017, the number of persons who have used a computer in the last three months increased by rather 100 000.

More than 3 750 000 persons have used a computer in the last three months

The percentage of computer users (in the last three months), according to educational level:
- 93.0% of persons with tertiary educational level;
- 80.5% of persons with secondary educational level;
- 41.1% of persons with lower than secondary educational level.

Chart 1.12. When did you last use a computer?

Year	Within the last 3 months	More than 3 months ago (less than 1 year)	More than 1 year ago	Never used it
2018	70.7%	4.5%	2.0%	22.8%
2017	67.7%	4.9%	1.3%	26.1%
2016	67.1%	4.7%	0.9%	27.2%
2015	65.8%	3.3%	2.2%	28.7%
2014	62.5%	6.0%	1.8%	29.7%

Legend:
- Within the last 3 months
- More than 3 months ago (less than 1 year)
- More than 1 year ago
- Never used it

Chart 1.13. Percentage of computer users (in the last three months), by educational level

Educational level	2018	2017	2016
Tertiary education	93.0%	88.4%	87.1%
Secondary education	80.5%	77.5%	77.6%
Lower than secondary	41.1%	37.7%	37.6%
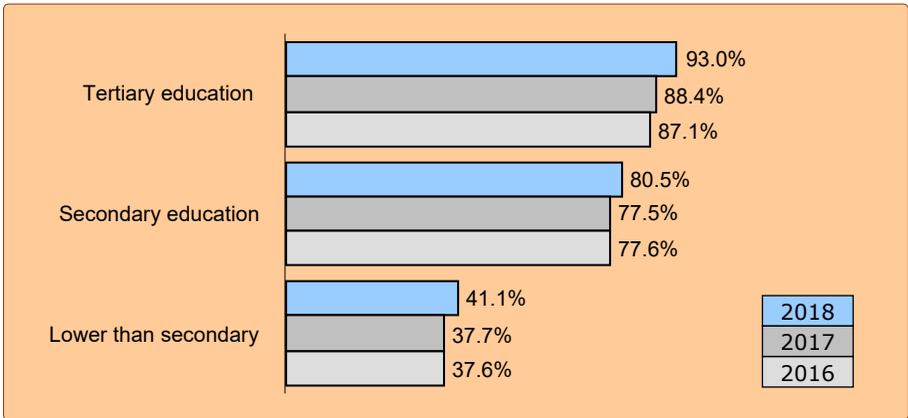
Among computer users, 59.7% have secondary educational level, 17.7% lower than secondary educational level, and 22.6% tertiary educational level

Chart 1.14. Educational structure of computer users
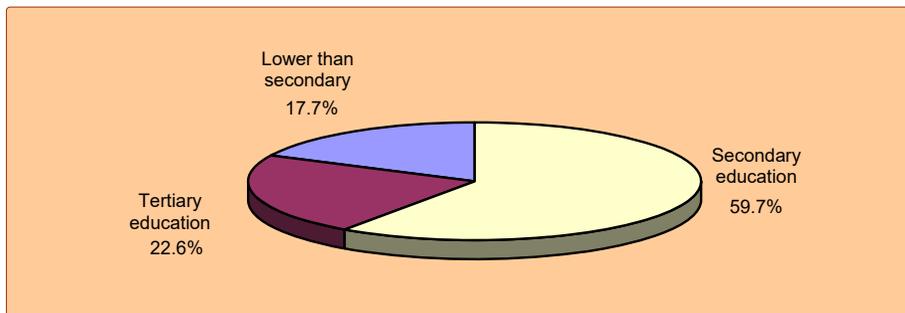
Lower than secondary
17.7%

Secondary education
59.7%

Tertiary education
22.6%

Percentage of computer users (in the last three months), by employment situation:

- 100.0% of students;
- 86.8% of employees;
- 74.6% of unemployed persons;
- 44.0% of other persons (retired, serving compulsory military service...).

Chart 1.15. Percentage of computer users (in the last three months), by employment situation

Student
100.0%
98.1%
100.0%

Employee
86.8%
86.6%
89.7%

Unemployed
74.6%
64.9%
65.7%

Other
44.0%
34.3%
34.4%

2018
2017
2016
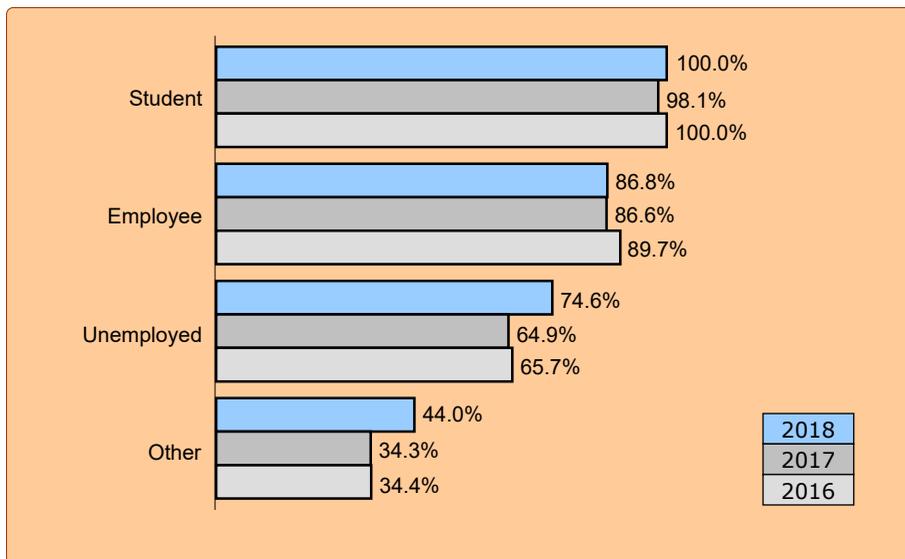
The analysis of the respondents by sex indicates that in the last three months 74.5% of men and 67.0% of women have used a computer.

Chart 1.16. Use of computers (in the last three months), by sex and age
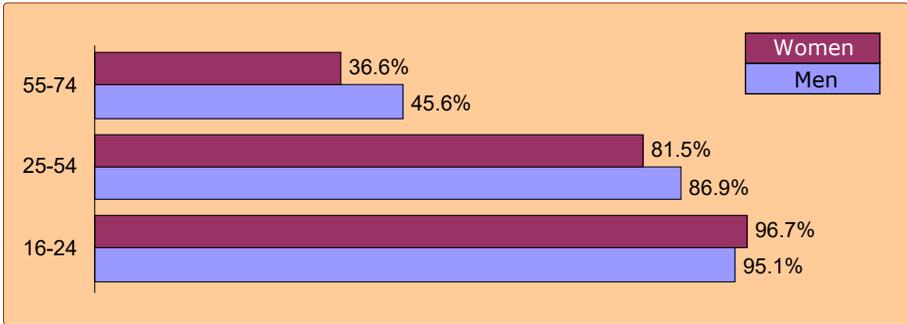
When asked how often, on average, the respondents have used a computer in the last three months, 82.8% said having used a computer every day or almost every day, 12.4% at least once a week, 3.2% at least once a month, and 1.5% less than once a month

> More than 3 108 000 persons use a computer every day or almost every day

When compared with 2017, the number of persons who used a computer every day or almost every day decreased by some 10 000

Chart 1.17. How often, on average, have you used a computer in the last three months?
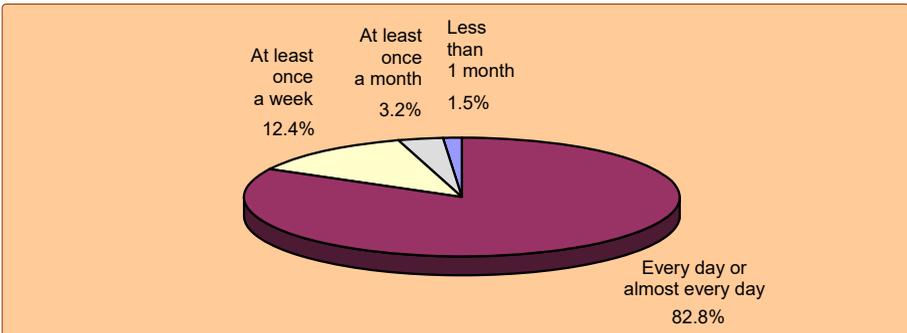
1.3.5. Individuals: use of mobile phones

The survey indicates that 92.6% of persons use a mobile phone, while for 2017 the percentage is also 92.6%.

More than 4 910 000 persons use a mobile phone

Chart 1.18. Use of mobile phones

81.0% 82.3% 82.7% 85.3% 85.8% 87.0% 90.6% 91.4% 91.8% 92.6% 92.6%

2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018

Chart 1.19. Use of mobile phones, by sex and age

Age	Women	Men
55-74	81.7%	85.0%
25-54	98.5%	96.5%
16-24	97.0%	98.7%
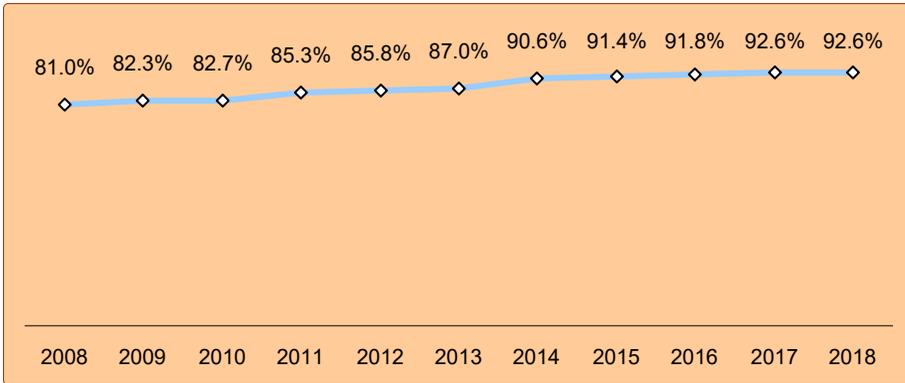
1.3.6. Individuals: use of the Internet

In the Republic of Serbia, 73.4% of persons have used the Internet in the last three months, 1.2% of respondents used the Internet more than 3 months ago, and 1.2% more than one year ago. There were 24.2% of respondents that had never used the Internet.

The number of Internet users increased by 1.4%, 4.9% and 6.4% in relation with 2017, 2016, 2015, respectively.

> The number of Internet users increased by 1.4%, compared with 2017

Chart 1.20. When did you last use the Internet?
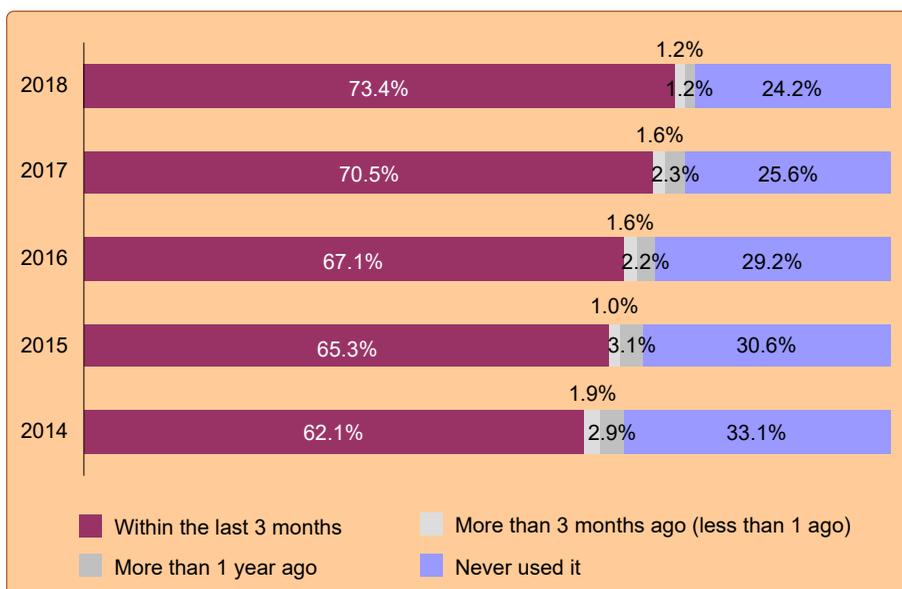
> More than 3 890 000 persons have used the Internet in the last three months

Compared with 2017, the number of persons who have used the Internet in the last three months increased by rather 140 000.

The percentage of Internet users (in the last three months), by educational level:

- 90.8% of persons with tertiary educational level;
- 83.0% of persons with secondary educational level;
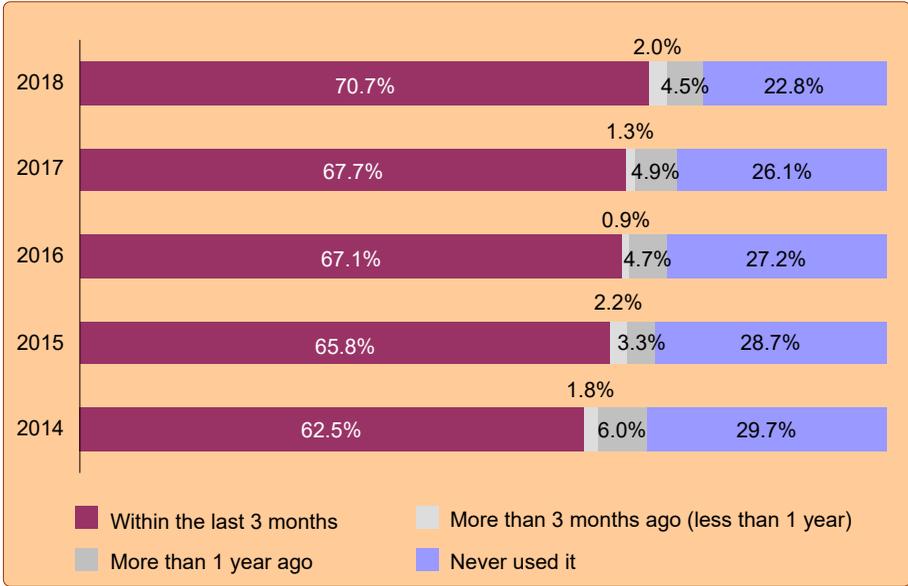- 46.9% of persons with lower than secondary educational level.

**Chart 1.21. Percentage of Internet users (in the last three months),
by educational level**
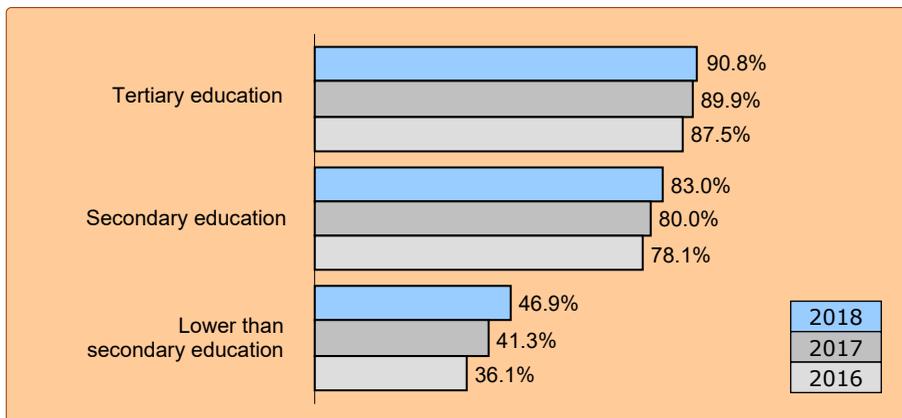
Among Internet users, 59.3% attained secondary educational level, 19.4% of users attained lower than secondary educational level, and 21.3% tertiary educational level.

Chart 1.22. Educational structure of Internet users
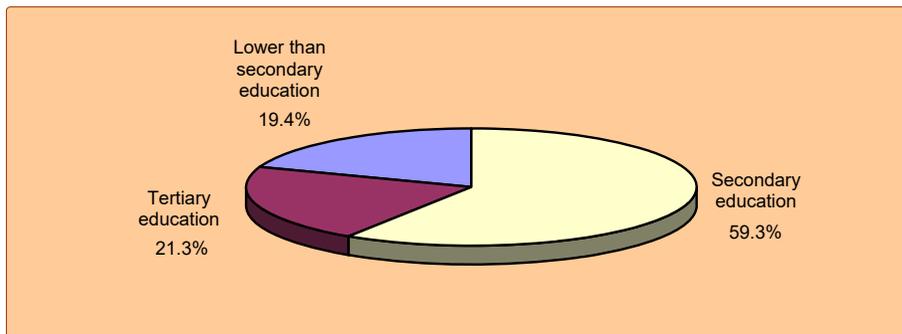
Percentage of Internet users (in the last three months), by employment situation:

- 100.0% of students;
- 89.7% of employees;
- 79.0% of unemployed persons;
- 45.5% of other (retired, serving compulsory military service...).

**Chart 1.23. Percentage of Internet users (in the last three months),
by employment situation**
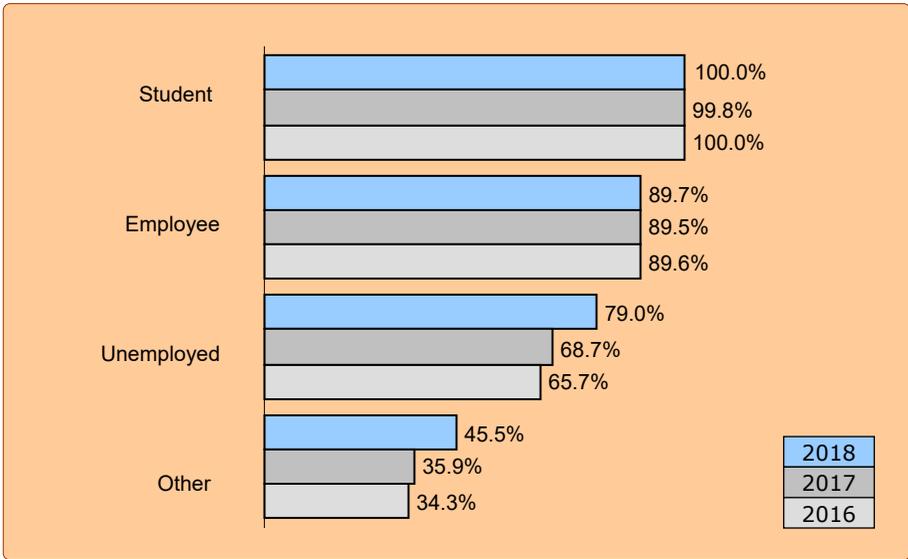
When asked how often on average they have used the Internet in the last three months, 92.2% of respondents said having used it every day or almost every day.

More than 3 590 000 persons use the Internet every day or almost every day

Compared to 2017, the number of persons who used the Internet every day or almost every day increased by some 290 000.

**Chart 1.24. How often, on average, have you used the Internet
in the last three months?**

Chart 1.25. Internet use (in the last three months), by sex and age
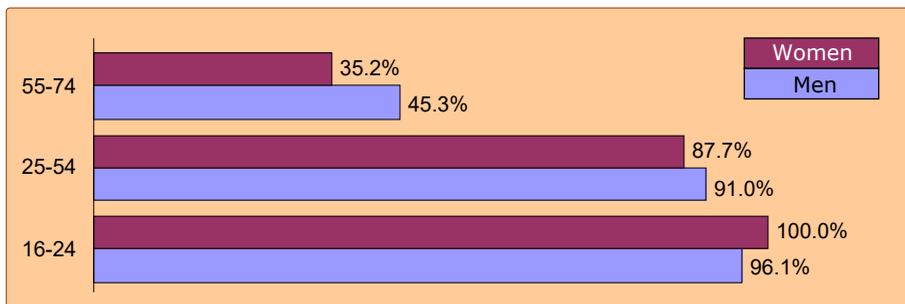
The analysis of respondents by sex indicates that 76.8% of men and 70.1% of women have used the Internet in the last three months.

In the last three months the respondents have used the Internet mostly for finding information about goods or services (76.8%), as well as for participating in social networks such as Facebook and Twitter (70.3%).

Chart 1.26. Type of Internet use (for private purposes) in the last three months
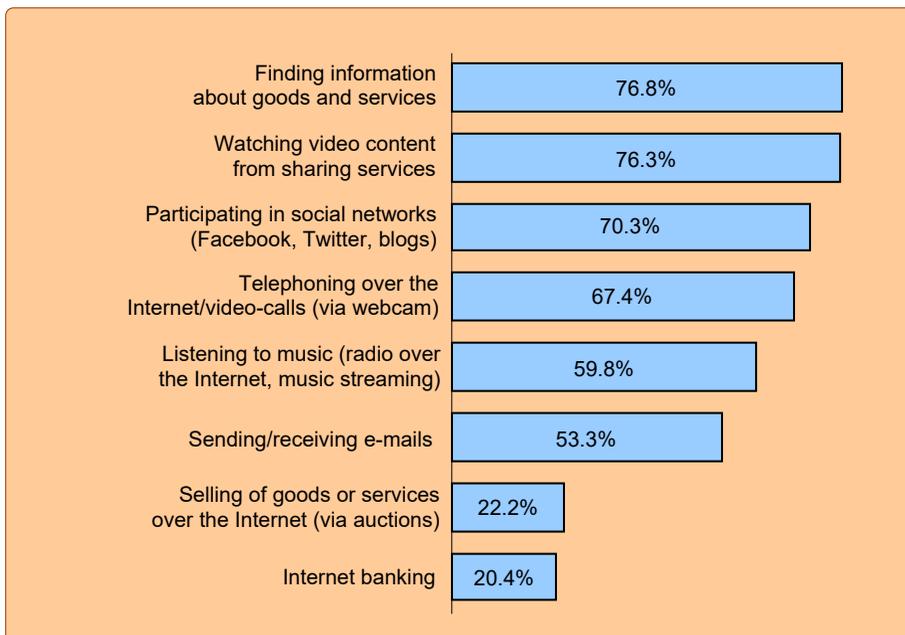
96.4% of Internet population age 16 to 24 have an account on social networks
(*Facebook*, *Twitter*)

Chart 1.27. Do you use any of the following mobile devices to access the Internet away from home or place of work?

Device	Percentage
Mobile phone or smartphone	77.6%
Laptop	6.5%
Tablet	5.5%
Other devices (e.g. media or games player, e-book reader, smart watch)	0.6%
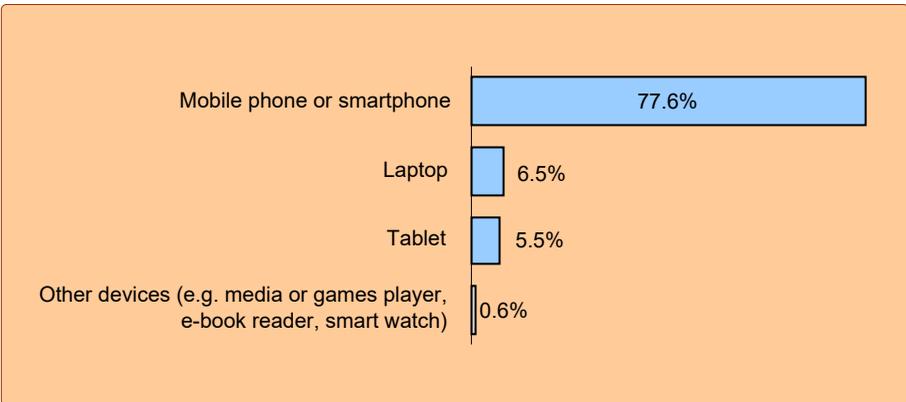
1.3.7. E-government

The survey indicates that 37.3% of Internet users use the Internet instead of personal contacts or visits to public authorities.

> More than 1 500 000 of persons use public authorities' electronic services

Chart 1.28. For which of the following public authorities' services did you use the Internet?

Service	Percentage
Obtaining information from websites of public authorities	35.5%
Downloading	21.7%
Submitting completed forms	15.9%

The survey indicates that 35.5% of Internet users used public authorities' services over the Internet for obtaining information from public authorities' websites, and 21.7% to download official forms.

Chart 1.29. Reasons for not having submitted completed forms to public authorities over the Internet

Reason	Percentage
No need to submit completed forms	78.7%
Lack of skills	10.5%
Other reasons	7.0%
Another person did it on my behalf	2.7%
Concerns about security and protection of personal data	2.6%
There were no such services available on-line	0.4%
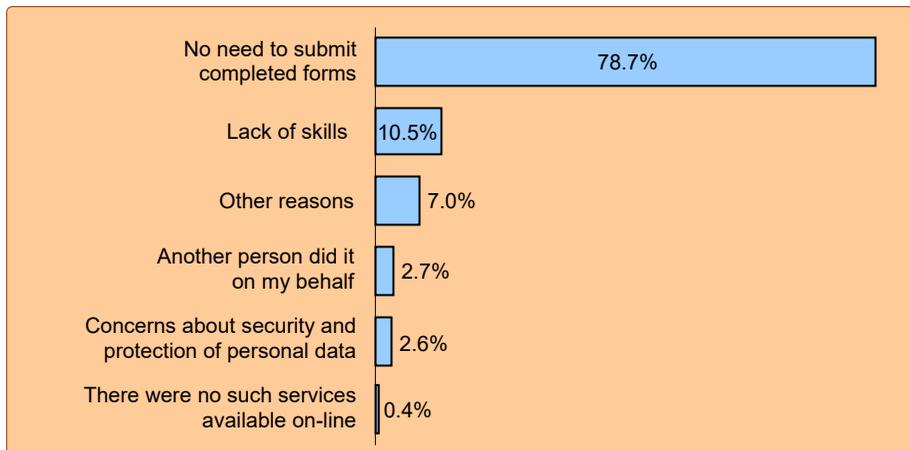
1.3.8. E-commerce

As regard the period when Internet users have bought/ordered goods or services via the Internet, 30.9% of users have bought/ordered goods/services in the last three months, 14.6% did it more than three months ago, and 9.1% more than a year ago.

45.4% of Internet users have never bought/ordered goods or services over the Internet.

> More than 1 800 000 persons have bought goods/services over the Internet in the last three months

Chart 1.30. When did you last (for private purposes) buy/order goods or services over the Internet?
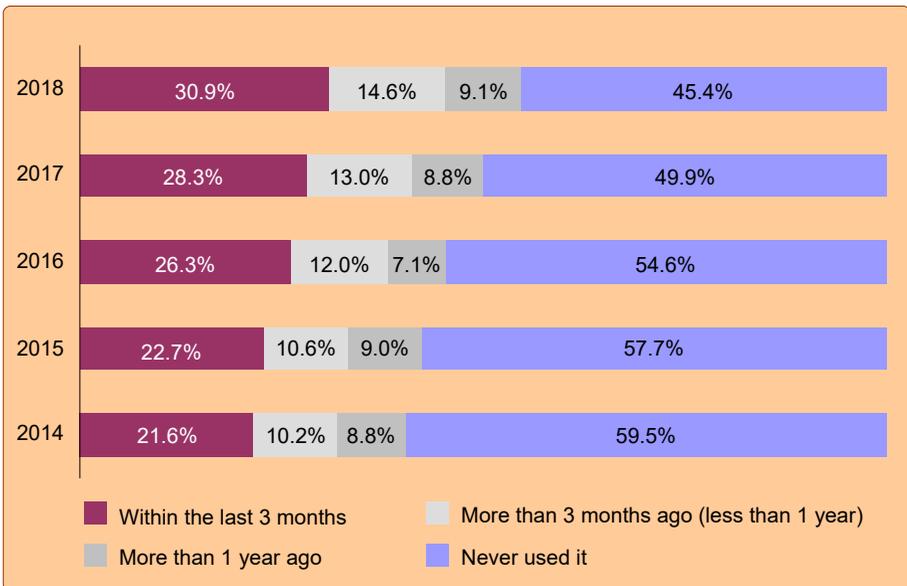
Compared to 2017, the number of persons who bought or ordered goods/services over the Internet increased by some 130 000.

Chart 1.31. Which of the following goods or services have you ordered (for private purposes) over the Internet in the last 12 months)?

Category	Value
Clothes, sports goods	55.5%
Household goods (furniture, toys...)	22.6%
Electronic equipment (including cameras)	18,3%
Books/magazines/newspapers	12,2%
Pharmaceutical products	8,0%
Holiday accommodation (hotel...)	6,4%
Tickets for cultural events	5,3%
Hardware	4,8%
Games and upgrades	4,6%
Food or groceries	4,4%
Films, music	3,2%
Telecommunication services (broadband subscriptions...)	2,6%
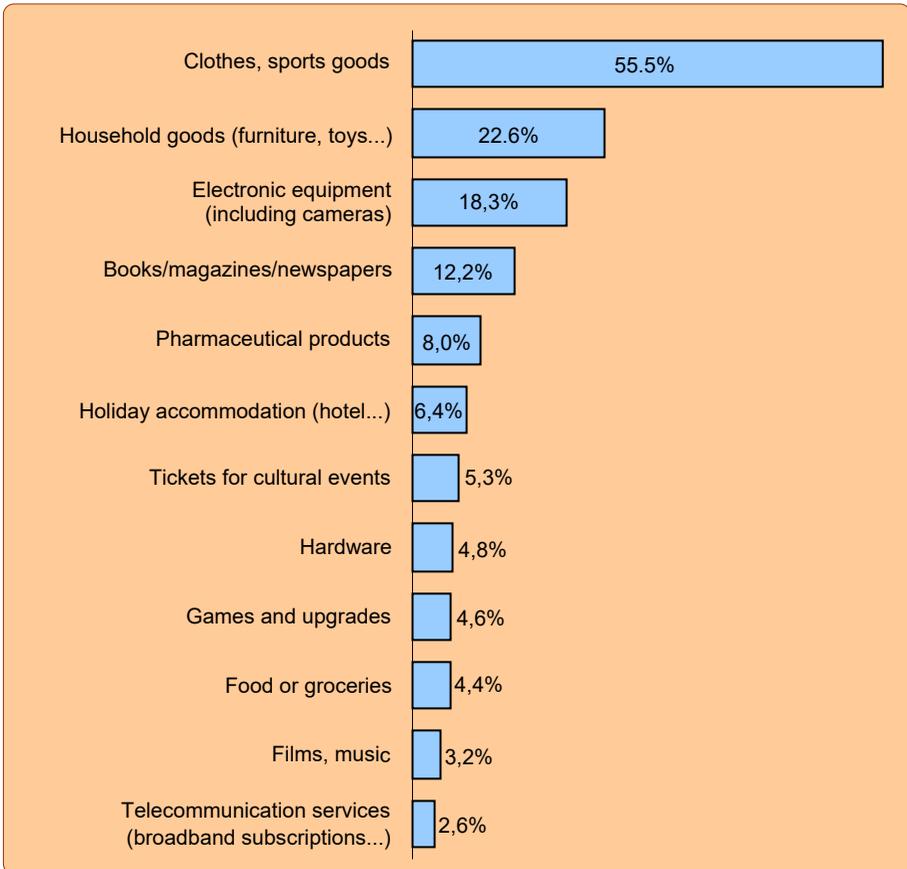
Most of the Internet users bought/ordered clothes and sport goods (55.5%) and household goods (22.6%).

Chart 1.32. How often have you bought/ordered goods or services over the Internet, for private purposes, in the last three months?
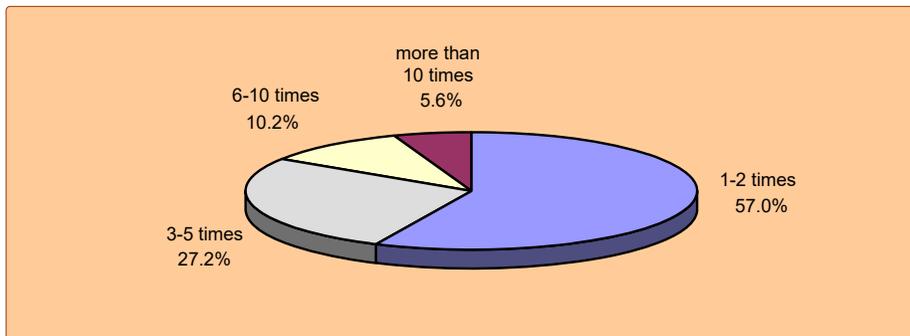
Chart 1.33. How much have you spent when buying/ordering goods or services over the Internet for private purposes, in the last three months?
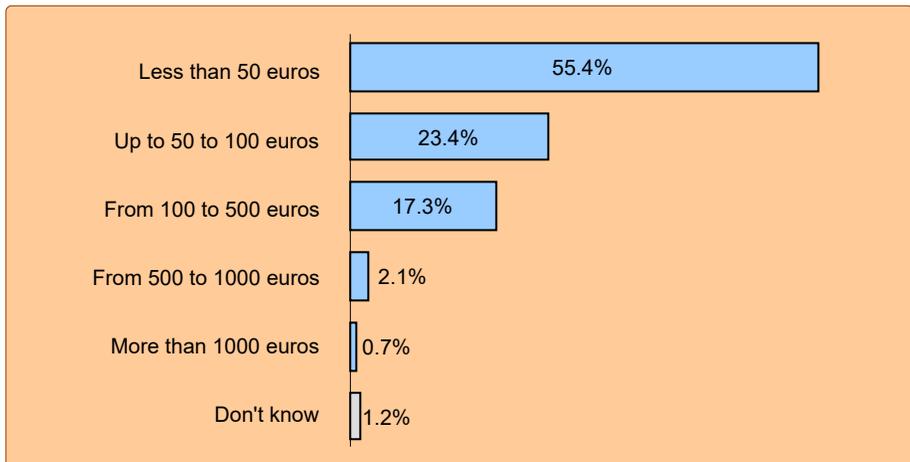
1.3.9. Use od cloud services

The survey indicates that 21.3% of Internet population used cloud services to store or share information.

Chart 1.34. Did you use any of the following cloud services to store information (documents, photos, music and video files): *Google drive, Dropbox, Windows Skydrive, iCloud*?

| January 2018 | 21.3% | 78.7% |

YES   NO
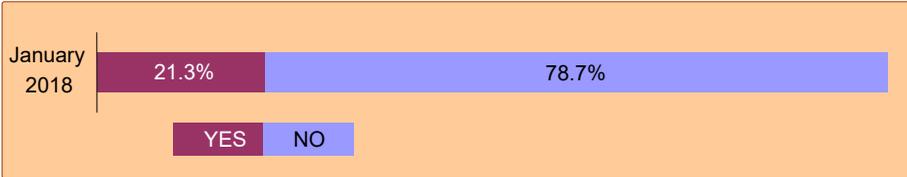
1.3.10. Trust, security and privacy

The survey indicates that 77.6% of the Internet population used a smartphone for private purposes. As for security software or services such as antivirus, antispam or firewall, 39.6% of respondents said that the security was installed automatically, while 20.4% of respondents answered having installed an additional type of security besides the automatically installed one.

Chart 1.35. Does your smartphone have any kind of security software like antivirus, antispam, firewall?

Don't know 14.9%

Yes, installed automatically or provided with the operating system 39.6%

Yes I installed it or subscribed to it or somebody did it for me 20.4%

NO 25.1%
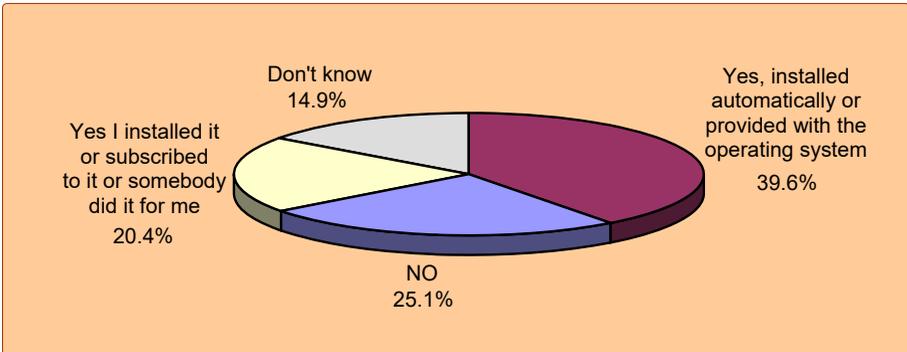
1.3.11. ICT usage at work

When asked about activities carried out at work at least once a week, 80.1% of the Internet employed population answered having exchanged e-mails or entered data into databases, while 22.5% of respondents used social media for work.

Chart 1.36. Do you carry out any of the following activities in your work at least once a week?
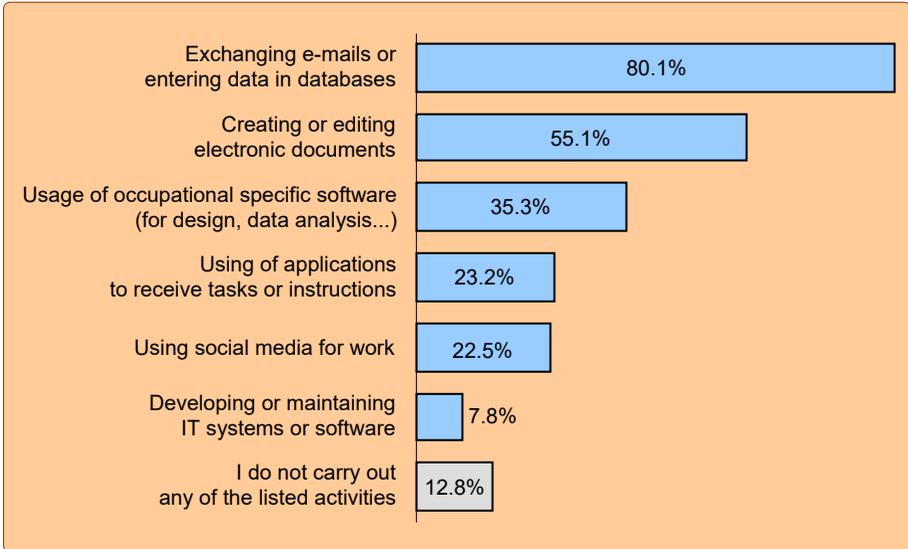
The survey indicates that among 19.1% of respondents who are employed and have used the Internet in the last three months every day or almost every day, 10.3% have worked at home at least once a week (but not every day), while 60.3% of respondents have said not having worked from home ever.

Chart 1.37. How often have you worked from home in the last 12 months?
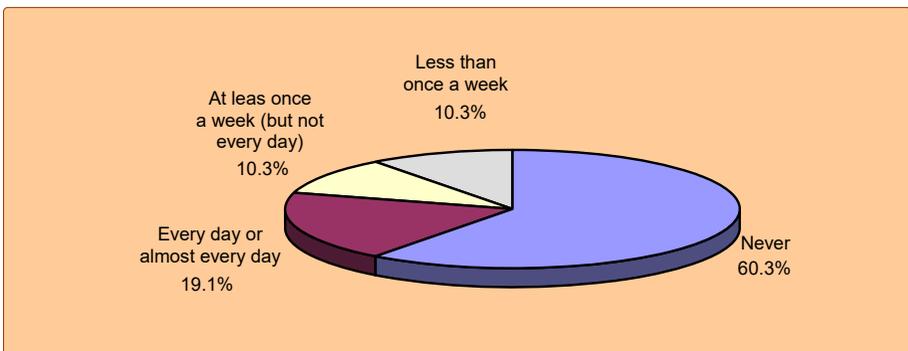
Among the respondents who have answered having worked from home, 92.6% have used the Internet for work.

Chart 1.38. When working from home have you used the Internet for your work?

January
2018 | 92.6% | 7.4% |

YES   NO
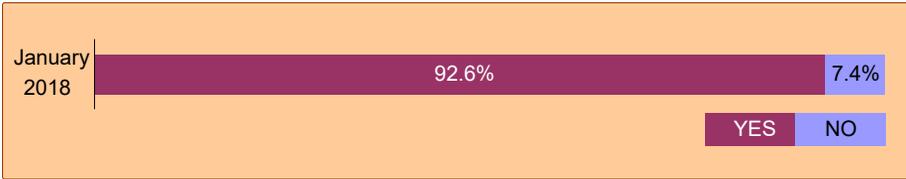
1.3.12. E-skills

As regard learning activities used to improve skills relating to the use of computers, software or applications in the last 12 months, 12% of Internet users have said having used free on-line study or self-study, while 4.1% of respondents have used paid training or training provided by employer.

Chart 1.39. Which learning activities have you carried out to improve your skills relating to the use of computers, software in the last 12 months?

Free on-line study or self-study — 12.0%
On-the-job training (by co-workers, supervisors) — 5.3%
Training or provided by your employer — 4.1%
Training paid by yourself — 2.1%
Free training provided by public programmes/organisations — 1.6%

Chart 1.40. In which of the following fields relating to the use of computers, software have you had training in the last 12 months?

Field	Percentage
Other fields of training related to the use of computers, software...	37.3%
Data analysis or management of databases	24.2%
Specific software applications for work	21.8%
Social media (such as Google groups, Facebook, Jive)	18.0%
Programming languages, including design or management of websites	17.5%
On-line marketing or e-commerce	15.0%
Maintenance of computer networks, servers, etc.	7.8%
IT security or privacy management	6.7%

1.4. SURVEY FINDINGS

MODULE 1.A: Access to information and communication technologies

In percentage

Answer (households)	Income			Region			Type of household		Total
	Up to 300 euros	300 - 600 euros	More than 600 euros	Central Serbia	Vojvodina	Belgrade	Urban	Other	
A1_0: Devices available in households (all that apply)									
Desktop	54.8	80.6	87.9	69.0	69.3	81.1	78.2	61.8	72.1
Laptop	31.4	50.6	71.5	42.9	43.2	61.5	55.0	35.0	47.6
TV	99.1	98.9	99.5	99.4	98.3	99.3	98.8	99.6	99.1
Radio-receiver	55.6	71.9	80.4	71.7	55.7	72.4	70.8	61.1	67.2
Mobile phone	88.5	94.8	96.7	92.3	91.9	95.5	95.3	89.0	93.0
A1: Do you or anyone in your household have access to the Internet at home?									
Yes	56.8	80.6	87.8	69.3	70.7	82.2	78.3	63.9	72.9
No	43.2	19.4	12.2	30.7	29.3	17.8	21.7	36.1	27.1
A2: Types of Internet connections (all that apply)[1]									
DSL (ADSL)	53.3	51.1	50.5	58.4	53.0	37.8	47.7	58.4	51.2
Cable Internet	36.8	43.1	47.4	32.8	41.2	59.2	47.8	31.5	42.5
Mobile phone (tablet, USB) (via 3G network)	60.8	68.1	73.9	62.4	68.3	74.7	68.7	65.0	67.5
Dial-up access over telephone or ISDN	0.0	0.8	0.2	0.4	0.3	0.5	0.5	0.2	0.4
Mobile telephone (putem GPRS-a)	4.7	3.9	4.7	7.5	0.7	3.5	4.0	5.5	4.5

[1] The data refer to households that answered in question A1 "YES".

MODULE 1.A: Access to information and communication technologies

In percentage

Answer (households)	Income			Region			Type of household		
	Up to 300 euros	300 - 600 euros	More than 600 euros	Central Serbia	Vojvodina	Belgrade	Urban	Other	Total
A3: Reasons for not having access to the Internet at home (all that apply) [2]									
Have access to the Internet elsewhere	6.8	19.5	17.7	9.2	7.4	18.7	15.0	6.0	9.7
Don't need the Internet	78.0	76.0	42.4	73.6	80.9	76.7	76.4	76.6	76.5
Equipment costs too high	21.6	11.6	0.0	23.0	12.8	15.6	20.0	17.6	18.6
Access costs too high	18.7	10.5	0.0	23.2	5.8	14.3	15.5	16.4	16.0
Lack of skills	21.7	13.8	24.6	28.9	6.8	25.0	17.6	22.9	20.7
Privacy or security concerns	0.3	0.0	0.0	0.0	0.0	1.8	0.0	0.4	0.2
Broadband Internet is not available	3.4	2.2	10.2	6.0	0.0	3.9	1.3	5.3	3.6
None of the above; other reasons	2.9	7.4	24.3	2.8	7.1	3.2	2.8	5.4	4.4

[2] The data refer to households that answered in question A1 "NO".

MODULE 1.B_0:

Answer (individuals)	Age						Sex	
	16 - 24	25 - 34	35 - 44	45 - 54	55 - 64	65 - 74	Men	Women
B1_0: When did you last								
Within the last 3 months	95.9	90.6	82.1	80.2	52.3	25.6	74.5	67.0
More than 3 months ago (less than 1 year)	1.9	3.0	3.1	1.6	1.1	1.0	1.5	2.4
More than 1 year ago	0.8	3.9	6.2	5.3	4.5	5.4	4.4	4.7
Never used it	1.4	2.5	8.5	12.8	42.0	68.0	19.6	25.9
B2_0: How often on average have you used								
Every day or almost every day	84.8	83.0	87.1	81.1	79.3	75.2	84.7	80.9
At least once a week	9.9	12.7	10.1	12.2	16.0	19.9	11.4	13.5
At least once a month	4.8	3.3	2.6	2.9	2.6	2.9	1.8	4.8
Less than once a month	0.5	1.1	0.3	3.8	2.0	2.1	2.2	0.8

[1] The data refer to individuals who answered in question B1_0 "Within the last 3 months" .

Use of computers

In percentages

Educational level			Employment situation					Answer (individuals)
Lower than secondary	Secondary	Tertiary	Employed	Unemployed	Student	Other	Total	
a computer								
41.1	80.5	93.0	86.8	74.6	100.0	44.0	70.7	Within the last 3 months
2.1	2.2	1.1	2.8	1.5	0.0	1.6	2.0	More than 3 months ago (less than 1 year)
5.1	5.0	2.1	3.4	6.4	0.0	5.4	4.5	More than 1 year ago
51.7	12.3	3.7	7.0	17.6	0.0	49.0	22.8	Never used it
a computer in the last 3 months								
73.1	82.6	91.2	86.9	79.6	91.0	73.9	82.8	Every day or almost every day
18.3	12.6	7.4	10.3	13.9	5.7	18.0	12.4	At least once a week
4.7	3.5	1.3	1.8	3.4	3.3	6.3	3.2	At least once a month
4.0	1.3	0.1	0.9	3.1	0.0	1.8	1.5	Less than once a month

MODULE 1.B: Use

Answer (individuals)	Age						Sex	
	16 - 24	25 - 34	35 - 44	45 - 54	55 - 64	65 - 74	Men	Women
When did you last								
Within the last 3 months	98.0	97.8	90.6	79.8	51.2	25.0	76.8	70.1
More than 3 months ago (less than 1 year)	0.7	0.3	2.7	2.3	0.4	0.8	1.6	0.9
More than 1 year ago	0.8	0.3	0.6	1.7	1.4	2.2	0.7	1.6
Never used it	0.5	1.6	6.2	16.2	47.0	71.9	20.9	27.5
B2: How often, on average, have you used								
Every day or almost every day	97.9	95.1	92.3	91.0	87.1	79.1	92.7	91.8
At least once a week	1.4	3.4	7.2	7.1	11.1	15.8	6.1	6.6
At least once a month	0.7	1.5	0.5	1.8	1.8	4.3	1.2	1.5
Less tha once a months	0.0	0.0	0.0	0.2	0.0	0.9	0.1	0.1
B2.1: Did you use the Internet								
Yes	98.0	93.7	94.0	90.3	84.0	84.9	91.7	92.9
No	2.0	6.3	6.0	9.7	16.0	15.1	8.3	7.1
B3: On which of the following devices have you used								
Desktop computer	59.4	55.0	64.0	65.1	56.3	53.8	63.5	55.8
Laptop	48.1	51.5	42.7	43.8	38.4	44.6	47.6	42.9
Tablet	18.6	22.2	29.4	18.9	12.9	9.8	20.3	21.2
Mobile phone or smartphone	96.7	92.9	85.6	77.6	69.6	53.3	81.0	86.7
Other devices (e.g. media or games player, e-book reader, smart watch)	3.3	2.3	2.9	3.3	1.9	2.6	1.9	3.7
B4: Have you used any of the following mobile devices to access								
Mobile phone or smartphone	89.1	87.1	79.5	76.0	59.8	42.6	78.5	76.7
Laptop	5.9	6.7	5.9	8.1	6.9	2.6	6.1	6.8
Tablet	3.7	5.8	7.7	6.0	4.4	2.2	4.1	7.0
Other devices (e.g. media or games player, e-book reader, smart watch)	0.0	1.3	0.2	0.8	0.4	0.8	0.9	0.3
Did not access the Internet via any mobile device away from home or work	10.2	12.7	20.0	23.0	38.9	55.6	20.6	22.8

1) The data refer to individuals who answered in question B1 "Within the last 3 months" .

2) The data refer to individuals who answered in question B2 "Every day or almost every day".

of the Internet

In percentages

Educational level			Employment situation					Answer (individuals)
Lower than secondary	Secondary	Tertiary	Employed	Unemployed	Student	Other	Total	
use the Internet?								
46.9	83.0	90.8	89.7	79.0	100.0	45.5	73.4	Within the last 3 months
2.7	0.6	0.3	1.1	1.8	0.0	1.1	1.2	More than 3 months ago (less than 1 year)
1.4	1.2	0.8	0.5	1.2	0.0	2.1	1.2	More than 1 year ago
49.0	15.2	8.1	8.6	17.9	0.0	51.3	24.2	Never used it
the Internet in the last 3 months?[1]								
88.6	92.1	95.9	94.4	91.7	98.1	85.7	92.2	Every day or almost every day
9.3	6.3	3.6	4.8	7.8	0.0	10.3	6.3	At least once a week
2.1	1.4	0.4	0.7	0.5	1.9	3.8	1.4	At least once a month
0.0	0.1	0.1	0.1	0.0	0.0	0.2	0.1	Less than once a months
several times during the days?[2]								
88.1	92.2	96.0	93.6	91.6	100.0	86.9	92.3	Yes
11.9	7.8	4.0	6.4	8.4	0.0	13.1	7.7	No
the Internet in the last 3 months? (all that apply)[1]								
48.9	61.4	65.3	63.8	56.7	54.1	55.2	59.8	Desktop computer
31.6	44.1	61.1	49.8	40.8	60.1	35.0	45.3	Laptop
18.0	20.6	23.6	23.5	22.2	17.0	13.5	20.7	Tablet
81.6	84.1	84.6	87.7	83.8	98.0	69.7	83.7	Mobile phone or smartphone
0.5	3.4	3.0	3.2	2.0	6.6	1.3	2.8	Other devices (e.g. media or games player, e-book reader, smart watch)
the Internet away from home or work in the last 3 months? (all that apply)[1]								
70.1	78.8	81.1	83.9	77.3	93.8	57.5	77.6	Mobile phone or smartphone
0.7	5.7	13.9	8.3	5.6	7.5	2.7	6.5	Laptop
1.9	5.2	9.8	7.1	6.2	3.0	1.7	5.5	Tablet
0.0	0.7	1.0	0.9	0.3	0.0	0.4	0.6	Other devices (e.g. media or games player, e-book reader, smart watch)
29.9	20.4	17.6	15.4	21.8	6.2	41.6	21.7	Did not access the Internet via any mobile device away from home or work

MODULE 1.B: Use

Answer (individuals)	Age						Sex	
	16 - 24	25 - 34	35 - 44	45 - 54	55 - 64	65 - 74	Men	Women
B5: Which of the following activities have you performed								
Sending/receiving e-mails	61.0	59.8	52.6	51.1	43.2	37.7	53.7	52.9
Telephoning over the Internet/video-calls	68.3	69.3	65.9	67.9	65.1	66.4	61.0	74.1
Participating in social networks (*Facebook, Twitter*)	96.4	85.7	74.2	56.9	38.7	33.4	66.4	74.4
Finding information about goods and services	70.3	76.7	82.4	81.4	72.1	68.2	76.2	77.3
Listening to music (radio on the Internet, music streaming)	78.8	68.6	60.8	52.3	42.5	29.1	60.8	58.8
Watching steamed TV	34.3	32.0	27.2	22.0	18.1	9.9	27.2	25.5
Watching video on demand from commercial services	29.0	26.7	23.9	21.3	13.6	12.7	22.1	23.8
Watching video content from sharing services	93.0	90.0	76.5	67.3	56.6	45.4	77.4	75.1
Playing or downloading games	52.4	27.8	25.3	19.9	19.6	16.5	27.6	28.6
Seeking health-related information	49.4	55.2	58.2	58.9	53.3	48.7	48.6	61.8
Making an appointment with a practitioner via a website or application	6.5	7.3	9.0	9.4	5.8	7.1	6.1	9.5
Selling of goods or services, e.g. via auctions (e.g. eBay)	19.9	29.1	25.5	23.2	12.6	6.6	24.5	19.8
Internet banking	12.5	21.5	28.0	22.4	14.5	14.3	21.6	19.1
B5.1: Have you used cloud services for storage of files *Google drive*, *Dropbox*, **Windows Skydrive,**								
Yes	26.0	23.0	26.2	17.9	13.1	11.6	21.6	21.0
No	74.0	77.0	73.8	82.1	86.9	88.4	78.4	79.0
B6: Have you used any websites or applications to book								
Yes, dedicated website or application (e.g. *AIRBNB*, *Booking*)	10.3	15.0	15.2	13.5	9.5	7.0	12.8	12.9
Yes, other websites or applications (including social networks)	3.7	2.6	3.9	2.1	3.1	1.4	2.1	3.9
No, I have not	86.0	82.9	81.1	85.4	87.7	91.6	85.5	83.6

[1] The data refer to individuals who answered in question B1 "Within the last 3 months" .

[3] The data refer to individuals who answered in question B1 "Within the last 3 months" or "More than 3 months ago (less than 1 year).

of the Internet

In percentages

Educational level			Employment situation				Total	Answer (individuals)
Lower than secondary	Secondary	Tertiary	Employed	Unemployed	Student	Other		

over the Internet for private purposes in the last 3 months?[1] (all that apply)

26.2	52.9	79.3	61.7	47.3	82.2	30.9	53.3	Sending/receiving e-mails
57.0	69.2	71.7	69.3	66.3	72.3	62.4	67.4	Telephoning over the Internet/video-calls
69.8	72.2	65.4	70.2	72.9	98.7	58.9	70.3	Participating in social networks (*Facebook, Twitter*)
60.4	78.1	87.9	83.5	70.8	79.3	66.5	76.8	Finding information about goods and services
54.0	60.2	64.3	61.1	61.5	89.5	45.8	59.8	Listening to music (radio on the Internet, music streaming)
17.5	28.6	28.3	29.3	24.1	34.9	19.3	26.4	Watching steamed TV
12.3	25.1	26.6	27.7	17.4	27.7	16.3	22.9	Watching video on demand from commercial services
71.7	77.3	77.4	79.4	76.4	93.4	63.3	76.3	Watching video content from sharing services
35.4	28.1	21.5	23.1	30.8	41.2	33.3	28.1	Playing or downloading games
42.3	56.8	61.6	57.9	55.7	58.1	46.1	55.0	Seeking health-related information
2.5	7.6	12.9	10.9	5.5	8.4	2.5	7.8	Making an appointment with a practitioner via a website or application
16.3	23.9	23.0	25.9	24.0	21.6	11.5	22.2	Selling of goods or services, e.g. via auctions (e.g. eBay)
5.2	19.6	36.3	30.1	10.8	14.1	9.5	20.4	Internet banking

(documents, pictures, music or video files):
iCloud , Amazon cloud drive… ?

7.0	21.9	32.9	24.4	21.2	30.3	11.2	21.3	Yes
93.0	78.1	67.1	75.6	78.8	69.7	88.8	78.7	No

an accommodation (a room, apartment, holiday cottage)? (all that apply)[3]

3.0	10.8	28.1	18.2	7.2	14.2	5.7	12.8	Yes, dedicated website or application (e.g. *AIRBNB* , *Booking*)
1.7	2.4	5.8	3.0	3.6	4.4	1.7	3.0	Yes, other websites or applications (including social networks)
95.7	86.9	67.3	79.2	89.7	81.4	92.6	84.6	No, I have not

MODULE 1.B: Use

Answer (individuals)	Age						Sex	
	16 - 24	25 - 34	35 - 44	45 - 54	55 - 64	65 - 74	Men	Women
B7: Have you used any website or application to arrange								
Yes, dedicated website or application (e.g. *UBER*)	5.9	8.7	10.6	8.6	5.5	6.5	8.1	8.1
Yes, other websites or applications (including social networks)	1.6	1.9	1.5	1.1	1.4	0.8	1.4	1.6
No, I have not	92.5	89.7	88.0	90.4	93.1	92.7	90.5	90.5
B8: Have you performed paid work using intermediary websites Amazon mechanical Turk)								
Yes	3.2	5.4	4.6	4.0	0.9	1.9	5.0	2.5
No	96.8	94.6	95.4	96.0	99.1	98.1	95.0	97.5
B8.1: Could you please specify if the								
The main source of your income	47.6	36.5	19.1	9.6	12.4	41.6	26.2	29.0
An additional source of income	52.4	63.5	80.9	90.4	87.6	58.4	73.8	71.0

[3] The data refer to individuals who answered in question B1 "Within the last 3 months" or "More than 3 months ago (less than 1 year ago).

of the Internet

In percentages

Educational level			Employment situation					Answer (individuals)
Lower than secondary	Secondary	Tertiary	Employed	Unemployed	Student	Other	Total	
transport services (by car, etc.)?[3] (all that apply)								
3.6	7.3	14.5	10.5	8.3	1.9	4.0	8.1	Yes, dedicated website or application (e.g. *UBER*)
1.8	0.7	3.5	1.7	2.0	0.0	0.9	1.5	Yes, other websites or applications (including social networks)
94.6	92.0	82.5	88.1	89.8	98.1	95.1	90.5	No, I have not
or applications (e.g. Upwork, TaskRabbit, Freelancer, in the last 12 months?[3]								
3.2	2.9	6.8	4.9	3.1	8.5	0.5	3.8	Yes
96.8	97.1	93.2	95.1	96.9	91.5	99.5	96.2	No
income of this work is:								
0.0	48.1	14.2	20.6	17.3	73.3	13.3	27.1	The main source of your income
100.0	51.9	85.8	79.4	82.7	26.7	86.7	72.9	An additional source of income

MODULE 1.C: Use of

Answers (individuals)	Age						Sex	
	16 - 24	25 - 34	35 - 44	45 - 54	55 - 64	65 - 74	Men	Women
C1: For which of the following public authorities' services								
Obtaining information from websites or applications	29.9	35.8	39.7	37.6	34.5	27.7	35.5	35.5
Downloading/printing official forms	15.7	21.5	25.1	25.7	20.3	15.3	22.6	20.7
Submitting completed forms on-line	12.7	13.4	16.5	20.0	18.6	12.6	16.3	15.6
C2: What were the reasons for not submitting completed forms								
No need to submit completed forms	87.2	85.2	81.0	74.3	63.2	69.5	80.9	76.3
There were no such on-line services available	0.0	0.9	0.0	0.4	0.3	0.6	0.3	0.4
Lack of skills	1.5	7.5	8.2	15.0	21.3	17.8	11.0	9.9
Concerns about security and protection of personal data	3.1	2.9	1.7	3.4	2.6	1.4	1.8	3.6
Another person did it on my behalf	3.1	0.8	3.0	1.7	4.7	5.3	2.0	3.4
Other reasons	5.1	5.8	7.0	9.1	8.7	7.6	6.4	7.7

[1] The data refer to individuals who answered in question B1 "Within the last 3 months" or "More than 3 months (less than 1 year)".

[2] The data refer to individuals who did not answer in question C1 "Submitting completed forms".

e-government[1)]

In percentages

Educational level			Employment situation					Answers (individuals)
Lower than secondary	Secondary	Tertiary	Employed	Unemployed	Student	Other	Total	
have you used the Internet in the last 12 months?[1)] (all that apply)								
19.4	34.2	54.5	44.0	26.2	37.7	24.9	35.5	Obtaining information from websites or applications
9.6	19.9	38.4	28.6	14.3	24.1	12.7	21.7	Downloading/printing official forms
7.5	14.5	28.2	22.6	7.2	16.6	9.7	15.9	Submitting completed forms on-line
to public authorities over the Internet in the last 12 months?[2)]								
73.8	80.7	78.9	86.3	72.9	95.5	67.4	78.7	No need to submit completed forms
0.0	0.0	2.4	0.1	1.1	0.0	0.1	0.4	There were no such on-line services available
14.3	10.2	4.7	4.9	14.6	4.5	17.2	10.5	Lack of skills
2.7	2.5	2.9	1.8	3.2	0.0	4.1	2.6	Concerns about security and protection of personal data
2.8	2.0	5.1	2.1	1.8	0.0	5.3	2.7	Another person did it on my behalf
8.3	6.5	7.1	5.3	9.2	0.0	9.4	7.0	Other reasons

MODULE 1.D:

Answers (individuals)	Age						Sex	
	16 - 24	25 - 34	35 - 44	45 - 54	55 - 64	65 - 74	Men	Women
D1: When did you last buy (for private purposes) /								
Within the last 3 months	30.3	42.9	36.4	27.0	17.2	9.8	31.6	30.1
More than 3 months ago (less than 1 year ago)	21.5	16.7	16.5	12.1	6.9	6.0	13.0	16.2
More than 1 year ago	12.7	10.8	9.3	7.7	5.8	4.9	9.3	9.0
Never	35.5	29.7	37.8	53.1	70.0	79.3	46.1	44.7
D2: What types of goods or services did you order/buy (for private purposes)								
Food or groceries	2.5	4.7	6.6	4.0	1.8	2.1	4.3	4.5
Household goods (furniture, toys...)	11.7	23.2	24.8	25.3	31.9	29.7	21.1	24.0
Pharmaceutical products	5.1	11.4	6.9	5.6	10.8	7.9	3.6	12.4
Clothes, sports goods	65.9	55.6	57.4	48.3	45.7	24.8	46.2	64.7
Hardware	6.1	5.7	3.1	5.0	4.3	2.8	8.1	1.4
Electronic equipment (including cameras)	21.1	14.2	19.4	17.8	17.1	44.0	28.1	8.3
Telecommuncation services (broadband subscriptions...)	1.0	3.0	2.8	2.7	4.1	1.8	2.5	2.7
Holiday accommodation (hotel...)	5.8	6.0	8.7	4.0	5.8	10.5	4.3	8.6
Other travel arrangements (trasnsport tickets, car hire...)	4.1	5.6	7.0	6.0	10.5	3.1	4.9	7.3
Tickets for cultural events	5.0	4.6	7.4	3.2	7.4	2.1	2.7	8.0
Films, music	2.2	4.4	3.7	1.7	3.5	0.0	3.4	3.1
Books/magazines/newspapers	8.0	12.5	15.7	12.0	10.0	8.1	10.2	14.1
E-learning material	1.0	1.5	1.8	2.5	1.4	0.0	1.3	1.9
Video games and *upgrades*	2.6	5.3	5.8	4.8	3.6	0.0	5.6	3.6
Other	7.9	8.1	14.9	13.2	15.6	17.6	15.2	7.7

[1] The data refer to individuals who answered in question B1 "Within the last 3 months" or "More than 3 months (less than 1 year)".

[2] The data refer to individuals who answered in question D1 "Within the last 3 months" or "More than 3 months (less than 1 year)".

e-commerce[1)]

In percentages

Educational level			Employment situation				Total	Answers (individuals)
Lower than secondary	Secondary	Tertiary	Employed	Unemployed	Student	Other	Total	
order goods or services over the Internet?								
17.8	33.3	36.8	36.4	31.3	35.5	16.4	30.9	Within the last 3 months
11.8	16.1	13.2	14.7	15.5	20.8	11.5	14.6	More than 3 months ago (less than 1 year ago)
9.9	9.0	8.8	9.8	9.3	12.2	6.6	9.1	More than 1 year ago
60.5	41.6	41.2	39.1	43.9	31.5	65.4	45.4	Never
over the Internet in the last 12 months? (all that apply)[2)]								
5.5	3.3	7.0	5.3	4.0	5.2	0.8	4.4	Food or groceries
17.7	22.8	24.7	25.3	21.9	8.5	20.2	22.6	Household goods (furniture, toys...)
4.8	8.0	9.7	7.7	7.0	7.7	10.9	8.0	Pharmaceutical products
63.2	56.6	47.9	52.5	59.9	70.8	50.9	55.5	Clothes, sports goods
5.3	4.0	6.8	6.0	3.7	0.9	3.9	4.8	Hardware
20.1	16.0	23.4	20.5	10.0	17.9	24.4	18.3	Electronic equipment (including cameras)
0.0	2.7	3.7	3.2	3.0	0.0	0.8	2.6	Telecommuncation services (broadband subscriptions...)
0.0	6.6	9.6	7.6	4.7	8.9	3.5	6.4	Holiday accommodation (hotel...)
0.0	4.7	13.5	6.2	7.3	5.2	3.9	6.1	Other travel arrangements (trasnport tickets, car hire...)
0.0	4.5	10.8	6.3	4.5	7.6	1.8	5.3	Tickets for cultural events
0.0	3.5	4.3	4.2	2.2	2.6	1.1	3.2	Films, music
4.2	10.1	22.5	15.1	7.6	14.1	7.1	12.2	Books/magazines/newspapers
0.0	1.1	3.9	2.5	0.0	2.6	0.5	1.6	E-learning material
2.9	4.7	5.3	5.3	3.8	2.6	4.4	4.6	Video games and *upgrades*
10.5	12.2	10.0	12.4	10.3	4.8	13.4	11.5	Other

MODULE 1.D:

Answers (individuals)	Age						Sex	
	16 - 24	25 - 34	35 - 44	45 - 54	55 - 64	65 - 74	Men	Women
D3: From whom have you bought/ordered goods/services								
National sellers	82.7	86.8	86.0	82.9	84.6	90.8	83.2	87.1
Sellers from EU countries	3.1	7.8	11.1	9.9	10.7	16.5	9.4	7.7
Sellers from the rest of the world	20.2	12.6	18.4	16.3	17.6	9.1	20.3	12.6
Country of origin of sellers is unknown	1.3	1.8	0.9	2.5	1.3	0.0	1.0	2.0
D4: How many times have you bought/ordered goods or services								
1-2 times	55.8	57.5	51.1	61.4	64.7	73.6	56.9	57.1
3-5 times	27.6	23.4	32.0	26.3	30.0	13.1	24.5	30.2
6-10 times	11.5	10.5	11.3	10.2	3.0	9.2	12.0	8.3
More than 10 times	5.1	8.7	5.5	2.2	2.3	4.1	6.6	4.4
D5: How much have you spent buying/ordering goods or services								
More than 50 euros	53.7	65.9	49.6	48.0	57.7	36.5	52.5	58.5
From 50 to 100 euros	24.5	18.3	25.0	30.3	19.1	27.9	23.2	23.6
From 100 to 500 euros	16.6	13.9	20.5	18.2	17.0	25.8	19.9	14.5
From 500 to 1000 euros	1.5	1.4	2.2	2.6	3.9	2.9	2.9	1.2
More than 1000 euros	0.0	0.4	0.8	0.0	2.3	6.9	0.9	0.5
Don't know	3.7	0.0	1.8	0.9	0.0	0.0	0.7	1.9
D6: Have you carried out any of the following financial activities over the								
Buying/selling shares, bonds or other investment services	0.0	0.7	0.8	0.0	0.1	0.0	0.6	0.0
Buying/selling insurance policies	0.2	2.0	2.2	1.3	1.8	0.9	1.7	1.3
Taking a loan from banks or other financial institutions	0.0	0.0	0.1	0.3	0.4	0.2	0.1	0.2

[1] The data refer to individuals who answered in question B1 "Within the last 3 months" or "More than 3 months ago (less than 1 year ago)".

[2] The data refer to individuals who answered in questions D1 "Within the last 3 months" or "More than 3 months (less than 1 year ago)".

[3] The data refer to individuals who answered in question D1 "Within 3 months".

[4] The data refer to individuals who answered in question B1 "Within the last 3 months".

e-commerce[1]

In percentages

Educational level			Employment situation				Total	Answers (individuals)
Lower than secondary	Secondary	Tertiary	Employed	Unemployed	Student	Other		

								over the Internet in the last 12 months? (all that apply)[2]
90.6	85.5	80.9	83.5	87.8	86.6	86.0	85.1	National sellers
0.0	8.4	13.9	9.1	10.1	5.8	4.7	8.5	Sellers from EU countries
11.0	15.4	22.7	19.4	10.0	14.1	17.4	16.5	Sellers from the rest of the world
3.3	1.1	1.6	1.2	2.0	0.0	2.7	1.5	Country of origin of sellers is unknown

								over the Internet for private purposes in the last 3 months?[3]
59.2	57.1	55.7	50.6	68.8	62.1	61.8	57.0	1-2 times
22.7	27.8	27.9	29.9	19.9	37.9	22.1	27.2	3-5 times
12.4	9.7	10.5	12.2	6.8	0.0	13.3	10.2	6-10 times
5.7	5.4	5.8	7.2	4.6	0.0	2.8	5.6	More than 10 times

								over the Internet in the last 3 momths? (all that apply)[3]
50.3	58.5	49.7	52.4	69.3	53.0	42.7	55.4	More than 50 euros
34.2	20.4	25.8	24.7	14.7	34.6	28.1	23.4	From 50 to 100 euros
12.6	17.4	19.3	19.1	11.4	8.3	25.5	17.3	From 100 to 500 euros
2.8	1.8	2.3	1.9	3.2	0.0	1.5	2.1	From 500 to 1000 euros
0.0	0.4	1.8	0.7	0.0	0.0	2.2	0.7	More than 1000 euros
0.0	1.5	1.1	1.1	1.3	4.1	0.0	1.2	Don't know

								Internet (excluding e-mails) for private purposes in the last 12 months?[4]
0.0	0.5	0.1	0.3	0.7	0.0	0.0	0.3	Buying/selling shares, bonds or other investment services
0.0	1.4	3.3	1.8	2.0	0.0	0.6	1.5	Buying/selling insurance policies
0.0	0.1	0.4	0.1	0.1	0.0	0.2	0.2	Taking a loan from banks or other financial institutions

MODULE 1.E: Trust,

Answers (individuals)	Age						Sex	
	16 - 24	25 - 34	35 - 44	45 - 54	55 - 64	65 - 74	Men	Women
E1: Have you used the following identification procedure for on-line								
Simple login with username and password	48.7	46.0	43.9	34.0	27.6	17.5	39.1	40.3
Social media login used for other services	27.8	23.3	14.2	11.0	9.7	4.5	16.0	17.5
Security token	2.6	2.3	5.0	3.1	3.5	1.9	3.7	2.8
Electronic identification cerfiticate or card used with a card reader	2.6	2.1	5.5	3.9	2.5	1.4	3.9	2.7
Procedure involving your mobile phone (code)	18.3	14.7	16.0	10.3	6.5	3.7	13.1	12.9
Single use of pin code list or random characters of a password	5.7	4.4	7.7	5.8	3.7	1.4	5.7	5.1
Other electronic identification procedure	1.1	1.4	1.4	0.5	1.1	0.0	1.4	0.7
I have not used any electronic identification procedure	41.2	41.2	47.1	58.9	66.3	79.0	53.2	49.4
E2: Do you use a smartphone								
Yes	89.5	86.8	76.6	76.8	58.7	57.2	79.5	75.6
No	10.5	13.2	23.4	23.2	41.3	42.8	20.5	24.4
E3: Does your smartphone have any kind of security software or								
Yes, installed automatically or provided with the operating system	36.5	40.8	44.3	44.7	28.3	24.8	41.1	38.0
Yes, I installed it or subscribed to it or somebody else did it	20.9	15.4	21.8	19.5	28.0	25.9	16.8	24.4
No	34.6	27.7	22.1	18.7	19.6	25.4	29.1	20.6
Don't know	8.0	16.1	11.8	17.0	24.1	23.9	12.9	17.0

[1] The data refer to individuals who answered in question B1 "Within the last 3 months"
   or "More than 3 months (less than 1 year)".

[2] The data refer to individuals who answered in question E2 "YES".

security and privacy[1)]

In percentages

Educational level			Employment situation					Answers (individuals)
Lower than secondary	Secondary	Tertiary	Employed	Unemployed	Student	Other	Total	
services for private purposes in the last 12 months? (all that apply)								
26.7	39.2	53.4	45.4	37.1	52.6	25.0	39.7	Simple login with username and password
18.4	16.6	15.4	15.8	17.1	33.5	13.6	16.7	Social media login used for other services
0.6	2.6	7.6	4.6	1.8	2.9	1.7	3.3	Security token
0.6	3.1	6.5	5.3	1.3	2.8	1.1	3.3	Electronic identification cerfiticate or card used with a card reader
6.2	13.8	17.4	15.4	11.5	26.0	5.1	13.0	Procedure involving your mobile phone (code)
2.0	5.4	8.7	7.2	4.3	7.3	1.7	5.4	Single use of pin code list or random characters of a password
0.0	1.4	1.0	1.1	1.8	1.5	0.0	1.0	Other electronic identification procedure
65.2	50.7	39.9	45.6	53.3	35.2	67.7	51.3	I have not used any electronic identification procedure
for private purposes?[2)]								
68.8	79.2	81.8	81.9	75.3	91.3	66.0	77.6	Yes
31.2	20.8	18.2	18.1	24.7	8.7	34.0	22.4	No
service like antivirus, antispam or firewall?[2)]								
33.6	40.5	42.0	42.6	37.8	46.7	30.1	39.6	Yes, installed automatically or provided with the operating system
20.4	20.8	19.4	19.6	21.3	16.6	23.2	20.4	Yes, I installed it or subscribed to it or somebody else did it
30.2	24.4	23.0	24.4	24.8	28.9	26.1	25.1	No
15.9	14.3	15.5	13.4	16.1	7.8	20.6	14.9	Don't know

MODULE 1.E: Trust,

Answers (individuals)	Age						Sex	
	16 - 24	25 - 34	35 - 44	45 - 54	55 - 64	65 - 74	Men	Women
E4: Have your ever lost information, documents, pictures or other kind of data								
Yes	10.1	7.3	9.5	5.3	6.6	10.5	8.7	7.3
No	89.1	92.2	89.0	91.3	88.9	84.3	89.7	90.5
Don't know	0.8	0.5	1.5	3.4	4.6	5.3	1.7	2.2
E5: When you used or installed an application on your smartphone,								
Yes, at least once	40.1	34.5	35.6	29.8	21.7	25.9	28.7	38.4
No	50.6	54.4	51.5	50.4	52.8	50.2	57.2	46.0
I did not know it was possible	2.9	4.2	8.3	14.5	19.8	19.0	9.5	8.5
Not applicable (I do not use applications)	6.3	7.0	4.6	5.4	5.7	4.9	4.7	7.1

[1] The data refer to individuals who answered in question B1 "Within the last 3 months"
   or "More than 3 months (less than 1 year)".

[2] The data refer to individuals who answered in question E2 "YES".

security and privacy[1)]

In percentages

Educational level			Employment situation					Answers (individuals)
Lower than secondary	Secondary	Tertiary	Employed	Unemployed	Student	Other	Total	
on your smartphone as a result of a virus or other hostile type of programmes?[2)]								
9.9	8.0	6.6	8.4	4.9	9.1	10.5	8.0	Yes
89.1	89.7	91.8	90.4	92.3	90.9	85.7	90.1	No
1.0	2.3	1.6	1.2	2.9	0.0	3.7	1.9	Don't know
have you restricted or refused access to your personal data?[2)]								
27.0	34.1	36.2	35.2	28.9	43.7	29.0	33.3	Yes, at least once
51.3	53.2	48.9	51.5	53.3	49.4	52.5	51.9	No
18.3	6.4	8.6	7.4	13.4	1.6	11.0	9.0	I did not know it was possible
3.4	6.3	6.3	5.9	4.5	5.3	7.5	5.8	Not applicable (I do not use applications)

MODULE 1.Q: ICT

Answer (individuals)	Age						Sex	
	16 - 24	25 - 34	35 - 44	45 - 54	55 - 64	65 - 74	Men	Women
Q1: Do you use computers, laptops,								
Yes	53.4	58.3	54.9	64.0	61.7	-	55.2	63.6
No	46.6	41.7	45.1	36.0	38.3	-	44.8	36.4
Q2: Do you use computerized equipment or machinery such as those (including handheld devices								
Yes	12.0	12.4	15.6	15.8	19.3	-	14.8	15.2
No	88.0	87.6	84.4	84.2	80.7	-	85.2	84.8
Q3: Do you carry out any of the following activities								
Exchanging e-mails or entering data into databases	82.0	79.0	81.2	79.3	79.8	-	74.7	86.0
Creating or editing electronic documents	60.2	49.3	59.0	55.7	54.8	-	50.2	60.5
Using social media for work	53.2	24.1	21.7	18.6	19.2	-	21.5	23.7
Using of applications to receive tasks or instructions	19.2	24.7	20.6	25.8	22.2	-	26.2	19.8
Using occupational specific software (for design, data analysis…)	41.3	29.9	41.4	31.5	38.1	-	38.7	31.5
Developing or maintaining IT systems or software	38.9	6.7	7.2	5.3	6.0	-	9.1	6.3
I do not carrry out any of the listed activities in my work	8.9	12.9	13.4	11.7	15.7	-	16.3	9.0
Q4: Have your main job tasks changed as a result of the introduction								
Yes	20.5	23.6	30.1	38.9	27.1	-	27.0	32.8
No	79.5	76.4	69.9	61.1	72.9	-	73.0	67.2

[1] The data refer to individuals who are employed and answered in question B1"Within the last 3 months" or "More than 3 months ago (less than 1 year ago)".

[2] The data refer to individuals who answered in question Q1 "YES".

[3] The data refer to individuals who answered in question Q1 "NO" and "YES" in question Q2.

usage at work[1]

In percentages

Educational level			Employment situation				Total	Answer (individuals)
Lower than secondary	Secondary	Tertiary	Employed	Unemployed	Student	Other		
smartphones, tablets or portable devices at work?[1]								
19.1	52.6	84.6	58.9	-	-	-	58.9	Yes
80.9	47.4	15.4	41.1	-	-	-	41.1	No
used in production lines, transport or other services for stock controls) at work?								
12.9	14.3	17.2	15.0	-	-	-	15.0	Yes
87.1	85.7	82.8	85.0	-	-	-	85.0	No
in your work at least once a week?[2]								
27.1	73.9	91.6	80.1	-	-	-	80.1	Exchanging e-mails or entering data into databases
-	49.5	66.0	55.1	-	-	-	55.1	Creating or editing electronic documents
-	24.8	21.0	22.5	-	-	-	22.5	Using social media for work
27.1	21.3	25.5	23.2	-	-	-	23.2	Using of applications to receive tasks or instructions
23.6	29.4	43.8	35.3	-	-	-	35.3	Using occupational specific software (for design, data analysis…)
-	6.1	10.6	7.8	-	-	-	7.8	Developing or maintaining IT systems or software
49.4	17.5	4.3	12.8	-	-	-	12.8	I do not carrry out any of the listed activities in my work
of new software or computerized equipment in the last 12 months?[3]								
-	26.9	36.6	29.8	-	-	-	29.8	Yes
100.0	73.1	63.4	70.2	-	-	-	70.2	No

MODULE 1.Q: ICT

Answer (individuals)	Age						Sex	
	16 - 24	25 - 34	35 - 44	45 - 54	55 - 64	65 - 74	Men	Women
Q5: Have you had to learn to use new software or								
Yes	47.2	33.8	34.9	42.8	35.4	-	36.9	37.5
No	52.8	66.2	65.1	57.2	64.6	-	63.1	62.5
Q7: Which of the following statements best describes your skills								
I need further training to cope well with my duties	-	8.7	12.0	18.3	16.7	-	10.7	15.2
My skills correspond well with my duties	67.6	67.2	65.8	61.1	64.9	-	63.8	66.2
I have the skills to cope with more demanding duties	32.4	24.1	22.2	20.5	18.4	-	25.6	18.7
Q9: How often have you worked								
Every day or almost every day	22.7	20.1	13.7	24.4	15.9	-	21.9	15.9
At least once a week (but not every day)	8.4	8.1	14.0	10.2	7.4	-	9.3	11.5
Less than once a week	19.7	10.0	8.8	11.7	8.8	-	10.9	9.6
Never	49.2	61.8	63.5	53.8	67.9	-	57.9	63.0
Q9.1: When working from work,								
Yes	100.0	90.7	95.7	89.7	93.0	-	90.1	95.7
No	-	9.3	4.3	10.3	7.0	-	9.9	4.3

[1)] The data refer to individuals who are employed and answered in question B1 "Within the last 3 months" or "More than 3 months ago (less than 1 year ago)".

[4)] The data refer to individuals who answered in question Q9 "Every day or almost every day", "At least once a week" or "More than once a week".

usage at work[1)]

In percentages

Educational level			Employment situation				Total	Answer (individuals)
Lower than secondary	Secondary	Tertiary	Employed	Unemployed	Student	Other	Total	
computerised equipment for your job in the last 12 months?								
-	34.3	44.6	37.1	-	-	-	37.1	Yes
100.0	65.7	55.4	62.9	-	-	-	62.9	No
to the use of computers, software or applications for work?								
-	14.4	11.7	12.8	-	-	-	12.8	I need further training to cope well with my duties
100.0	66.3	59.6	64.9	-	-	-	64.9	My skills correspond well with my duties
-	19.2	28.6	22.3	-	-	-	22.3	I have the skills to cope with more demanding duties
from home in the last 12 months?								
-	17.0	23.8	19.1	-	-	-	19.1	Every day or almost every day
-	7.9	14.6	10.3	-	-	-	10.3	At least once a week (but not every day)
13.6	7.8	13.3	10.3	-	-	-	10.3	Less than once a week
86.4	67.3	48.2	60.3	-	-	-	60.3	Never
did you use the Internet for your job?[4)]								
100.0	88.1	96.3	92.6	-	-	-	92.6	Yes
-	11.9	3.7	7.4	-	-	-	7.4	No

MODULE 1.R:

Answers (individuals)	Age						Sex	
	16 - 24	25 - 34	35 - 44	45 - 54	55 - 64	65 - 74	Men	Women
R1: Have you carried out any of the following activities to improve applications in								
Free on-line study or self-study	17.6	13.5	10.4	12.0	8.5	4.3	12.3	11.6
Training paid by yourself	3.0	2.9	1.7	1.5	2.0	0.2	1.9	2.3
Free training provided by public programmes or organisations	2.1	2.0	1.4	1.8	0.8	0.2	1.5	1.7
Training or provided by your employer	1.0	4.7	6.2	5.4	3.1	0.0	3.6	4.6
On-the-job training (by co-workers, supervisors)	1.0	7.0	6.2	7.0	5.5	0.0	5.3	5.2
None of the above	80.4	78.6	80.3	79.0	84.5	95.5	81.2	81.0
R2: In which of the following fields relating to the use of computers,								
On-line marketing or e-commerce	9.6	18.1	23.4	8.1	12.8	6.4	15.6	14.4
Social media (such as google groups, Facebook, Jive)	25.3	24.9	14.0	13.0	9.4	19.4	18.1	17.9
Programming languages, including design or management of websites	29.0	18.1	15.8	13.9	9.6	14.9	15.5	19.7
Data analysis or management of databases	13.1	18.8	32.4	26.5	31.9	19.4	21.6	26.9
Maintenance of computer networks, servers, etc.	10.2	8.1	11.7	4.2	3.2	0.0	12.5	3.0
IT security or privacy management	7.5	9.6	6.4	3.2	7.2	0.0	8.9	4.5
Specific software applications for work	22.2	21.6	23.5	19.3	22.8	18.9	25.5	17.9
Other fields of training realted to the use of computers, software or applications	22.2	32.8	36.9	46.5	48.3	85.7	34.8	39.9

[1] The data refer to individuals who answered in question B1 "Within the last 3 months" or "More than 3 months ago (less than 1 year ago)".

Digital skills[1)]

In percentages

Educational level			Employment situation					Answers (individuals)
Less than secondary	Secondary	Tertiary	Employed	Unemployed	Student	Other	Total	
your skills, relating to the use of computers, software or the last 12 months?								
9.1	11.3	16.6	14.3	12.1	17.4	5.0	12.0	Free on-line study or self-study
0.7	1.7	4.4	2.8	1.5	3.1	0.8	2.1	Training paid by yourself
0.0	1.8	2.6	2.2	0.9	4.6	0.1	1.6	Free training provided by public programmes or organisations
0.0	3.5	9.8	7.6	1.5	0.0	0.1	4.1	Training or provided by your employer
0.8	4.7	11.1	9.9	1.0	0.0	0.8	5.3	On-the-job training (by co-workers, supervisors)
90.9	81.7	69.9	73.4	85.7	79.8	94.1	81.1	None of the above
or applications have you carried out the training in the last 12 months?								
9.9	18.0	11.5	13.9	21.1	18.9	6.5	15.0	On-line marketing or e-commerce
27.0	21.8	8.8	12.4	24.8	53.7	22.4	18.0	Social media (such as google groups, Facebook, Jive)
5.8	16.7	22.5	15.9	22.2	34.0	5.3	17.5	Programming languages, including design or management of websites
5.8	19.5	37.8	28.1	10.5	34.7	10.6	24.2	Data analysis or management of databases
0.0	10.5	5.6	8.5	3.4	13.3	6.9	7.8	Maintenance of computer networks, servers, etc.
0.0	7.1	8.1	8.0	2.0	13.2	0.0	6.7	IT security or privacy management
11.5	22.5	23.6	25.4	10.6	22.3	13.9	21.8	Specific software applications for work
62.6	32.4	38.1	38.6	36.1	6.7	56.8	37.3	Other fields of training realted to the use of computers, software or applications

1.5. QUESTIONNAIRE

USAGE OF INFORMATION AND COMMUNICATION TECHNOLOGIES IN HOUSEHOLDS AND BY INDIVIDUALS

MODULE A: ACCESS TO INFORMATION AND COMMUNICATION TECHNOLOGIES

A1_N Do you or anyone in your household have access to the following devices <u>at home</u>?

(tick all that apply)

a) Desktop, including tablet	
b) Laptop (netbook)	
c) TV	
c1) Satellite TV	
c2) Cable TV	
c3) Digital TV	
c4) IPTV	
d) Radio-receiver (including mobile phone, car radio ...)	
e) Mobile phone	
f) None of the above	

-> Go to A1

A1 Do you or anyone in your household have access to the Internet <u>at home</u>? (by any device)

(tick only one)

Yes		*-> Go to A2*
No		*-> Go to A3_R*
Don't know		*-> Go to B1_N*

A2 What types of Internet do you use <u>at home</u>?

(tick all that apply)

a) Fixed broadband connection	
a1) Broadband connection ADSL (DSL)	
a2) Broadband connection, cable Internet	
b) Mobile broadband connection (3G network) via a mobile phone, smartphone, SIM card, USB key	
c) Dial-up access over telephone line or ISDN	
d) Mobile narrowband connection (2G or GPRS), using SIM card or USB key, mobile phone, smartphone, mobile phone, smartphone modem in laptop	

-> Go to B1_N

A3	What are the reasons for not having access to the Internet <u>at home</u>?

(tick all that apply)

a) **Have access to the Internet elsewhere**	
b) **Don't need the Internet**	
c) **Equipment costs too high**	
d) **Access costs too high (Internet subscription, telephone)**	
e) **Lack of skills**	
f) **Privacy or security concerns**	
g) **Broadband Internet is not available**	
h) **None of the above; other reasons**	

-> Go to B1_N

MODULE B: USE OF COMPUTERS

B1_N	When did you last use a <u>computer</u> (at home, at work or any other place)? *(desktop, laptop, netbook, tablet, excluding smartphone)*

(tick only one)

Within the last 3 months		*-> Go to B2_N*
More than 3 months ago (less than 1 year)		*-> Go to B1*
More than 1 year ago		*-> Go to B1*
Never used it		*-> Go to B1*

B2_N	How often on average have you used a <u>computer</u> in the last 3 months?

(tick only one)

Every day or almost every day	
At least once a week	
Less than once a month	

-> Go to B1

MODULE B: USE OF THE INTERNET

B1	When did you last use the <u>Internet</u>? *(desktop, laptop, mobile phone, smartphone)*

(tick only one)

a) **Within the last 3 months**		*-> Go to B2*
b) **More than 3 months ago (less than 1 year)**		*-> Go to B6*
c) **More than 1 year ago**		*-> Go to D1*
d) **Never used it**		*-> Go to G1*

B2	How often on average have you used the <u>Internet</u> in the last 3 months**?**

(tick only one)

a) **Every day or almost every day**	*-> Go to B2.1*	
b) **At least once a week (but not every day)**	*-> Go to B3*	
c) **At least once a month**	*-> Go to B3*	
d) **Less than once a month**	*-> Go to B3*	

B2.1.	**Did you use the Internet several times during the day?** *Only for respondents who answered in B2 to a) Every day or almost every day*	
	a) Yes	
	b) No	
	-> Go to B3	

B3	**On which of the following devices have you used the Internet in the last three months?**	
	(tick all that apply)	
	a) Desktop computer	
	b) Laptop	
	c) Tablet	
	d) Mobile phone or smartphone	
	e) Other devices (e.g. media or games player, e-book reader, smart watch)	
	-> Go to B4	

B4	**Have you used any of the following mobile devices to access the Internet <u>away from home or work</u> in the last 3 months?**	
	(tick all that apply)	
	a) Mobile phone or smartphone	
	b) Laptop	
	c) Tablet	
	d) Other devices (e.g. media or games player, e-book reader, smart watch)	
	e) Did not access the Internet via any mobile device away from home or work	
	-> Go to B5	

B5	**Which of the following activities have you performed over the Internet <u>for private purposes</u> in the last 3 months?**	
	(tick all that apply)	
	Communication	
	a) Sending/receiving e-mails	
	b) Telephoning over the Internet/video-calls (via webcam) over the Internet (using applications, e.g. Skype and Facetime)	
	c) Participating in social networks (Facebook, Twitter, Instagram, Snapchat, etc.)	
	Access to information	
	d) Finding information about goods and services	
	Using the Internet for entertainment	
	e) Listening to music (radio over the Internet, music streaming)	
	f) Watching streamed TV	
	g) Watching video on demand from commercial services	
	h) Watching video content from sharing services (Youtube, Vimeo)	
	i) Playing or downloading games	
	Health	
	j) Seeking health-related information (e.g. injuries, diseases, nutrition, improving health, etc.)	
	k) Making an appointment with a practitioner via a website or application (e.g. in a hospital or health care centre)	
	Other on-line services	
	l) Selling of goods or services, e.g. via auctions (e.g. eBay)	
	m) Internet banking	
	-> Go to B5.1	

B5.1	Have you used cloud services for storage of files (documents, pictures, music and video files) for private purposes in the last 3 months (e.g: Google drive, Dropbox, Windows One Drive, iCloud, Amazon cloud drive?)

(tick only one)

Yes	
No	

-> Go to B6

B6	Have you used any website or application to book an accommodation (a room, apartment, house, holiday cottage...) or else in the last 12 months?

(tick all that apply)

a) Yes, intermediary websites or applications dedicated to booking accommodation (e.g. AIRBNB)	
b) Yes, other websites and applications (including social networks)	
c) No, I have not	

-> Go to B7

B7	Have you used any website or application to arrange transport services (by car, etc.) or else in the last 12 months?

(tick all that apply)

a) Yes, intermediary websites or applications dedicated to arranging transport services (national examples)	
b) Yes, other websites or applications (including social networks)	
c) No, I have not	

-> Go to B8

B8	Have you obtained paid work using an intermediary websites or applications (e.g. *Upwork*, *TaskRabbit*, *Freelancer*, *Amazon Mechanical Turk*) in the last 12 months? *Websites of employment agencies are excluded.*

(tick only one)

Yes	
No	

If the answer is YES to B8, go to B8.1; otherwise, go to C1.

B8.1.	Could you please specify if the income of this work is:

(tick all that apply)

a) The main source of your income	
b) An additional source of income	

-> Go to C1

MODULE C: USE OF E-GOVERNMENT

C1	In the last 12 months, have you interacted with public authorities or public services <u>over the Internet</u>, for private purposes for the following activities?

(tick all that apply)

a) Obtaining information from websites or applications	
b) Downloading/printing official forms	
c) Submitting completed forms on-line	
d) None of the above	

If the answer is d) None of the above in C1 -> go to C2; otherwise, go to D1

C2	What were the reasons for <u>not submitting completed forms</u> to public authorities <u>over the Internet</u> in the last 12 months?

(tick all that apply)

a) **No need to submit completed forms (whether on-line or in hard copy)**	☐
If the answer is YES to a) -> go to D1; otherwise, go to b)	
b) **There were no such on-line services available (did not exist)**	☐
c) **Lack of skills (didn't know how to use website or use was too complicated)**	☐
d) **Concerns about security and protection of personal data**	☐
e) **Another person did it on my behalf**	☐
f) **Other reasons**	☐

-> Go to D1

MODULE D: USE OF E-COMMERCE

For persons who answered YES to options a) or b) in B1- When did you last use the Internet?

D1	When did you last buy or order goods or services <u>over the Internet</u> for private purposes? *(via website or applications from any device: desktop computer, laptop, mobile phone, smartphone)*

Within the last 3 months	☐	*-> Go to D2*
More than 3 months ago (less than 1 year)	☐	*-> Go to D2*
More than 1 year ago	☐	*-> Go to D6*
Never	☐	*-> Go to D6*

D2	What types of goods or services have you bought or ordered <u>over the Internet</u> in the last 12 months, for private purposes?

(tick all that apply)

a) **Food or groceries**	☐
b) **Household goods (furniture, toys...)**	☐
c) **Pharmaceutical products**	☐
d) **Clothes, sports goods**	☐
e) **Hardware**	☐
f) **Electronic equipment (including cameras)**	☐
g) **Telecommunication services (broadband subscriptions, uploading money on prepaid phone cards...)**	☐
h) **Holiday accommodation (hotel...)**	☐
i) **Other travel arrangements (transport tickets, car hire, etc.)**	☐
j) **Tickets for cultural events**	☐
k) **Films, music**	☐
l) **Books, magazine/newspapers (including e-books)**	☐
m) **E-learning material**	☐
n) **Video games and upgrades, computer software and software upgrades**	☐
o) **Other**	☐

-> Go to D3

D3	From whom have you bought/ordered goods or services <u>over the Internet</u> in the last 12 months?

(tick all that apply)

a) **National sellers**	☐
b) **Sellers from EU countries**	☐
c) **Sellers from the rest of the world**	☐
d) **Country of origin of sellers is unknown**	☐

->If the answer is YES to "Within the last three months"in D1, go to D4; otherwise, go to D6.

D4	How many times have you bought/ordered goods or services <u>over the Internet</u> for private purposes in the last 3 months?	
	For persons who answered "Within the last 3 months" in D1	
	1–2 times	
	3–5 times	
	6–10 times	
	More than 10 times	
	-> Go to D5	

D5	How much have you spent buying/ordering goods or services <u>over the Internet</u> for private purposes (excluding shares or other financial services) in the last 3 months?	
	For persons who answered "Within the last 3 months" in D1	
	Less than 50 euros	
	From 50 to 100 euros	
	From 100 to 500 euros	
	From 500 to 1000 euros	
	More than 1000 euros	
	Don't know	
	-> Go to D6	

D6	Have you carried out any of the following financial activities <u>over the Internet</u> (excluding e-mail) for private purposes in the last 12 months?	
	For persons who answered "Within the last 3 months " in B1	
	(tick all that apply)	
	a) Buying/selling shares, bonds or other investment services	
	b) Buying/selling insurance policies, including those offered as a package together with another service (e.g. travel insurance offered together with a plane ticket)	
	c) Taking a loan from banks or other financial institutions	
	-> Go to E1	

MODULE E: TRUST, SECURITY AND PRIVACY

For persons who answered YES to options a) or b) in B1- When did you last use the Internet?

E1	Have you used the following identification procedure for on-line services (e.g. on-line banking, public service, ordering or buying goods or services over the Internet) for private purposes in the last 12 months?	
	(tick all that apply)	
	a) Simple login with username and password	
	b) Social media login used for other services	
	c) Security token	
	d) Electronic identification certificate or card used with a card reader	
	e) Procedure involving your mobile phone (a code received via a message)	
	f) Single use pin code list (plastic card with codes, scratch codes, etc.) or random characters of a password	
	g) Other electronic identification procedure	
	h) I have not used any electronic identification procedure	
	-> Go to E2	

E2	Do you use a smartphone for private purposes?

(tick only one)

Yes	
No	

If the answer is YES in E2, go to E3; otherwise go to Q1.

E3	Does your smartphone have any kind of security software or service like antivirus, antispam or firewall?

(tick all that apply)

a) Yes, installed automatically or provided with the operating system	
b) Yes, I installed it or subscribed to it or somebody else did it	
c) No	
d) Don't know	

-> Go to E4

E4	Have you ever lost information, documents, pictures or other kind of data on your smartphone as a result of a virus or other hostile type of programmes?

(tick only one)

a) Yes	
b) No	
c) Don't know	

-> Go to E5

E5	When you used or installed an application on your smartphone, have you restricted or refused access to your personal data (e.g. you location, contact list)

(tick only one)

a) Yes, at least once	
b) No	
c) I did know it was possible	
d) Not applicable (I do not use applications)	

-> Go to Q1

MODULE Q: ICT USAGE AT WORK

Q1	Do you use commuters, laptops, smartphones, tablets or other portable devices at work?

(tick only one)

Yes	
No	

-> Go to Q2

Q2	Do you use computerized equipment or machinery such as those used in production lines, transportation or other services (including handheld devices such as those used for stock control) at work?

(tick only one)

Yes	
No	

If the answer is YES in Q1-> go to Q3
If the answers are No in Q1 and YES in Q2-> go to Q4
If the answers are NO in Q1 and NO in Q2-> go to R1

Q3	Do you carry out any of the following activities in your work at least once a week?

(tick all that apply)

a) **Exchanging e-mails or entering data into databases**	
b) **Creating or editing electronic documents**	
c) **Using social media for work**	
d) **Using of applications to receive tasks or instructions (excluding e-mails)**	
e) **Using occupational specific software (for design, data analysis, processing, etc.)**	
f) **Developing or maintaining IT systems or software**	
g) **I do not carry out any of the listed activities in my work at least once per week**	

-> Go to Q4

Q4	Have your main job tasks changed as a result of the introduction of new software or computerized equipment in the last 12 months?

(tick only one)

Yes	
No	

-> Go to Q5

Q5	Did you have to learn to use new software or computerized equipment for your job in the last 12 months?

(tick only one)

Yes	
No	

-> Go to Q7

Q7	Which of the following statements best describes your skills to the use of computers, software or applications at work?

(tick only one)

a) **I need further training to cope well with my duties**	
b) **My skills correspond well with my duties**	
c) **I have the skills to cope with more demanding duties**	

-> Go to Q9

Q9	How often have you worked <u>from home</u> in the last 12 months?

(tick only one)

a) **Every day or almost every day**	
b) **At least once a week (but not every day)**	
c) **Less than once a week**	
d) **Never**	

For persons who answered to a), b) or c) in Q9 -> *go to Q9.1; otherwise, go to R1.*

Q9.1.	When working from home, did you use the Internet for your job?

(tick only once)

Yes	
No	

-> Go to R1

MODULE R: DIGITAL SKILLS

R1	**Have you carried out any of the following learning activities to improve your skills relating to the use of computers, software or applications in the last 12 months?**

(tick all that apply)

a)	**Free on-line study or self-study**	
b)	**Training paid by yourself**	
c)	**Free training provided by public programmes or organisations (but not by your employer)**	
d)	**Training or provided by your employer**	
e)	**On-the-job training (by co-workers, supervisors)**	

If any of the options from a) to e) is ticked-> go to *R2; otherwise, go to module G.*

R2	**In which of the following fields relating to the use of computers, software or applications have you carried out the training in the last 12 months?**

(tick all that apply)

a)	**On-line marketing or e-commerce**	
b)	**Social media (such as google groups, Facebook, Jive)**	
c)	**Programming languages, including design or management of websites)**	
d)	**Data analysis or management of databases**	
e)	**Maintenance of computer networks, servers, etc.**	
f)	**IT security or privacy management**	
g)	**Specific software applications for work**	
h)	**Other fields of training related to the use of computers, software or applications**	

MODULE G: RESPONSDENT'S BACKGROUND INFORMATION

G1	**Age**	☐☐	*-> Go to G2*

G2	**Sex:**

(tick only ne)

Man	
Woman	

-> Go to G3

G3	**Country of birth**

(tick only one)

a)	**Serbia**	
b)	**EU country**	
c)	**Other country of the rest of the world**	

-> G to G4

G4	**Citizenship**

(tick only one)	
a) Serbian	
b) EU countries	
c) Other country of the rest of the world	
-> Go to G5	

G5	**Educational attainment level**

(tick only one)	
a) Without education	
b) 1–4 grades of primary school	
c) 5–8 grades of primary school	
d) Secondary vocational school, grammar school	
e) Specialisation after secondary school, school for highly qualified workers	
f) High school	
g) Faculty / higher school / academy	
h) Master degree	
i) Doctor degree	
-> Go to G6	

G6	**Employment situation?**

(tick only once)	
a) Employee or self-employed	***-> Go to G6a***	
a1) Employee	
a2) Self-employed	
b) Unemployed	***-> Go to G12***	
c) Student	***-> Go to G12***	
d) Other not in the labour force	***-> Go to G12***	
d1) Retired person	
d2) Disability (permanently disabled)	
d3) Person in compulsory military service	
d4) Housewife	
d5) Other	

G6a	**Type of employment contract?** (this question is for persons who answered employee in G6)

(tick only one)	
Contract of unlimited duration	
Contract of limited duration	
-> Go to G6b	

G6b	**Working hours?** (this question is for persons who answered employee or self-employed in G6)

(tick only one)	
Full-time	
Part-time	
-> Go to G6c	

G6c	Economic sector?

(tick only one)

a) Agriculture, forestry and fishing	☐
b) Mining and quarrying, manufacturing	☐
c) Construction	☐
d) Wholesale and retail trade, transport, accommodation and food service activities	☐
e) Information and communication	☐
f) Financial and insurance activities	☐
g) Real estate activities	☐
h) Professional, scientific, innovation and technical activities	☐
i) Public administration and defence, compulsory social work activities, education,	☐
j) Other service activities	☐

-> Go to G7

G7	Occupation?

(tick only once)

a) ICT specialists	☐
b) Managers, specialists, administrative staff and other	☐
c) Farmers, craftsmen and similar occupations	☐

-> Go to G12

G12	Number of household members	☐☐	*-> Go to G13*

G13	Of which, number of children aged under 18	☐☐	*-> Go to G14*

G14	Household income (average net monthly income)

(tick only one)

a) Up to 300 euros	☐
b) From 300 to 600 euros	☐
c) More than 600 euros	☐

USAGE OF INFORMATION AND COMMUNICATION TECHNOLOGIES IN THE REPUBLIC OF SERBIA, 2018

ENTERPRISES

2.1. METHODOLOGY

Survey period	• The survey was carried out from from 16 April to 30 April 2018
Type of survey	• Telephone interview
Sample size	• 1781 enterprises
Target population[1]	• Enterprises with 10 and more employees • Section C: Manufacturing • Section D and E: Electricity, gas, steam and air conditioning supply; Water supply, sewerage • Section F: Construction • Section G: Wholesale and retail trade, repair of motor vehicles • Section H: Transportation, storage and communications • Section I: Accommodation and food service activities • Section J: Information and communications • Sections L and M: Real estate activities; Professional, scientific and technical activities • Section N and Division 95: Administrative and support service activities; Repair of computers • Banking and insurance companies
Type of sample	• Stratified sample
Geographic scope	• Territory of the Republic of Serbia (without AP Kosovo and Metohija)

[1] Since 2011, the Classification of Activities has been in use according to the Regulation of the Classification of Activities („Official Journal of the RS", No 54/10). This classification is harmonised with NACE rev.2.

2.2. SAMPLE

The survey on ICT usage in enterprises was carried out on a representative sample of 1781 enterprises on the territory of the Republic of Serbia. The response rate was 84.7% (1509 enterprises).

Sample (enterprises)		Size class			Region			Total
		Small (10-49)	Medium (50-249)	Large (250+)	Central Serbia	Vojvodina	Belgrade	
Activities	Manufacturing	236	206	136	264	171	143	578
	Electricity, gas, steam and air conditioning supply; Water supply, sewerage	28	34	24	48	21	17	86
	Construction	30	32	29	35	24	32	91
	Wholesale and retail trade	90	70	49	84	55	70	209
	Transportation and storage	30	29	25	31	23	30	84
	Accommodation and food service activities	68	31	3	37	30	35	102
	Information and communication	74	40	16	36	24	70	130
	Real estate activities; Professional, scientific and technical activities	55	45	12	33	23	56	112
	Administrative and support service activities; Repair of computers	57	31	29	33	23	61	117
Number		668	518	323	601	394	514	1509
Percentage		44,27	34.33	21.40	39.83	26.11	34.06	100

2.3. MAIN FINDINGS

2.3.1. Computers and computer networks in enterprises

The results of the survey indicate that 99.3% of enterprises on the territory of the Republic of Serbia use a computer for business.

> 99.3% of enterprises use computers for business

Chart 2.1. Does your enterprise use computers for business purposes?

| 97.8% | 97.8% | 98.1% | 98.7% | 100.0% | 100.0% | 100.0% | 99.8% | 100.0% | 99.3% |
| 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
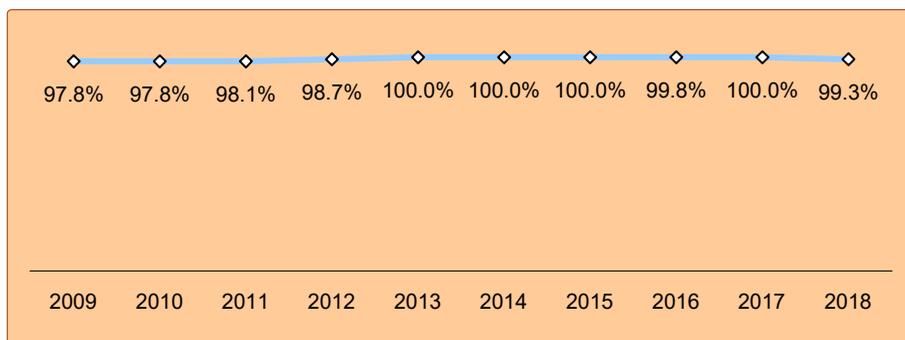
In 29.9% of enterprises from 1 to 24% of employees use a computer at least once a week, while in 37.0% of enterprises 75-100% of employees use a computer at least once a week.

Chart 2.2. Enterprises by the percentage of employees using a computer at least once a week

- 50 - 74% employees 15.2%
- 75 - 100% employees 37.0%
- 25 - 49% employees 18.0%
- 1 - 24% employees 29.9%
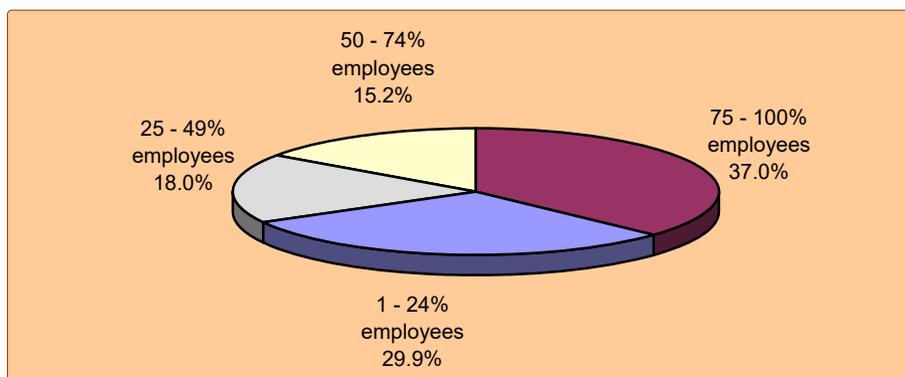
Chart 2.3. Does your enterprise employ ICT specialists?

2018	20.7% 79.3%

YES   NO
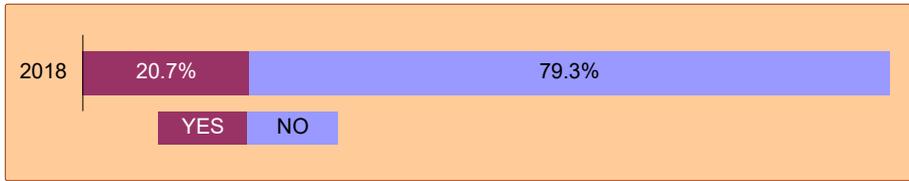
The survey indicates that 20.7% of enterprises employ ICT specialists. 76.5% of large enterprises employ ICT specialists, this percentage being 14.5% for small enterprises.

2.3.2. Internet enterprises

In the Republic of Serbia, 99.8% of enterprises have an Internet connection.

> 99.8% of enterprises have an Internet connection

Chart 2.4. Does your enterprise have access to the Internet?

94.5%	96.8%	97.2%	97.7%	99.6%	100.0%	99.1%	99.8%	99.7%	99.8%
2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
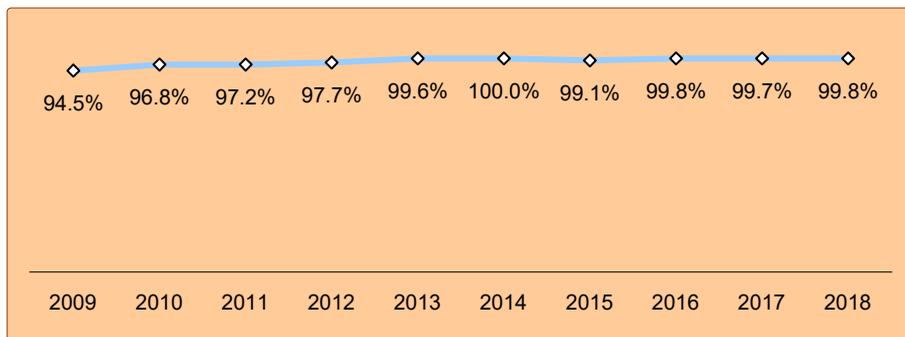
In 33.7% of enterprises from 1 to 24% of employees use the Internet at least once a week, while in 32.6% of enterprises 75-100% of employees use the Internet at least once a week.

**Chart 2.5. Employees by the percentages of employees using
the Internet at least once a week**

50 - 74% employees 16.3%

75 - 100% employees 32.6%

25 - 49% employees 17.4%

1 - 24% employees 33.7%
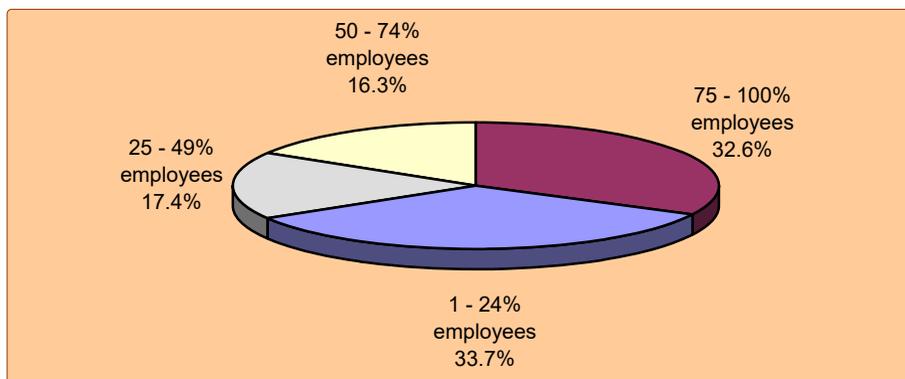
As regard the type of connection, enterprises were given the possibility to choose several answers among the proposed ones.

The results indicate that of the total number of enterprises having an Internet connection, 98.8% have broadband Internet connection.

> 98.8% of enterprises have a broadband Internet connection

Chart 2.6. Broadband Internet in enterprises
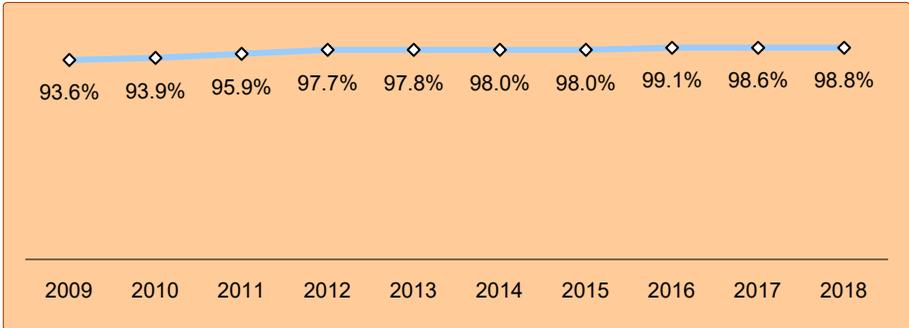
2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
93.6%	93.9%	95.9%	97.7%	97.8%	98.0%	98.0%	99.1%	98.6%	98.8%

Chart 2.7. What is the maximum contracted speed of the Internet connection in your enterprise?

At least 10, but less than 30 Mbit/s	49.8%
At least 30, but less than 100 Mbit/s	25.8%
At least 2, but less than 10 Mbit/s	16.7%
At least 100 Mbit/s	7.1%
Less than 2 Mbit/s	0.5%
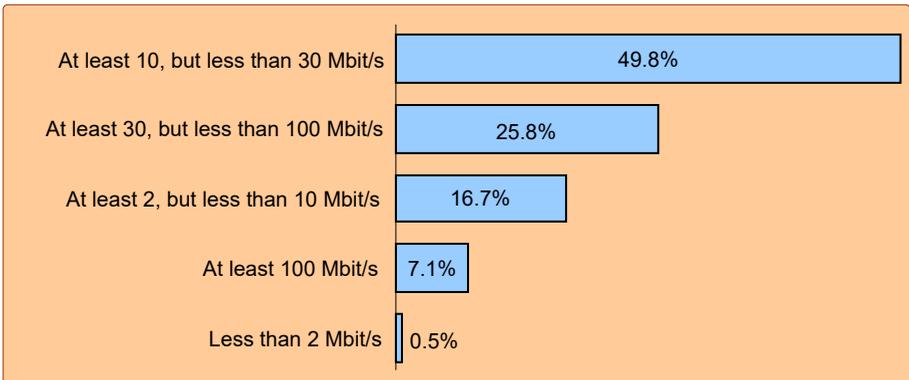
2.3.3. Use of mobile Internet for business purposes

On the territory of the Republic of Serbia 75.4% of enterprises use a mobile broadband Internet connection (smartphone, laptop, tablet, etc.).

Chart 2.8. Does your enterprise provide portable devices that allow a mobile connection to the Internet using mobile telephone networks, for business purposes?

2018	75.4%	24.6%

YES   NO
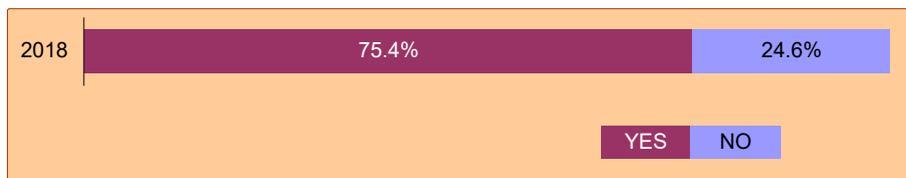
75.4% of enterprises provide portable devices that allow a mobile connection to the Internet using mobile telephone networks

The analysis of enterprises by size indicates that large enterprises are the major users of mobile broadband Internet connections via portable devices (87.9%).

In 43.6% of enterprises from 1 to 24% of employees use portable devices for business purposes, while in 20.6% of enterprises from 75 to 100% of employees use portable devices for business purposes.

Chart 2.9. Enterprises by the percentage of employees using portable devices for business purposes?

25 - 49% employees 17.9%

50 - 74% employees 17.9%

1 - 24% employees 43.6%

75 - 100% employees 20.6%
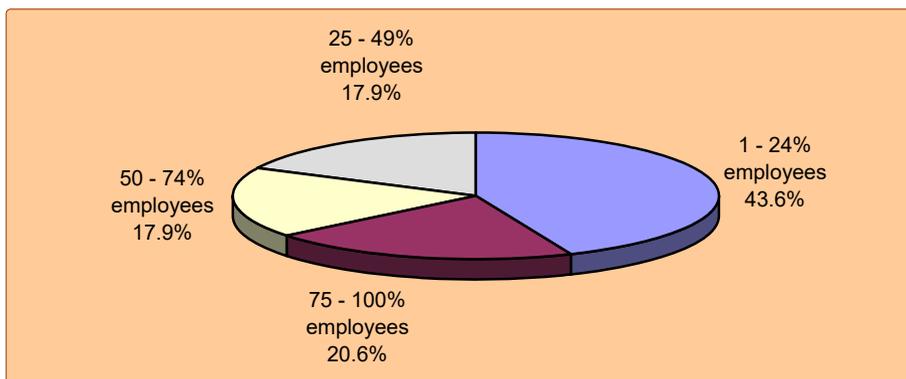
2.3.4. Website

There are 82.6% of enterprises which have a Website, it is being an increase of 2.2% in relation to 2017 and of 1.8% in relation to 2016.

When looking at the structure of enterprises by size classes, the following results are obtained:

- 94.8% of large enterprises have a website;
- 90.4% of medium enterprises have a website;
- 80.1% of small enterprises have a website.

> 82.6% of enterprises have a website

There are differences depending on the territory. In Belgrade there are 89.0% of enterprises that have a Website, in Vojvodina 83.2%, and in Central Serbia 75.0%.

Chart 2.10. Does you enterprise have its own website?

Year	YES	NO
2018	82.6%	17.4%
2017	80,4%	19.6%
2016	80.8%	19.2%
2015	75.2%	24.8%
2014	74.0%	26.0%
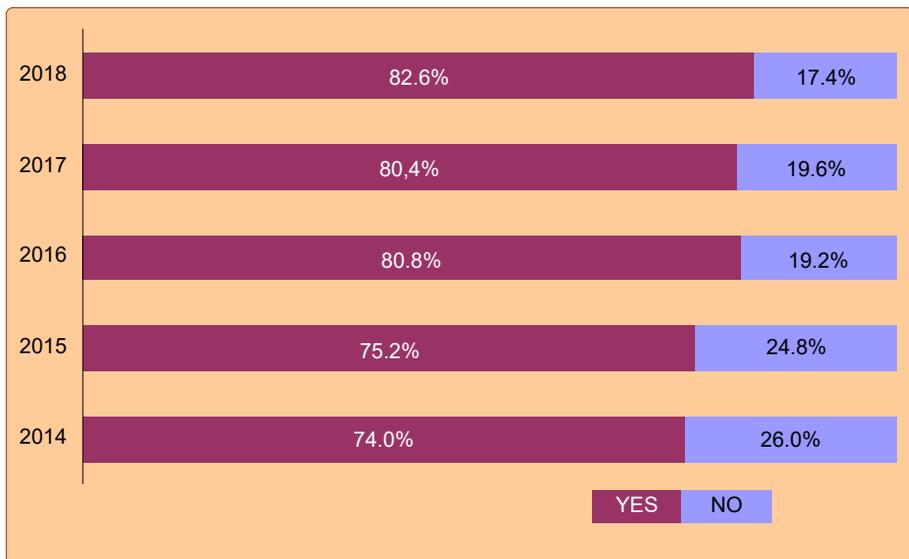
Website available in enterprises, by activities:

- Information and communication (93.7%)
- Administrative and support service activities; Repair of computers (85.6%)
- Real estate activities; Professional, scientific and technical activities (92.0%)
- Manufacturing (85.3%)
- Accommodation and food service activities (92,0%)
- Wholesale and retail trade (79.1%)
- Construction (72.9%)
- Electricity, gas, steam and air conditioning supply; Water supply, sewerage (74.6%)
- Transportation and storage (74.5%)

Enterprises having a Website provide mostly the following services:

- Personalised content in the Website for regular/repeated visitors (86.0%);
- Description of goods or services, price list (82.6%);
- Possibility for visitors to customise or design the products (67.6%).

Chart 2.11. Does your enterprise provide any of the following services via its website?
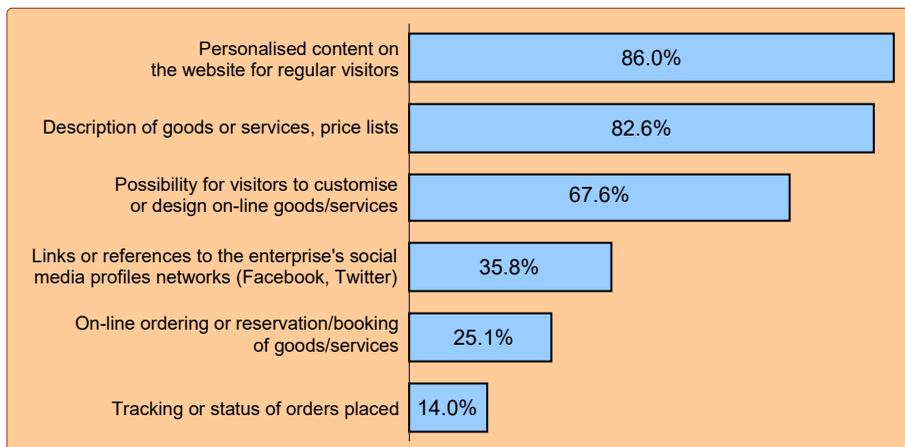
2.3.5. E-commerce

In 2017, 41.9% of enterprises in the Republic of Serbia ordered goods/services over the Internet, it is being a decrease of 0.5% in relation to 2016 and an increase of 1.6% compared to 2015.

When looking at the structure of enterprises by size classes, the following results are obtained.

- 56.7% of large enterprises ordered goods/services over the Internet;
- 43.6% of medium enteprises ordered goods/services over the Internet;
- 40.7% of small enterprises ordered goods/services over the Internet.

41.9% of enterprises ordered goods/services over the Internet in 2017

Chart 2.12. Did your enterprise order goods/services over the Internet?

Year	YES	NO
2017	41.9%	58.1%
2016	41.4%	58.6%
2015	41.0%	59.0%
2014	40.3%	59.7%
2013	40.4%	59.6%
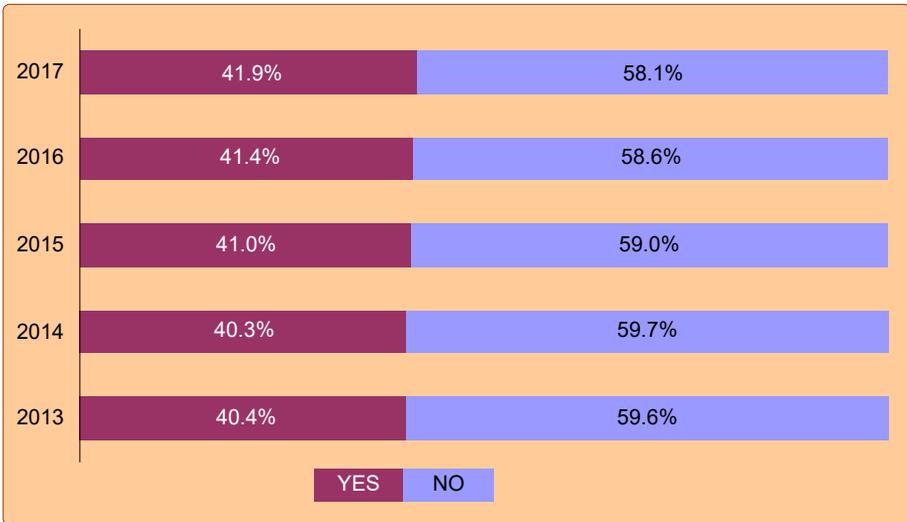
. The results of the survey indicate that only 26.3% of enterprises received, during 2017, orders (excluding manually-typed e-mails) over the Internet

> 26.3% of enterprises received orderes placed over the Internet in 2017

Chart 2.13. Did your enterprise receive orders placed over the Internet?

Year	YES	NO
2017	26.3%	73.7%
2016	23.8%	76.2%
2015	23.3%	76.7%
2014	22.9%	77.1%
2013	21.2%	78.8%
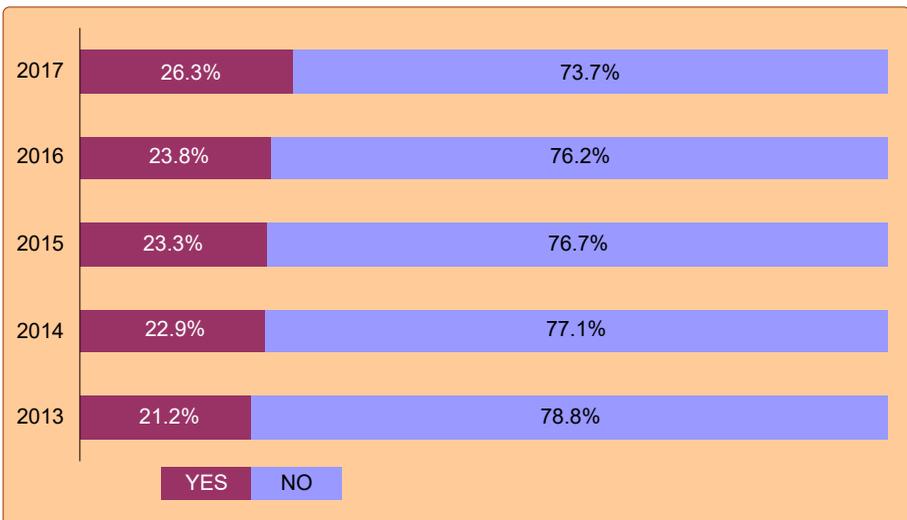
When observing the structure of enterprises by size classes, the following results are obtained:

- 34.3% of large enterprises received orders placed over the Internet;
- 26.3% of medium enterprises received orders placed over the Internet;
- 25.8% of small enterprises received orders placed over the Internet.

To the question about the percentage of the total turnover resulting from orders received over the Internet, the enterprises gave the following answers:

- „Less than 24%" (72.5% of enterprises)
- „More than 24%, and less than 50%" (14.2% of enterprises)
- „More than 50%, and less than 75%" (7.8 % of enterprises)
- „75 % and over" (5.5% of enterprises).

**Chart 2.14. Percentage of the total turnover in 2017
resulting from orders received over the Internet**
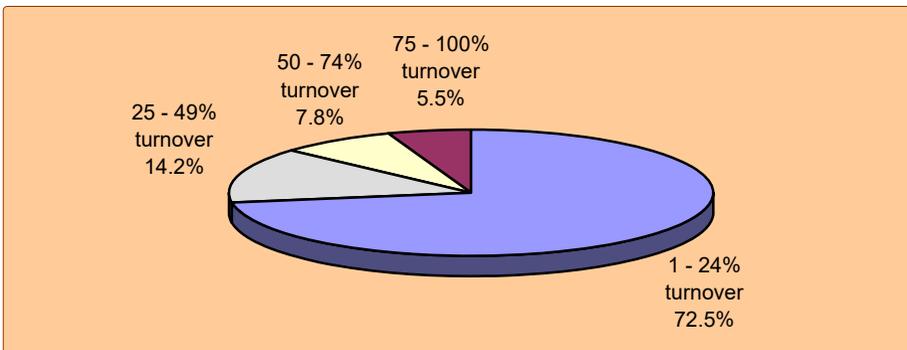
2.3.6. Enterprises and social media

Social media are growing more available in enterprises for business use, which is backed by the results of the survey indicating that 39.7% of enterprises used any of the social media for business.

**Chart 2.15. Did your enterprise use any of the following
social media for business purposes?**
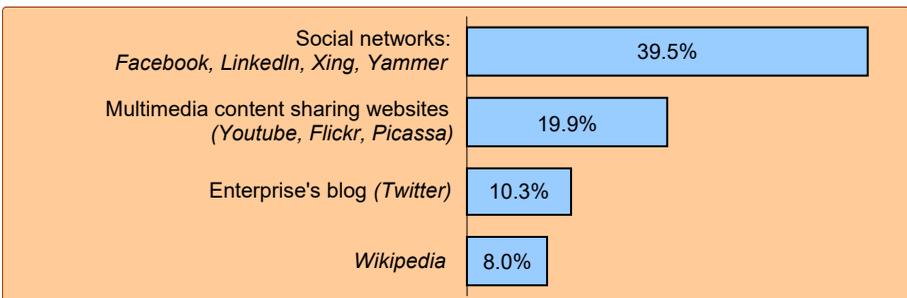
2.3.7. Use of cloud computing services

There are 15.5% of enterprises that pay cloud computing services over the Internet.

Cloud services imply ICT services accessed over the Internet for the purpose of using software, storage space, etc. The services have the following characteristics:

- delivered from servers and service providers;
- can be used on-demand by the user;
- are paid per user, capacity used.

15.5% of enterprises pay cloud computed services

Chart 2.16. Does your enterprise pay cloud computing services over the Internet?
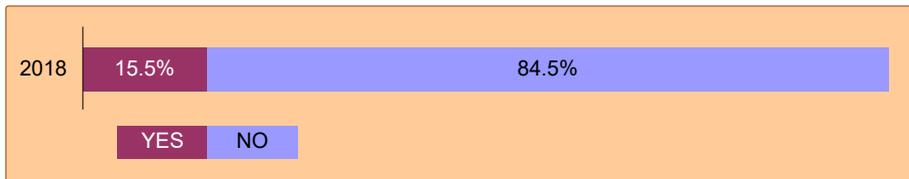
2.4. SURVEY FINDINGS

MODULE 2.A: Use of computers

A1: Does your enterprise use computers for business purposes?

in percentages

Enterprises		Size class			Region			Total
		Small (10-49)	Medium (50-249)	Large (250+)	Central Serbia	Vojvodina	Belgrade	
YES								
Activity	Manufacturing	98.0	100.0	100.0	100.0	97.7	96.7	98.6
	Electricity, gas, steam and air conditioning supply; Water supply, sewerage	96.4	100.0	100.0	100.0	100.0	87.0	98.3
	Construction	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Wholesale and retail trade	100.0	95.2	100.0	100.0	97.6	100.0	99.4
	Transportation and storage	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Accommodation and food service activities	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Information and communication	100.0	96.9	100.0	100.0	100.0	99.2	99.5
	Real estate activities; Professional, scientific and technical activities	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Administrative and support service activities; Repair of computers	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total		99.4	99.0	100.0	100.0	98.6	99.2	99.3

A2: Percentage of employees who use computers for business purposes[1]

in percentages

	Enterprises						
	Size class			Region			Total
	Small (10-49)	Medium (50-249)	Large (250+)	Central Serbia	Vojvodina	Begrade	
1- 24%	29.2	33.4	26.4	38.2	33.6	19.8	29.9
25- 49%	17.1	20.1	26.3	20.5	22.3	13.1	18.0
50-74%	14.4	17.9	17.6	16.2	13.8	15.1	15.2
75-100%	39.3	28.6	29.7	25.1	30.3	52.1	37.0

[1] The results in table A2 refer to enterprises that answered YES in question A1.

MODULE 2.B: ICT specialists and skills

B1: Does your enterprise employ ICT specialists?

in percentages

Enterprises		Size class			Region			Total
		Small (10-49)	Medium (50-249)	Large (250+)	Central Serbia	Vojvodina	Belgrade	
YES								
Activity	Manufacturing	10.2	31.2	73.1	16.5	19.4	22.6	18.8
	Electricity, gas, steam and air conditioning supply; Water supply, sewerage	11.0	32.7	89.5	24.7	35.0	22.7	28.0
	Construction	9.7	33.2	74.6	4.4	18.8	25.3	16.4
	Wholesale and retail trade	11.1	28.2	78.7	11.5	14.9	17.2	14.8
	Transportation and storage	3.4	19.6	96.7	5.1	3.2	22.9	9.8
	Accommodation and food service activities	10.0	41.2	25.0	11.6	4.4	17.5	13.5
	Information and communication	72.8	81.0	90.9	61.5	56.4	84.4	74.8
	Real estate activities; Professional, scientific and technical activities	18.9	77.8	92.5	28.2	22.9	30.0	28.4
	Administrative and support service activities; Repair of computers	26.4	19.9	54.5	28.9	5.1	37.2	27.7
Total		14.5	35.1	76.5	15.1	18.0	27.6	20.7

B2: Did your enterprise provide any type of training to develop ICT related skills for employees for ICT skills improvements during 2017?

in percentages

Enterprises		Size class			Region			Total
		Small (10-49)	Medium (50-249)	Large (250+)	Central Serbia	Vojvodina	Belgrade	
Training for ICT specialists[1]								
Activity	Manufacturing	38.1	55.2	68.0	43.9	56.5	55.1	50.9
	Electricity, gas, steam and air conditioning supply; Water supply, sewerage	50.0	38.9	46.8	49.3	29.5	77.1	43.3
	Construction	-	17.4	39.0	12.0	13.5	12.6	12.7
	Wholesale and retail trade	71.2	13.8	61.3	36.9	64.9	61.4	56.2
	Transportation and storage	-	64.8	70.7	63.9	36.7	45.9	48.8
	Accommodation and food service activities	-	32.3	-	-	-	9.2	7.7
	Information and communication	64.7	82.3	70.0	62.4	81.8	66.0	67.9
	Real estate activities; Professional, scientific and technical activities	17.8	36.6	67.6	41.6	33.6	22.6	27.5
	Administrative and support service activities; Repair of computers	23.3	13.3	37.4	51.8	55.6	16.6	24.5
Total		43.4	42.4	61.2	43.5	52.8	43.9	45.7
Training for other persons employed								
Activity	Manufacturing	18.3	27.4	52.0	18.1	30.8	21.4	22.3
	Electricity, gas, steam and air conditioning supply; Water supply, sewerage	14.8	38.0	33.8	22.2	30.0	39.2	26.9
	Construction	4.3	19.1	50.4	5.3	15.4	7.8	8.6
	Wholesale and retail trade	28.2	27.6	45.6	14.3	24.8	41.2	28.6
	Transportation and storage	10.3	20.1	58.8	3.1	2.8	39.7	13.8
	Accommodation and food service activities	19.9	28.1	25.0	18.0	11.7	25.2	20.8
	Information and communication	40.4	58.7	54.5	26.7	43.3	48.6	43.8
	Real estate activities; Professional, scientific and technical activities	25.7	35.9	62.5	17.0	27.9	30.4	27.7
	Administrative and support service activities; Repair of computers	8.1	27.5	22.5	21.9	9.7	11.8	12.9
Total		20.8	28.8	47.5	15.1	24.1	30.4	23.3

[1] The data refer to enterprises that employ ICT specialists.

B3: Did your enterprise recruit or try to recruit ICT specialists during 2017?

in percentages

Enterprises		Size class			Region			Total
		Small (10-49)	Secondary (50-249)	Large (250+)	Central Serbia	Vojvodina	Begrade	
YES								
Activity	Manufacturing	4.0	13.4	34.0	6.4	8.6	10.3	7.9
	Electricity, gas, steam and air conditioning; Water supply, sewerage	5.5	-	17.2	-	9.3	8.0	4.2
	Construction	6.8	2.5	19.4	-	2.1	14.0	6.3
	Wholesale and retail trade	4.6	13.0	48.9	4.7	9.8	6.5	6.7
	Transportation and storage	-	12.7	51.6	2.4	0.4	10.2	4.1
	Accommodation and food service activities	3.8	16.8	-	1.6	5.7	6.6	5.2
	Information and communication	47.4	61.1	59.1	58.1	31.6	53.7	50.0
	Real estate activities	2.4	33.8	35.0	10.9	3.7	7.6	7.4
	Administrative and support service activities	5.1	6.9	29.4	12.6	2.8	8.3	7.6
Total		6.2	14.2	36.1	6.1	7.9	12.1	8.9

B4: During 2017, did your enterprise have vacancies for ICT specialists that were difficult to fill?[1]

in percentages

Enterprises		Size class			Region			Total
		Small (10-49)	Medium (50-249)	Large (250+)	Central Serbia	Vojvodina	Belgrade	
YES								
Activity	Manufacturing	52.1	38.3	56.1	47.2	45.0	50.3	47.5
	Electricity, gas, steam and air conditioning supply; Water supply, sewerage	-	-	41.4	-	10.6	35.0	16.0
	Construction	-	-	15.6	-	-	1.6	1.5
	Wholesale and retail trade	42.2	47.5	43.8	63.6	4.4	66.0	43.7
	Transportation and storage	-	67.1	38.7	69.4	100.0	44.9	52.3
	Accommodation and food service activities	-	32.5	-	-	18.5	10.8	11.6
	Information and communication	56.4	59.2	69.2	61.0	78.6	52.5	57.6
	Real estate activities; Professional, scientific and technical activities	-	46.8	28.6	8.0	66.7	36.5	32.6
	Administrative and support service activities; Repair of computers	11.5	-	67.4	-	100.0	31.2	29.0
Total		40.7	44.8	50.3	49.2	35.0	44.4	43.5

[1] The results refer only to enterprises that answered YES in question B3.

**B5A: Indicate who mainly performed ICT functions
in your enterprise during 2017 (enterprise's employees)**

in percentages

Enterprises		Size class			Region			Total
		Small (10-49)	Medium (50-249)	Large (250+)	Central Serbia	Vojvodina	Belgrade	
Maintenance of ICT structure								
Activity	Manufacturing	23.6	40.1	73.1	28.2	30.0	35.1	30.4
	Electricity, gas, steam and air conditioning supply; Water supply, sewerage	30.1	31.4	78.4	22.9	41.3	74.3	35.2
	Construction	18.0	37.3	69.5	18.6	28.8	24.6	23.4
	Wholesale and retail trade	21.6	23.1	73.3	24.9	16.6	25.3	23.1
	Transportation and storage	12.8	21.5	82.0	9.8	12.9	31.0	17.0
	Accommodation and food service activities	14.8	30.3	75.0	10.0	6.7	23.5	17.0
	Information and communication	71.6	80.6	90.9	64.2	65.5	79.0	73.8
	Real estate activities; Professional, scientific and technical activities	13.4	68.9	79.2	40.9	32.0	14.7	22.3
	Administrative support activities; Repair of computers	31.5	33.5	48.8	39.2	21.0	37.1	33.4
Total		23.1	37.8	72.8	25.6	25.6	31.2	27.8
Support for business software (Word, Excel...)								
Activity	Manufacturing	31.6	50.4	77.1	37.1	39.5	41.0	38.7
	Electricity, gas, steam and air conditioning supply; Water supply, sewerage	45.3	39.2	89.7	47.9	42.0	55.8	46.7
	Construction	21.5	55.1	72.5	30.7	11.0	39.2	29.7
	Wholesale and retail trade	23.9	37.9	71.4	25.3	31.6	25.0	26.7
	Transportation and storage	29.0	34.9	91.0	15.1	24.9	64.0	32.5
	Accommodation and food service activities	16.5	41.2	75.0	14.9	4.4	26.9	19.7
	Information and communication	65.6	83.6	86.4	64.2	62.9	72.6	69.2
	Real estate activities; Professional, scientific and technical activities	34.2	64.6	79.2	64.2	30.2	35.5	39.2
	Administrative support activities; Repair of computers	34.9	47.3	54.8	42.9	26.1	43.3	38.9
Total		29.7	48.7	76.2	33.3	32.3	38.3	35.0

B5A: Indicate who mainly performed ICT functions in your enterprise during 2017 (enterprise's employees)

in percentages

Enterprises	Size class			Region			Total
	Small (10-49)	Medium (50-249)	Large (250+)	Central Serbia	Vojvodina	Belgrade	
Development of business information systems (ERP, CRM)							
Manufacturing	7.1	18.9	29.3	6.6	15.9	15.1	11.2
Electricity, gas, steam and air conditioning supply; Water supply, sewerage	3.7	13.1	29.9	9.3	8.7	20.2	10.3
Construction	2.7	7.6	10.6	8.2	0.4	2.1	3.9
Wholesale and retail trade	5.7	4.5	29.7	4.0	2.9	9.6	6.2
Transportation and storage	3.8	7.6	31.8	2.2	12.5	2.9	5.5
Accommodation and food service activities	2.2	17.0	50.0	4.2	5.7	3.7	4.2
Information and communication	37.7	51.1	50.0	34.6	35.1	43.4	40.2
Real estate activities; Professional, scientific and technical activities	10.4	20.9	7.5	16.2	15.2	9.8	11.9
Administrative support activities; Repair of computers	9.5	8.1	20.3	2.7	16.7	9.5	10.2
Total	7.6	14.9	27.9	6.7	10.8	11.9	9.8
Maintenance for business information systems							
Manufacturing	8.8	20.2	39.8	9.1	19.1	15.2	13.3
Electricity, gas, steam and air conditioning supply; Water supply, sewerage	14.8	15.5	47.5	13.1	25.3	20.2	18.2
Construction	1.3	14.2	30.1	8.3	2.5	3.0	4.8
Wholesale and retail trade	5.3	9.9	47.1	2.2	2.0	13.1	6.9
Transportation and storage	7.2	9.4	51.2	3.4	12.9	14.0	9.4
Accommodation and food service activities	4.5	13.1	50.0	4.2	3.4	7.3	5.8
Information and communication	46.1	65.7	54.5	44.4	44.8	52.3	49.5
Real estate activities; Professional, scientific and technical activities	11.8	35.5	15.0	20.3	15.2	13.9	15.2
Administrative support activities; Repair of computers	13.0	11.5	29.7	4.0	17.8	15.6	14.2
Total	9.1	18.9	40.9	8.0	13.0	15.5	12.2

**B5A: Indicate who mainly performed ICT functions
in your enterprise during 2017 (enterprise's employees)**

in percentages

Enterprises		Size class			Region			Total
		Small (10-49)	Medium (50-249)	Large (250+)	Central Serbia	Vojvodina	Belgrade	
Development of web solutions								
Activity	Manufacturing	15.5	21.2	38.6	14.5	19.1	24.6	18.2
	Electricity, gas, steam and air conditioning supply; Water supply, sewerage	16.1	28.9	54.7	23.6	19.0	53.0	25.4
	Construction	12.3	14.6	20.7	16.9	23.3	4.1	13.0
	Wholesale and retail trade	19.3	19.8	43.2	9.4	27.3	23.7	20.0
	Transportation and storage	5.9	11.3	54.1	8.7	12.9	4.6	8.7
	Accommodation and food service activities	13.9	13.1	25.0	5.8	7.1	19.8	13.9
	Information and communication	57.7	60.0	54.5	58.6	48.3	60.9	58.0
	Real estate activities; Professional, scientific and technical activities	19.5	37.0	57.5	32.6	20.9	20.6	22.6
	Administrative support activities; Repair of computers	26.1	25.4	28.9	31.7	15.0	29.5	26.2
Total		18.4	22.8	40.8	15.2	21.8	23.7	20.1
Support for web solutions								
Activity	Manufacturing	15.9	21.3	42.6	16.5	22.0	19.4	18.7
	Electricity, gas, steam and air conditioning supply; Water supply, sewerage	13.0	44.9	58.3	26.8	31.3	53.0	31.4
	Construction	12.3	14.6	24.3	16.9	23.3	4.3	13.2
	Wholesale and retail trade	18.9	25.3	44.5	13.9	22.9	23.7	20.3
	Transportation and storage	9.3	11.3	54.5	8.4	12.9	14.4	11.5
	Accommodation and food service activities	10.9	13.1	25.0	5.8	13.1	13.0	11.2
	Information and communication	64.0	62.4	59.1	51.1	65.4	66.3	63.5
	Real estate activities; Professional, scientific and technical activities	19.6	49.3	72.5	29.4	24.5	23.5	24.6
	Administrative support activities; Repair of computers	17.5	25.4	35.4	33.2	16.1	18.9	20.6
Total		18.5	26.0	44.7	17.0	23.3	23.0	20.9

**B5A: Indicate who mainly performed ICT functions
in your enterprise during 2017 (enterprise's employees)**

in percentages

Enterprises		Size class			Region			Total
		Small (10–49)	Medium (50–249)	Large (250+)	Central Serbia	Vojvodina	Belgrade	
Security and protection of data								
Activity	Manufacturing	21.3	36.7	66.0	27.3	29.5	25.7	27.5
	Electricity, gas, steam and air conditioning supply; Water supply, sewerage	35.0	30.2	89.5	39.2	29.0	59.3	38.0
	Construction	4.0	38.4	51.2	17.8	8.8	9.4	12.3
	Wholesale and retail trade	16.2	30.2	62.1	15.6	15.0	23.8	19.0
	Transportation and storage	5.6	17.3	68.2	9.8	2.8	17.5	10.0
	Accommodation and food service activities	20.4	22.6	75.0	10.0	12.7	28.8	21.1
	Information and communication	73.3	80.4	81.8	61.1	69.9	80.0	74.8
	Real estate activities; Professional, scientific and technical activities	19.3	64.4	79.2	56.0	22.5	20.5	26.6
	Administrative support activities; Repair of computers	29.7	37.4	49.1	28.5	26.1	37.0	32.8
Total		19.9	37.2	65.9	24.0	21.8	27.7	24.9

**B5B: Indicate who mainly performed ICT functions in
your enterprise during 2017 (external persons)**

in percentages

Enterprises	Size class			Region			Total
	Small (10-49)	Secondary (50-249)	Large (250+)	Central Serbia	Vojvodina	Belgrade	
Maintenance of ICT infrastructure							
Manufacturing	76.4	59.6	26.9	71.6	70.0	64.9	69.6
Electricity, gas, steam and air conditioning supply; Water supply, sewerage	67.5	68.6	21.6	75.1	58.7	25.7	63.7
Construction	82.0	62.7	30.5	81.4	71.2	75.4	76.6
Wholesale and retail trade	76.0	76.9	26.7	74.4	75.9	74.7	74.9
Transportation and storage	83.3	78.5	18.0	82.4	87.1	69.0	79.9
Accommodation and food service activities	85.2	69.7	25.0	90.0	93.3	76.5	83.0
Information and communication	25.5	19.4	9.1	31.2	34.5	18.4	23.9
Real estate activities; Professional, scientific and technical activities	86.6	31.1	20.8	59.1	68.0	85.3	77.7
Administrative and support service activities; Repair of computers	64.5	66.5	51.2	60.8	70.1	61.7	63.7
Total	75.5	62.0	27.2	73.3	72.0	68.6	71.1
Support to office software (Word, Excel)							
Manufacturing	64.8	47.8	21.6	59.6	57.7	56.3	58.3
Electricity, gas, steam and air conditioning supply; Water supply, sewerage	51.0	60.8	10.3	52.1	58.0	29.2	51.5
Construction	65.9	42.4	27.5	61.2	57.0	60.8	60.1
Wholesale and retail trade	69.5	51.1	26.5	71.6	52.2	70.0	66.2
Transportation and storage	64.9	65.1	9.0	72.9	75.1	36.0	62.6
Accommodation and food service activities	77.4	55.2	25.0	83.2	89.6	65.6	74.5
Information and communication	20.0	16.4	13.6	25.0	22.2	16.6	19.2
Real estate activities; Professional, scientific and technical activities	63.0	29.9	20.8	35.8	58.3	63.0	57.7
Administrative and support service activities; Repair of computers	53.7	46.3	41.3	53.9	53.6	49.4	51.2
Total	63.8	47.7	22.5	62.4	57.3	57.6	59.2

B5B: Indicate who mainly performed ICT functions in your enterprise during 2017 (external persons)

in percentages

Enterprises		Size class			Region			Total
		Small (10-49)	Secondary (50-249)	Large (250+)	Central Serbia	Vojvodina	Belgrade	
Development of business information systems (ERP, CRM)								
Activity	Manufacturing	48.6	49.4	55.0	44.2	59.2	47.9	49.2
	Electricity, gas, steam and air conditioning supply; Water supply, sewerage	34.7	39.0	55.6	35.2	47.7	27.0	38.6
	Construction	19.4	53.0	62.4	20.2	40.9	26.0	27.4
	Wholesale and retail trade	27.1	60.2	51.3	29.8	35.8	30.6	31.6
	Transportation and storage	31.9	54.5	50.6	22.7	53.7	36.5	36.1
	Accommodation and food service activities	52.3	57.4	50.0	47.0	38.6	60.2	52.8
	Information and communication	17.4	18.0	40.9	13.5	14.0	21.3	18.5
	Real estate activities; Professional, scientific and technical activities	43.1	31.0	55.8	13.0	37.3	50.1	41.6
	Administrative and support service activities; Repair of computers	35.8	39.9	41.0	43.0	32.8	37.1	37.0
Total		35.4	48.6	52.7	34.3	45.4	37.9	38.5
Support for business information systems								
Activity	Manufacturing	54.5	53.0	44.6	50.0	60.7	52.9	53.6
	Electricity, gas, steam and air conditioning supply; Water supply, sewerage	23.7	39.0	35.0	32.9	31.0	27.0	31.5
	Construction	15.6	56.6	54.7	21.9	50.8	13.2	24.9
	Wholesale and retail trade	30.4	57.7	46.8	35.1	37.8	31.1	34.0
	Transportation and storage	30.6	57.7	43.1	26.6	55.3	26.7	35.3
	Accommodation and food service activities	50.5	72.1	50.0	50.4	40.9	58.0	52.9
	Information and communication	17.5	21.3	40.9	9.5	12.8	23.5	19.0
	Real estate activities; Professional, scientific and technical activities	47.9	42.0	48.3	14.5	38.5	57.8	47.1
	Administrative and support service activities; Repair of computers	37.5	44.5	35.5	47.4	23.6	42.6	38.6
Total		37.8	51.6	44.0	38.5	46.4	38.6	40.5

B5B: Indicate who mainly performed ICT functions in your enterprise during 2017 (external persons)

in percentages

Enterprises		Size class			Region			Total
		Small (10-49)	Secondary (50-249)	Large (250+)	Central Serbia	Vojvodina	Belgrade	
Development of web solutions								
Activity	Manufacturing	70.8	65.3	49.1	66.5	70.8	68.7	68.2
	Electricity, gas, steam and air conditioning supply; Water supply, sewerage	39.3	58.4	45.3	44.9	59.0	32.0	48.3
	Construction	52.4	71.6	75.3	59.9	56.8	54.5	56.9
	Wholesale and retail trade	58.5	61.6	48.8	59.2	44.6	66.0	58.6
	Transportation and storage	62.9	78.1	45.9	71.5	63.8	55.7	64.5
	Accommodation and food service activities	76.6	83.2		83.1	76.3	74.0	76.7
	Information and communication	33.0	36.4	40.9	36.2	31.8	33.8	33.8
	Real estate activities; Professional, scientific and technical activities	65.0	51.7	42.5	35.5	65.4	68.9	62.8
	Administrative and support service activities; Repair of computers	47.9	67.4	63.9	46.3	47.5	57.1	52.9
Total		61.1	64.1	50.7	61.7	58.8	62.3	61.2
Support to web solutions								
Activity	Manufacturing	69.7	63.1	44.7	65.3	67.6	68.8	66.7
	Electricity, gas, steam and air conditioning supply; Water supply, sewerage	39.3	44.9	41.7	41.1	46.7	32.0	42.0
	Construction	59.2	69.2	68.0	59.9	54.6	66.5	61.4
	Wholesale and retail trade	59.1	55.8	47.0	56.5	47.6	65.9	58.4
	Transportation and storage	59.4	78.1	45.5	71.8	63.8	45.8	61.7
	Accommodation and food service activities	75.3	83.0		83.1	70.3	74.0	75.5
	Information and communication	26.3	32.4	31.8	41.4	14.6	27.8	27.4
	Real estate activities; Professional, scientific and technical activities	65.5	40.4	27.5	39.6	64.0	66.0	61.3
	Administrative and support service activities; Repair of computers	52.0	70.8	57.4	44.8	46.4	63.3	55.9
Total		61.2	60.0	46.2	60.6	56.7	62.5	60.4

**B5B: Indicate who mainly performed ICT functions in
your enterprise during 2017 (external persons)**

in percentages

Enterprises		Size class			Region			Total
		Small (10-49)	Secondary (50-249)	Large (250+)	Central Serbia	Vojvodina	Belgrade	
Security and protection of data								
Activity	Manufacturing	70.5	58.9	31.8	65.5	67.1	63.8	65.5
	Electricity, gas, steam and air conditioning supply; Water supply, sewerage	58.2	69.8	10.5	58.1	71.0	25.7	58.9
	Construction	78.6	53.5	45.2	76.4	41.3	86.5	72.6
	Wholesale and retail trade	72.5	62.8	28.8	65.9	72.7	72.2	70.3
	Transportation and storage	76.9	82.7	26.1	70.3	77.1	81.7	75.7
	Accommodation and food service activities	74.4	77.4	25.0	84.4	70.6	71.2	74.3
	Information and communication	23.7	19.6	13.6	34.3	30.1	17.2	22.7
	Real estate activities; Professional, scientific and technical activities	71.2	28.3	20.8	37.9	66.1	70.4	64.3
	Administrative and support service activities; Repair of computers	55.7	59.6	43.7	68.3	44.7	56.3	55.4
Total		69.5	58.3	30.1	65.5	65.1	66.6	65.9

MODULE 2.C: Access and use of the Internet

C1: Does your enterprise have access to the Internet?

in percentages

Enterprises		Size class			Region			Total
		Small (10-49)	Medium (50-249)	Large (250+)	Central Serbia	Vojvodina	Belgrade	
YES								
Activity	Manufacturing	99.0	100.0	100.0	98.6	100.0	100.0	99.3
	Electricity, gas, steam and air conditioning supply; Water supply, sewerage	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Construction	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Wholesale and retail trade	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Transportation and storage	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Accommodation and support service activities	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Information and communication	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Real estate activities; Professional, scientific and technical activities	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Administrative support activities; Repair of computers	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total		99.7	100.0	100.0	99.4	100.0	100.0	99.8

C2: Percentage of the persons employed who use the Internet for business purposes[1]

in percentages

	Enterprises							
	Size class			Region			Total
	Small (10-49)	Medium (50-249)	Large (250+)	Central Serbia	Vojvodina	Belgrade	
1- 24%	32.4	38.7	36.2	41.8	37.9	23.6	33.7
25- 49%	16.7	18.5	25.0	20.6	20.0	12.9	17.4
50-74%	16.2	17.3	14.3	17.4	15.3	15.9	16.3
75-100%	34.7	25.4	24.5	20.2	26.9	47.5	32.6

[1] The data refer to enterprises that answered YES in question C1.

C3: Does your enterprise use any type of fixed broadband Internet connection (ADSL, SDSL, VDSL, FTTP, cable Internet, public *WiFi*)?

in percentages

Enterprises		Size class			Region			Total
		Small (10-49)	Medium (50-249)	Large (250+)	Central Serbia	Vojvodina	Belgrade	
					YES				
Activity	Manufacturing	99.2	98.5	98.2	98.5	99.4	99.5	99.0
	Electricity, gas, steam and air conditioning supply; Water supply, sewerage	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Construction	94.1	100.0	96.4	100.0	80.1	99.7	95.3
	Wholesale and retail trade	99.4	100.0	100.0	100.0	100.0	98.8	99.5
	Transportation and storage	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Accommodation and food service activities	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Information and communication	99.0	100.0	95.5	100.0	100.0	98.4	99.0
	Real estate activities; Professional, scientific and technical activities	98.0	92.4	100.0	89.4	100.0	98.3	97.2
	Administrative support service activities; Repair of computers	99.2	100.0	100.0	100.0	97.7	100.0	99.4
Total		98.8	98.9	98.8	99.0	98.0	99.2	98.8

C4: What is your maximum contracted speed of the Internet connection in your enterprise?[1]

in percentages

	Enterprises						
	Size class			Region			Total
	Small (10-49)	Medium (50-249)	Large (250+)	Central Serbia	Vojvodina	Belgrade	
At least 2 Mbit/s	0.5	0.7	-	1.2	0.1	0.2	0.5
At least 2, but less than 10 Mbit/s	18.5	11.1	7.8	19.3	18.4	13.2	16.7
At least 10, but less than 30 Mbit/s	52.3	44.2	28.0	51.5	53.5	46.0	49.8
At least 30, but less than 100 Mbit/s	23.4	32.0	46.0	22.0	23.2	31.0	25.8
At least 100 Mbit/s	5.4	12.0	18.2	6.0	4.8	9.5	7.1

[1] The results refer only to enterprises that answered YES in question C3.

C5: Does your enterprise provide portable devices that allow a mobile connection to the Internet, using mobile telephone networks, for business purposes?

in percentages

Enterprises		Size class			Region			Total
		Small (10-49)	Medium (50-249)	Large (250+)	Central Serbia	Vojvodina	Belgrade	
YES								
Activity	Manufacturing	82.3	87.0	88.9	82.0	86.1	84.7	83.8
	Electricity, gas, steam and air conditioning supply; Water supply, sewerage	55.8	76.3	71.3	58.6	84.3	48.4	66.3
	Construction	74.2	83.8	97.0	83.0	77.9	70.9	76.8
	Wholesale and retail trade	60.7	82.6	96.0	53.7	61.8	73.4	64.2
	Transportation and storage	78.1	84.4	86.7	65.6	88.3	89.3	79.4
	Accommodation and food service activities	52.8	83.6	50.0	57.8	51.4	57.1	56.2
	Information and communication	81.0	85.3	86.4	73.7	81.9	84.2	81.9
	Real estate activities; Professional, scientific and technical activities	87.4	82.1	77.5	92.2	95.9	82.2	86.5
	Administrative support activities; Repair of computers	74.5	83.7	83.2	76.6	48.0	89.6	76.9
Total		72.7	84.2	87.9	71.8	76.7	77.9	75.4

C6: Percentage of the persons employed who use portable devices (provided by the enterprise) for business purposes[1]

in percentages

	Enterprises						
	Size class			Region			Total
	Small (10-49)	Medium (50-249)	Large (250+)	Central Serbia	Vojvodina	Begrade	
1- 24%	38.7	57.2	63.4	49.9	47.9	35.6	43.6
25- 49%	18.5	16.0	16.0	18.7	20.7	15.5	17.9
50-74%	19.8	12.9	9.2	17.0	13.2	21.6	17.9
75-100%	23.0	14.0	11.4	14.4	18.3	27.2	20.6

[1] The results in table C6 refer to enterprises that answered YES in question C5.

C7: Does your enterprise provide portable devices that allow mobile connection via mobile telephone networks for the following business purposes?[1]

Enterprises		Size class			Region			Total
		Small (10-49)	Medium (50-249)	Large (250+)	Central Serbia	Vojvodina	Belgrade	
Access the enterprise's e-mail system								
Activity	Manufacturing	84.9	95.5	93.8	84.5	94.8	87.2	88.1
	Electricity, steam, gas and air conditioning supply; Water supply, sewerage	79.0	75.5	94.8	76.0	83.0	72.3	78.8
	Construction	92.0	91.7	95.8	98.2	69.0	100.0	92.1
	Wholesale and retail trade	94.0	96.9	92.5	97.9	87.0	96.0	94.4
	Transportation and storage	63.8	85.9	100.0	52.8	75.4	79.0	69.0
	Accommodation and food service activities	95.7	82.4	100.0	86.5	91.0	97.4	93.5
	Information and communication	89.9	100.0	100.0	93.5	83.9	94.1	92.0
	Real estate activities; Professional, scientific and technical activities	94.4	86.6	90.3	86.9	87.9	97.0	93.3
	Administrative support service activities; Repair of computers	83.1	77.5	86.8	91.0	64.1	84.4	82.3
Total		87.7	91.8	93.9	86.2	86.4	92.6	88.8
Access and modify enterprise's documents								
Activity	Manufacturing	45.0	50.6	52.4	48.8	43.9	46.2	46.8
	Electricity, steam, gas and air conditioning supply; Water supply, sewerage	39.5	51.6	41.9	43.9	52.2	24.6	45.9
	Construction	64.6	65.1	54.0	59.2	26.5	91.6	64.3
	Wholesale and retail trade	48.0	64.6	60.9	55.6	38.9	54.2	51.0
	Transportation and storage	18.8	44.6	62.4	6.6	42.9	25.4	25.0
	Accommodation and food service activities	67.5	53.6	100.0	51.5	52.0	75.7	65.4
	Information and communication	61.0	65.2	36.8	71.3	48.5	61.9	60.6
	Real estate activities; Professional, scientific and technical activities	55.4	56.7	58.1	56.4	59.1	54.2	55.6
	Administrative support service activities; Repair of computers	38.1	53.5	40.7	58.8	26.5	40.7	41.4
Total		47.9	55.4	52.9	48.9	42.8	54.6	49.6

1) The results in the table refer to enterprises that answered YES in question C5.

C7: Does your enterprise provide portable devices that allow mobile connection via mobile telephone networks for the following business purposes?[1]

Enterprises		Size class			Region			Total
		Small (10-49)	Medium (50-249)	Large (250+)	Central Serbia	Vojvodina	Belgrade	
Use of dedicated business software applications, for orders or sales management, or enterprise's resources planning (ERP)								
Activity	Manufacturing	30.2	35.6	45.9	27.3	35.6	39.2	32.5
	Electricity, steam, gas and air conditioning supply; Water supply, sewerage	14.2	17.6	48.1	23.9	13.4	24.6	19.3
	Construction	33.3	20.4	32.6	41.5	18.1	27.0	30.6
	Wholesale and retail trade	43.4	60.3	59.6	38.1	36.8	55.9	46.6
	Transportation and storage	30.8	34.8	61.9	11.7	50.6	36.3	32.8
	Accommodation and food service activities	49.1	51.7	100.0	38.2	54.7	54.0	49.9
	Information and communication	50.8	59.4	33.3	39.8	40.9	57.6	51.4
	Real estate activities; Professional, scientific and technical activities	29.7	18.3	62.4	17.1	38.0	28.5	28.6
	Administrative support service activities; Repair of computers	20.3	27.7	29.3	27.6	11.5	24.0	22.7
Total		35.0	37.1	47.5	29.6	35.0	42.1	36.0

1) The results in the table refer to enterprises that answered YES in question C5.

C8: Does your enterprise have a website?

in percentages

Enterprises		Size class			Region			Total
		Small (10-49)	Secondary (50-249)	Large (250+)	Central Serbia	Vojvodina	Belgrade	
YES								
Activity	Manufacturing	83.4	89.2	92.9	81.2	87.1	91.6	85.3
	Electricity, gas, steam and air conditioning supply; Water supply, sewerage	57.0	87.6	100.0	69.8	78.7	85.0	74.6
	Construction	68.5	86.3	95.5	76.8	70.1	71.1	72.9
	Wholesale and retail trade	77.3	88.3	97.5	67.4	78.1	88.3	79.1
	Transportation and storage	69.7	92.6	100.0	60.3	98.4	69.6	74.5
	Accommodation and food service activities	91.6	100.0	25.0	90.0	94.0	92.1	92.0
	Information and communication	92.7	98.4	95.5	97.2	88.5	94.4	93.7
	Real estate activities; Professional, scientific and technical activities	90.7	99.0	100.0	69.0	87.6	99.2	92.0
	Administrative support service activities; Repair of computers	81.9	96.2	93.7	72.4	62.5	99.4	85.6
Total		80.1	90.4	94.8	75.0	83.2	89.0	82.6

C9: Does your enterprise's website provide the following services (your enterprise as provider of Internet services)?[1]

in percentages

Enterprises		Size class			Region			Total
		Small (10-49)	Secondary (50-249)	Large (250+)	Central Serbia	Vojvodina	Belgrade	
Description of goods or services, price lists								
Activity	Manufacturing	84.6	84.0	78.7	80.7	89.0	84.7	84.1
	Electricity, gas, steam and air conditioning supply; Water supply, sewerage	86.1	94.5	96.3	91.4	89.4	100.0	91.8
	Construction	67.4	62.5	66.9	84.4	38.3	64.7	66.3
	Wholesale and retail trade	82.6	87.8	91.0	80.8	81.0	86.3	83.5
	Transportation and storage	84.7	92.0	89.6	98.8	88.1	69.2	86.4
	Accommodation and food service activities	97.7	81.8	100.0	91.6	100.0	96.1	95.8
	Information and communication	78.7	70.0	71.4	82.9	82.8	73.6	77.0
	Real estate activities; Professional, scientific and technical activities	89.1	71.3	60.0	62.8	100.0	86.2	85.9
	Administrative support service activities; Repair of computers	64.6	91.4	69.1	90.2	95.5	59.6	70.5
Total		82.7	82.6	80.4	82.8	84.4	81.4	82.6
On-line ordering or reservation/booking of goods/services								
Activity	Manufacturing	27.3	21.5	15.5	25.6	25.1	24.2	25.1
	Electricity, gas, steam and air conditioning supply; Water supply, sewerage	6.5	9.5	6.6	4.4	9.7	17.6	8.1
	Construction	14.2	9.9	6.3	1.5	17.8	20.7	12.8
	Wholesale and retail trade	18.6	26.5	45.1	8.8	30.8	22.0	20.5
	Transportation and storage	36.8	39.2	62.4	40.4	27.9	52.2	38.7
	Accommodation and food service activities	49.4	61.2	-	58.7	43.2	49.9	50.7
	Information and communication	29.2	32.8	57.1	11.8	31.4	36.1	30.9
	Real estate activities; Professional, scientific and technical activities	21.8	25.0	28.3	17.4	37.7	19.2	22.4
	Administrative support service activities; Repair of computers	48.6	10.6	4.1	10.3	20.3	46.3	36.5
Total		25.7	23.0	24.5	19.8	27.3	27.8	25.1

[1] The results refer only to enterprises that answered YES in question C8.

**C9: Does your enterprise's website provide the following services
(your enterprise as provider of Internet services)?[1]**

in percentages

Enterprises		Size class			Region			Total
		Small (10-49)	Secondary (50-249)	Large (250+)	Central Serbia	Vojvodina	Belgrade	
Possibility for visitors to customise or design on-line goods or services								
Activity	Manufacturing	77.3	76.8	73.1	70.8	85.8	78.0	76.9
	Electricity, gas, steam and air conditioning supply; Water supply, sewerage	34.2	37.0	72.1	50.3	23.7	48.9	40.4
	Construction	60.4	40.9	63.1	64.9	57.7	46.6	55.9
	Wholesale and retail trade	70.8	75.0	87.7	75.4	58.9	76.3	71.9
	Transportation and storage	55.0	53.2	83.1	65.5	54.1	48.2	56.2
	Accommodation and food service activities	67.0	67.1	100.0	48.2	81.3	70.3	67.1
	Information and communication	61.3	49.5	61.9	40.5	62.8	63.7	59.4
	Real estate activities; Professional, scientific and technical activities	66.8	41.3	60.8	46.0	96.4	56.9	62.8
	Administrative support service activities; Repair of computers	52.9	57.9	44.7	29.6	69.2	53.7	53.1
Total		68.4	63.5	72.2	66.6	70.1	66.8	67.6
Tracking or status of orders placed								
Activity	Manufacturing	10.9	12.3	7.0	10.1	11.3	12.4	11.0
	Electricity, gas, steam and air conditioning supply; Water supply, sewerage	6.5	3.5	18.4	7.3	1.3	17.6	6.5
	Construction	4.3	7.1	-	1.5	14.2	2.7	4.8
	Wholesale and retail trade	11.7	24.8	39.4	14.3	18.2	12.3	14.3
	Transportation and storage	25.8	22.1	39.8	22.8	12.3	49.0	25.9
	Accommodation and food service activities	23.0	35.4	-	28.6	27.3	21.7	24.5
	Information and communication	24.1	12.6	28.6	7.8	23.9	26.1	22.4
	Real estate activities; Professional, scientific and technical activities	14.5	7.7	7.5	6.8	35.1	8.8	13.3
	Administrative support service activities; Repair of computers	20.4	7.0	4.1	2.1	12.9	19.9	16.1
Total		13.8	14.1	16.5	11.3	15.7	14.9	14.0

[1] The results refer only to enterprises that answered YES in question C8.

C9: Does your enterprise's website provide the following services
(your enterprises as provider of Internet services)?[1)]

in percentages

Enterprises		Size class			Region			Total
		Small (10-49)	Secondary (50-249)	Large (250+)	Central Serbia	Vojvodina	Belgrade	
Personalised content on the website for regular visitors								
Activity	Manufacturing	85.1	84.3	72.2	79.4	91.1	84.7	84.1
	Electricity, gas, steam and air conditioning supply; Water supply, sewerage	64.5	87.5	93.6	87.0	72.0	76.3	80.1
	Construction	94.5	68.6	67.9	85.6	89.8	87.7	87.4
	Wholesale and retail trade	91.3	74.9	95.9	95.4	80.9	90.0	89.3
	Transportation and storage	95.1	89.0	78.6	98.1	100.0	76.8	93.0
	Accommodation and food service activities	84.3	89.1	100.0	76.3	83.8	89.0	84.9
	Information and communication	82.2	78.8	95.2	85.4	90.5	78.7	82.2
	Real estate activities; Professional, scientific and technical activities	86.3	65.6	92.5	67.0	88.3	84.7	83.2
	Administrative support service activities; Repair of computers	76.5	92.8	91.7	64.1	84.3	84.2	81.4
Total		87.6	80.6	81.9	84.6	87.9	85.9	86.0
Links and references to the enterprise's social media profiles **(*Facebook, Twitter*)**								
Activity	Manufacturing	25.7	38.5	41.0	28.2	30.4	32.3	29.9
	Electricity, gas, steam and air conditioning supply; Water supply, sewerage	22.7	23.4	58.3	10.3	42.3	52.5	27.5
	Construction	19.6	33.2	23.3	19.9	31.1	21.3	22.9
	Wholesale and retail trade	33.1	56.6	60.2	39.3	40.5	34.0	37.0
	Transportation and storage	17.2	30.3	48.8	38.3	16.8	8.0	21.4
	Accommodation and food service activities	65.7	70.7	100.0	65.3	64.9	67.4	66.4
	Information and communication	66.4	71.4	90.5	66.5	77.0	66.0	68.2
	Real estate activities; Professional, scientific and technical activities	27.9	45.0	55.0	34.7	56.6	23.6	31.0
	Administrative support service activities; Repair of computers	63.5	47.6	39.9	51.1	53.9	60.5	58.0
Total		33.2	42.8	48.0	33.0	37.8	36.7	35.8

[1)] The results refer only to enterprises that answered YES in question C8.

C10: Does your enterprise pay to advertise on the Internet?

in percentages

Enterprises		Size class			Region			Total
		Small (10–49)	Secondary (50–249)	Large (250+)	Central Serbia	Vojvodina	Belgrade	
YES								
Activity	Manufacturing	28.8	32.4	29.5	24.8	38.9	29.1	29.7
	Electricity, gas, steam and air conditioning supply; Water supply, sewerage	14.1	20.8	13.2	10.3	30.0	9.1	17.0
	Construction	20.5	17.5	13.7	10.2	16.7	29.4	19.7
	Wholesale and retail trade	34.1	53.1	52.8	27.5	40.6	41.5	36.8
	Transportation and storage	5.9	37.3	34.1	8.9	19.0	8.7	11.9
	Accommodation and food service activities	57.5	67.1	25.0	59.8	69.4	53.9	58.3
	Information and communication	44.9	57.6	81.8	32.8	30.9	58.1	48.3
	Real estate activities; Professional, scientific and technical activities	26.4	30.4	25.0	10.3	36.3	28.4	27.0
	Administration support service activities; Repair of computers	38.5	33.5	35.7	27.2	28.5	44.1	37.3
Total		30.0	35.9	34.4	22.8	35.4	36.2	31.2

C11: Does your enterprise pay to advertise on the Internet using any of the following targeted advertising methods?

Enterprises		Size class			Region			Total
		Small (10-49)	Secondary (50-249)	Large (250+)	Central Serbia	Vojvodina	Belgrade	
Based on webpage's content or keywords searched by users								
Activity	Manufacturing	69.8	72.4	81.5	65.1	79.2	68.2	71.0
	Electricity, gas, steam and air conditioning supply; Water supply, sewerage	78.0	100.0	22.2	74.0	93.4	73.7	85.9
	Construction	57.7	42.0	100.0	44.6	100.0	44.3	55.8
	Wholesale and retail trade	62.9	60.0	77.6	79.8	49.5	62.3	62.9
	Transportation and storage	100.0	80.2	58.8	91.8	80.9	65.8	81.0
	Accommodation and food service activities	89.3	83.4	100.0	90.6	66.5	97.3	88.6
	Information and communication	61.5	82.6	66.7	75.8	44.8	68.3	65.9
	Real estate activities; Professional, scientific and technical activities	85.6	57.0	60.0	100.0	59.7	87.8	81.2
	Administrative support service activities; Repair of computers	69.5	75.4	47.8	89.2	58.7	68.2	69.0
Total		69.5	70.5	71.8	73.8	67.2	69.3	69.8
Based on the tracking of user's past activities or profiles on the Internet								
Activity	Manufacturing	40.3	35.4	45.3	30.9	49.7	37.6	39.3
	Electricity, gas, steam and air conditioning supply; Water supply, sewerage	39.0	80.1	22.2	54.8	68.9	-	60.1
	Construction	-	48.9	77.9	20.5	15.1	7.5	10.8
	Wholesale and retail trade	42.8	45.1	41.6	43.9	57.6	36.1	43.2
	Transportation and storage	63.5	11.7	28.8	21.8	56.0	5.3	34.5
	Accommodation and food service activities	53.5	44.9	-	36.4	39.0	66.4	52.2
	Information and communication	45.0	61.0	53.3	53.9	36.3	49.7	48.4
	Real estate activities; Professional, scientific and technical activities	43.7	3.9	-	45.8	-	51.5	37.3
	Administrative support service activities; Repair of computers	21.3	20.2	36.3	39.2	27.5	17.8	22.2
Total		39.9	39.0	41.8	36.4	45.7	38.1	39.8

C11: Does your enterprise pay to advertise on the Internet using any of the following targeted advertising methods?

Enterprises		Size class			Region			Total
		Small (10-49)	Secondary (50-249)	Large (250+)	Central Serbia	Vojvodina	Belgrade	
Based on Internet user's geolocation								
Activity	Manufacturing	44.8	38.6	61.3	45.7	43.1	42.2	44.0
	Electricity, gas, steam and air conditioning supply; Water supply, sewerage	39.0	88.5	22.2	54.8	68.9	73.7	64.6
	Construction	15.4	39.7	77.9	20.5	87.3	0.9	21.4
	Wholesale and retail trade	40.6	64.0	64.0	31.3	24.3	62.3	45.2
	Transportation and storage	63.5	23.4	28.8	43.6	53.9	5.3	40.2
	Accommodation and food service activities	72.2	61.4	-	44.4	53.0	93.0	70.4
	Information and communication	63.0	49.5	53.3	73.1	33.1	62.7	60.0
	Real estate activities; Professional, scientific and technical activities	65.0	18.3	30.0	45.8	-	82.5	57.6
	Administrative support service activities; Repair of computers	64.3	75.4	36.3	60.2	50.5	69.0	64.2
Total		48.6	48.7	53.6	42.0	39.2	58.7	48.9
Any other method of targeted advertising on the Internet not specified above								
Activity	Manufacturing	22.5	20.4	57.5	11.2	35.9	26.7	23.7
	Electricity, gas, steam and air conditioning supply; Water supply, sewerage	22.0	-	50.0	26.0	3.3	26.3	12.1
	Construction	93.0	39.7	55.9	60.2	84.9	86.2	82.3
	Wholesale and retail trade	51.8	21.5	52.1	49.3	57.7	40.3	46.7
	Transportation and storage	63.5	19.8	58.8	3.3	62.7	50.0	41.7
	Accommodation and food service activities	48.9	23.3	-	37.5	18.2	62.7	45.5
	Information and communication	60.8	26.8	46.7	68.5	53.1	52.0	54.1
	Real estate activities; Professional, scientific and technical activities	7.2	43.0	70.0	45.8	6.0	13.1	13.3
	Administrative support service activities; Repair of computers	45.7	34.5	47.8	10.8	48.5	48.8	43.9
Total		43.0	23.0	53.8	29.4	41.5	43.7	39.3

C13_R: Does your enterprise use any of the following social media?

in percentages

Enterprises		Size class			Region			Total
		Small (10-49)	Medium (50-249)	Large (250+)	Central Serbia	Vojvodina	Belgrade	
Social networks (*Facebook, LinkedIn, Xing, Yammer*)								
Activity	Manufacturing	29.1	41.9	40.3	29.3	35.0	37.3	32.8
	Electricity, gas, steam and air conditioning supply; Water supply, sewerage	21.6	28.1	62.3	12.6	47.3	44.2	28.3
	Construction	29.6	27.6	15.2	28.0	29.2	29.1	28.8
	Wholesale and retail trade	41.9	49.0	70.0	33.7	64.3	39.0	43.4
	Transportation and storage	19.2	39.7	53.1	22.6	27.8	20.9	23.7
	Accommodation and food service activities	71.1	74.3	25.0	76.3	72.7	68.2	71.1
	Information and communication	76.3	76.3	95.5	85.1	75.1	75.6	77.1
	Real estate activities; Professional, scientific and technical activities	31.8	52.5	62.5	38.2	40.3	32.9	35.2
	Administrative support service activities; Repair of computers	58.7	40.7	48.3	36.5	34.8	68.2	54.5
Total		38.0	43.4	50.1	32.1	45.4	42.4	39.5
Enterprise's blog (*Twitter*)								
Activity	Manufacturing	5.1	12.4	10.0	7.6	6.8	6.5	7.1
	Electricity, gas, steam and air conditioning supply; Water supply, sewerage	-	-	16.7	1.0	2.0	2.8	1.6
	Construction	6.8	4.9	3.0	-	4.2	12.8	6.3
	Wholesale and retail trade	7.4	23.1	22.5	4.1	8.8	14.1	9.6
	Transportation and storage	5.9	10.4	24.1	7.2	10.4	4.3	7.3
	Accommodation and food service activities	22.0	26.1	25.0	17.3	17.7	26.4	22.5
	Information and communication	33.2	52.2	63.6	30.8	48.6	35.5	37.3
	Real estate activities; Professional, scientific and technical activities	7.4	17.4	34.2	9.4	24.9	4.5	9.2
	Administrative support service activities; Repair of computers	18.5	13.7	17.7	14.4	9.5	22.0	17.6
Total		8.9	14.8	17.4	6.7	10.5	13.5	10.3

C13_R: Does your enterprise use any of the following social media?

in percentages

Enterprises		Size class			Region			Total
		Small (10-49)	Medium (50-249)	Large (250+)	Central Serbia	Vojvodina	Belgrade	
Multimedia content sharing websites (*Youtube, Flickr, Picasa*)								
Activity	Manufacturing	15.5	23.5	26.6	15.8	24.8	14.8	18.0
	Electricity, gas, steam and air conditioning supply; Water supply, sewerage	-	3.1	31.4	4.9	4.0	2.8	4.3
	Construction	9.4	22.0	19.4	8.1	9.7	17.2	12.2
	Wholesale and retail trade	16.6	33.6	36.9	20.4	22.5	16.3	19.1
	Transportation and storage	5.9	18.7	30.2	7.9	14.1	4.8	8.9
	Accommodation and food service activities	34.6	42.6	25.0	30.8	17.7	43.4	35.4
	Information and communication	45.0	53.2	68.2	53.4	48.8	45.0	47.2
	Real estate activities; Professional, scientific and technical activities	27.3	20.1	38.3	21.8	36.2	24.8	26.5
	Administrative support service activities; Repair of computers	26.2	25.2	20.5	25.7	14.4	30.3	25.5
Total		18.1	24.8	30.3	16.8	22.0	21.3	19.9
Wikipedia								
Activity	Manufacturing	7.9	8.6	6.8	6.2	11.3	7.7	8.0
	Electricity, gas, steam and air conditioning supply; Water supply, sewerage	6.8	3.1	9.3	6.3	-	17.8	5.4
	Construction	9.4	12.1	3.6	8.9	2.1	14.7	9.8
	Wholesale and retail trade	5.1	17.3	22.6	5.5	10.4	6.2	7.0
	Transportation and storage	5.9	6.2	9.0	7.2	10.0	0.5	6.1
	Accommodation and food service activities	4.4	7.3	25.0	11.1	8.3	1.1	4.9
	Information and communication	17.6	26.2	36.4	15.7	23.7	19.4	19.7
	Real estate activities; Professional, scientific and technical activities	7.1	9.2	30.8	11.7	24.0	1.9	7.7
	Administrative support service activities; Repair of computers	4.0	11.5	3.3	15.0	4.9	2.7	5.3
Total		7.1	10.8	11.7	7.1	10.6	7.0	8.0

MODULE 2.D: Use of cloud computing

D1: Does your enterprise pay any cloud services used over the Internet?

In percentages

Enterprises		Size class			Region			Total
		Small (10-49)	Medium (50-249)	Large (250+)	Central Serbia	Vojvodina	Belgrade	
YES								
Activity	Manufacturing	14.0	14.6	29.0	13.2	13.6	20.1	15.0
	Electricity, gas, steam and air conditioning supply; Water supply, sewerage	11.7	13.1	25.2	13.1	17.0	5.6	13.6
	Construction	13.5	25.1	30.8	9.2	15.0	23.1	16.3
	Wholesale and retail trade	15.2	28.2	30.5	12.3	17.1	20.8	17.2
	Transportation and storage	2.2	7.4	35.5	4.9	2.0	5.9	4.3
	Accommodation and food service activities	10.6	35.4	25.0	7.7	9.4	17.4	13.5
	Information and communication	33.2	56.7	54.5	40.2	19.6	42.8	37.7
	Real estate activities; Professional, scientific and technical activities	7.7	22.7	16.7	17.2	13.7	7.0	9.9
	Administrative and support service activities; Repair of computers	12.8	12.5	40.8	14.8	1.7	21.3	15.3
Total		13.5	20.3	31.5	12.6	13.4	19.5	15.5

D3: Does your enterprise pay cloud computing services delivered by providers in the following ways?[1]

In percentages

Enterprises		Size class			Region			Total
		Small (10-49)	Medium (50-249)	Large (250+)	Central Serbia	Vojvodina	Belgrade	
Via shared servers								
Activity	Manufacturing	38.7	55.3	37.0	47.8	34.4	41.5	42.4
	Electricity, gas, steam and air conditioning supply; Water supply, sewerage	47.0	41.9	42.7	44.3	43.2	50.0	44.1
	Construction	49.8	58.0	37.7	96.2	80.4	26.0	51.6
	Wholesale and retail trade	57.1	61.5	55.8	86.3	29.2	58.5	57.9
	Transportation and storage	100.0	56.5	42.5	94.0	-	65.4	69.2
	Acccommodation and food service activities	40.8	47.4	-	-	11.2	55.9	42.1
	Information and communication	49.9	56.7	50.0	48.7	70.7	49.3	51.4
	Real estate activities; Professional, scientific and technical activities	66.8	37.9	-	32.3	91.0	49.6	55.7
	Administrative and support service activities; Repair of computers	77.0	-	53.0	-	-	73.8	59.8
Total		51.3	53.7	43.0	59.3	42.1	50.4	51.2
On servers exclusively reserved to your enterprise								
Activity	Manufacturing	47.9	49.2	56.7	52.6	47.5	46.1	49.2
	Electricity, gas, steam and air conditioning supply; Water supply, sewerage	53.0	58.1	42.7	55.7	50.9	50.0	53.4
	Construction	50.2	25.9	39.3	-	16.8	65.7	42.1
	Wholesale and retail trade	53.3	48.1	28.2	27.6	26.9	72.7	51.2
	Transportation and storage	-	56.5	58.6	6.0	-	78.8	34.6
	Acccommodation and food service activities	42.2	57.7	100.0	100.0	11.2	44.1	47.6
	Information and communication	62.5	59.0	66.7	73.8	29.3	63.8	62.0
	Real estate activities; Professional, scientific and technical activities	19.8	62.1	60.0	9.5	9.0	65.1	34.6
	Administrative and support service activities; Repair of computers	23.0	72.4	37.5	100.0	100.0	18.4	33.8
Total		48.7	49.7	49.0	42.7	32.9	59.7	49.0

[1] The results refer only to enterprises that answered YES in question D1.

MODULE 2.H: Invoicing

H1: Did your enterprise send any of the following types of invoices during 2017?

In percentages

Enterprises		Size class			Region			Total
		Small (10-49)	Medium (50-249)	Large (250+)	Central Serbia	Vojvodina	Belgrade	
Invoices in electronic form, in a standard structure suitable for automated processing								
Activity	Manufacturing	20.1	20.1	29.4	19.8	19.7	23.3	20.6
	Electricity, gas, steam and air conditioning supply; Water supply, sewerage	12.4	20.3	27.7	15.5	17.0	26.9	17.3
	Construction	11.0	14.6	10.7	6.4	14.2	15.0	11.7
	Wholesale and retail trade	19.4	12.4	40.5	17.5	16.7	21.7	19.1
	Transportation and storage	13.6	21.0	39.8	15.2	24.2	8.1	15.8
	Accommodation and food service activities	14.0	30.3	25.0	21.7	8.0	16.0	15.9
	Information and communication	34.1	36.3	18.2	34.5	39.3	31.8	33.8
	Real estate activities; Professional, scientific and technical activities	9.1	23.1	38.3	21.7	4.8	11.0	11.6
	Administrative and support service activities; Repair of computers	17.6	10.9	21.1	23.6	9.0	18.1	16.7
Total		17.7	19.0	29.6	17.9	17.7	19.3	18.4
Invoices in electronic form not suitable for automated processing								
Activity	Manufacturing	64.5	62.6	66.2	62.1	73.4	57.8	64.2
	Electricity, gas, steam and air conditioning supply; Water supply, sewerage	47.3	79.1	86.3	63.5	61.3	83.8	65.1
	Construction	64.2	46.3	61.9	69.9	62.5	51.6	60.6
	Wholesale and retail trade	61.5	71.6	73.3	56.5	58.1	70.4	63.0
	Transportation and storage	70.9	71.7	82.4	57.9	68.2	93.6	71.5
	Accommodation and food service activities	58.9	59.4	50.0	60.2	55.5	59.5	58.9
	Information and communication	78.6	61.8	72.7	77.3	84.2	72.6	75.8
	Real estate activities; Professional, scientific and technical activities	81.9	60.5	70.0	68.9	96.7	75.7	78.6
	Administrative and support service activities; Repair of computers	54.2	82.1	53.2	68.9	46.1	62.0	59.1
Total		65.3	65.0	68.9	61.8	67.5	67.3	65.4

**H1: Did your enterprise send any of the following
types of invoices during 2017?**

In percentages

Enterprises		Size class			Region			Total
		Small (10-49)	Medium (50-249)	Large (250+)	Central Serbia	Vojvodina	Belgrade	
Paper invoices								
Activity	Manufacturing	96.0	96.0	93.4	95.5	99.5	92.5	95.9
	Electricity, gas, steam and air conditioning supply; Water supply, sewerage	100.0	96.9	92.6	97.4	98.0	100.0	97.9
	Construction	93.2	96.4	92.3	97.7	100.0	87.2	93.8
	Wholesale and retail trade	94.7	100.0	94.8	93.2	96.6	96.2	95.3
	Transportation and storage	96.1	100.0	96.7	92.2	100.0	99.5	96.7
	Accommodation and food service activities	98.4	85.5	100.0	96.2	97.7	97.1	97.0
	Information and communication	95.1	95.2	100.0	92.3	83.6	100.0	95.3
	Real estate activities; Professional, scientific and technical activities	99.1	95.4	100.0	94.6	100.0	99.2	98.6
	Administrative and support service activities; Repair of computers	94.0	97.5	94.4	91.6	97.2	94.4	94.6
Total		95.7	96.8	94.4	94.8	98.0	95.5	95.9

MODULE 2.I: E-commerce

I1: Did your enterprise receive orders for goods or services placed via a website of mobile application (excluding manually-typed e-mails) during 2017?

In percentages

Enterprises		Size class			Region			Total
		Small (10-49)	Medium (50-249)	Large (250+)	Central Serbia	Vojvodina	Belgrade	
YES								
Activity	Manufacturing	25.6	26.7	31.1	25.3	28.5	25.4	26.2
	Electricity, gas, steam and air conditioning supply; Water supply, sewerage	5.5	8.3	17.2	2.6	16.0	8.0	7.9
	Construction	29.9	11.0	25.6	10.0	24.2	40.8	26.0
	Wholesale and retail trade	18.5	36.3	51.5	18.2	34.4	16.6	21.4
	Transportation and storage	33.0	21.2	46.3	28.7	24.2	43.7	31.7
	Accommodation and food service activities	43.5	61.4	25.0	49.1	41.7	44.9	45.3
	Information and communication	36.8	38.4	36.4	23.3	27.8	43.8	37.0
	Real estate activities; Professional, scientific and technical activities	28.0	18.5	28.3	11.7	25.3	30.8	26.6
	Administrative and support service activities; Repair of computers	28.5	36.9	30.2	16.3	16.9	39.9	30.2
Total		25.8	26.3	34.3	21.3	28.5	29.4	26.3

I2: Please indicate an estimate of the total turnover resulting from orders received via a website or mobile application in 2017[1]

In percentages

	Enterprises						
	Size class			Region			Total
	Small (10-49)	Medium (50-249)	Large (250+)	Central Serbia	Vojvodina	Belgrade	
1-24%	71.6	75.5	74.6	73.5	73.0	71.5	72.5
25-49%	15.5	9.2	12.3	7.3	17.7	16.6	14.2
50-74%	7.4	9.5	9.0	10.7	6.3	6.9	7.8
75-100%	5.5	5.9	4.2	8.5	3.1	5.0	5.5

[1] The results refer only to enterprises that answered YES in question I1

I3: Indicate a percentage of the turnover of realised orders received via a website or mobile application in 2017, by type of transaction [1]

In percentages

| | Enterprises | | | | | | |
| | Size class | | | Region | | | |
	Small (10-49)	Medium (50-249)	Large (250+)	Central Serbia	Vojvodina	Belgrade	Total
Sales to end consumers (B2C)							
1- 24%	20.3	24.3	24.9	28.2	19.8	17.6	21.3
25- 49%	1.9	6.2	4.4	2.2	3.4	2.9	2.8
50-74%	17.4	30.7	31.7	21.6	15.5	23.0	20.6
75-100%	60.4	38.8	39.0	48.0	61.3	56.5	55.4
Sales to other enterprises (B2B, B2G)							
1- 24%	59.4	38.8	39.0	48.6	59.6	55.4	54.5
25- 49%	12.6	13.1	16.7	11.8	6.8	17.4	12.9
50-74%	7.8	23.9	20.2	11.5	13.8	9.7	11.4
75-100%	20.2	24.3	24.2	28.1	19.8	17.5	21.2

[1] The results refer only to enterprises that answered YES in question I1.

I4: Did your enterprise receive orders for goods/services placed via a website or mobile application in 2017?[1]

In percentages

Enterprises		Small (10-49)	Medium (50-249)	Large (250+)	Central Srbija	Vojvodina	Belgrade	Total
		Size class			**Region**			
Via your enterprise's website or mobile application								
Activity	Manufacturing	78.3	73.7	69.2	79.1	85.1	60.5	76.6
	Electricity, gas, steam and air conditioning supply; Water supply, sewerage	-	62.7	100.0	-	54.1	100.0	50.0
	Construction	77.6	63.2	82.2	14.9	58.8	95.3	76.5
	Wholesale and retail trade	70.0	89.8	68.8	53.4	96.3	64.6	73.9
	Transportation and storage	77.7	60.9	85.9	70.4	86.4	76.4	76.5
	Accommodation and food service activities	67.8	81.9	100.0	79.7	61.6	68.1	70.1
	Information and communication	55.6	83.2	100.0	61.9	100.0	53.8	61.7
	Real estate activities; Professional, scientific and technical activities	81.3	81.8	100.0	100.0	90.2	77.8	81.7
	Administrative and support service activities; Repair of computers	90.5	41.0	100.0	52.0	37.5	91.6	80.3
Total		74.3	75.9	77.7	69.0	84.7	72.5	74.8
Via an e-commerce marketplace website or application used by several enterprises on the market								
Activity	Manufacturing	10.5	14.7	3.3	13.5	5.5	13.1	11.0
	Electricity, gas, steam and air conditioning supply; Water supply, sewerage	-	-	-	-	-	-	-
	Construction	9.9	22.3	15.8	3.5	50.0	-	11.1
	Wholesale and retail trade	24.3	4.8	3.7	6.9	24.7	22.6	19.1
	Transportation and storage	33.6	-	15.4	28.7	43.2	21.5	29.1
	Accommodation and food service activities	14.6	39.8	-	10.9	18.7	21.8	18.3
	Information and communication	-	8.4	25.0	-	-	3.1	2.3
	Real estate activities; Professional, scientific and technical activities	56.1	5.4	-	7.4	-	66.5	50.1
	Administrative and support service activities; Repair of computers	22.0	27.7	12.8	48.4	28.8	18.2	22.4
Total		20.3	12.9	6.9	13.2	18.4	21.5	18.2

[1] The results refer only to enterprises that answered YES in question I1.

I5: Indicate an estimate of realised orders received via a website or mobile application in 2017[1]

In percentages

| | Enterprises | | | | | | |
| | Size class | | | Region | | | |
	Small (10-49)	Medium (50-249)	Large (250+)	Central Serbia	Vojvodina	Belgrade	Total
Via your enterprise's website or mobile application							
1- 24%	17.1	13.1	0.0	1.6	23.9	16.2	16.1
25- 49%	15.9	11.2	0.0	14.2	0.9	24.1	14.9
50-74%	30.9	28.5	68.1	53.2	26.0	27.8	31.8
75-100%	36.0	47.1	31.9	31.0	49.2	32.0	37.3
Via a website or mobile application used by several enterprises on the market							
1- 24%	36.0	47.1	31.9	31.0	49.2	32.0	37.3
25- 49%	0.0	12.6	9.1	3.9	0.0	2.3	1.9
50-74%	44.6	27.1	58.9	52.4	26.9	49.6	42.8
75-100%	19.4	13.1	0.0	12.6	23.9	16.2	18.0

[1] The results refer only to enterprises that answered YES in question I4.

I8: Did your enterprise place orders for goods/services via a website, mobile application or EDI-type messages in 2017?

In percentages

Enterprises		Size class			Region			Total
		Small (10-49)	Medium (50-249)	Large (250+)	Central Serbia	Vojvodina	Belgrade	
YES								
Activity	Manufacturing	36.1	45.4	64.4	41.9	44.4	30.7	39.9
	Electricity, gas, steam and air conditioning supply; Water supply, sewerage	11.6	35.2	34.8	20.5	31.3	20.6	24.3
	Construction	51.1	36.9	47.4	49.4	47.5	47.5	48.2
	Wholesale and retail trade	36.6	41.2	55.5	42.4	29.7	38.4	37.6
	Transportation and storage	51.2	39.7	60.2	50.0	54.3	44.9	49.8
	Accommodation and food service activities	46.8	39.2	75.0	44.5	29.3	52.6	46.2
	Information and communication	70.2	54.0	59.1	62.1	64.8	69.5	67.3
	Real estate activities; Professional, scientific and technical activities	37.7	47.0	50.0	47.2	60.2	30.9	39.2
	Administrative and support service activities; Repair of computers	35.3	61.8	44.2	53.6	31.3	41.4	40.9
Total		40.7	43.6	56.7	43.4	41.8	40.5	41.9

I9: Did your enterprise place orders for goods/services via a website or mobile application in 2017?

In percentages

Enterprises		Size class			Region			Total
		Small (10-49)	Medium (50-249)	Large (250+)	Central Serbia	Vojvodina	Belgrade	
YES								
Activity	Manufacturing	98.3	93.7	89.4	97.6	98.9	88.4	96.3
	Electricity, gas, steam and air conditioning supply; Water supply, sewerage	100.0	93.2	100.0	90.4	100.0	100.0	95.6
	Construction	97.4	93.3	100.0	94.1	95.5	100.0	96.9
	Wholesale and retail trade	96.3	82.1	92.2	98.1	79.9	97.3	94.3
	Transportation and storage	93.3	100.0	100.0	100.0	100.0	79.1	94.4
	Accommodation and food service activities	87.0	100.0	100.0	93.9	84.2	87.1	88.4
	Information and communication	97.3	94.8	100.0	98.3	88.5	99.4	97.1
	Real estate activities; Professional, scientific and technical activities	92.8	100.0	100.0	70.1	100.0	100.0	94.1
	Administrative and support service activities; Repair of computers	95.0	94.4	87.1	97.6	92.6	93.2	94.1
Total		95.9	92.7	92.6	96.2	94.0	94.7	95.1

I11: Was your enterprise's share of total orders placed over the Internet more than 1% of your enterprise's total purchases in 2017?

In percentages

Enterprises		Size class			Region			Total
		Small (10-49)	Medium (50-249)	Large (250+)	Central Serbia	Vojvodina	Belgrade	
YES								
Activity	Manufacturing	47.7	37.1	36.3	43.3	38.3	54.1	43.8
	Electricity, gas, steam and air conditioning supply; Water supply, sewerage	20.5	53.2	40.8	22.5	70.2	27.2	44.3
	Construction	41.1	53.0	22.6	38.3	13.4	61.9	42.4
	Wholesale and retail trade	51.3	48.6	44.5	45.3	42.4	58.7	50.7
	Transportation and storage	50.7	42.8	35.3	39.7	62.3	46.7	49.0
	Accommodation and food service activities	55.7	47.4		52.7	36.3	58.2	54.2
	Information and communication	56.0	46.9	38.5	66.8	59.2	49.8	54.3
	Real estate activities; Professional, scientific and technical activities	54.8	38.1	50.0	31.8	55.1	57.7	51.9
	Administrative and support service activities; Repair of computers	33.8	28.6	63.6	38.2	19.2	39.4	35.2
Total		49.4	42.1	39.0	42.9	42.7	55.0	47.5

2.5. QUESTIONNAIRE

USAGE OF INFORMATION AND COMMUNICATION TECHNOLOGIES IN ENTERPRISES

MODULE A: USE OF COMPUTERS		
	YES	**NO**
A1: Does your enterprise use computers for business purposes? Computers include the following devices: personal computer (PC), laptop, tablet and other portable devices such as smartphones.	☐	☐ **End of interview**
A2: Please, indicate an estimate of the percentage of employees who use computers for business purposes:	☐☐☐ **%**	
MODULE B: ICT SPECIALISTS AND SKILLS		
	YES	**NO**
B1: Does your enterprise employ ICT specialists? ICT specialists are employees for whom ICT is the main job; for example maintenance, development of systems and operating applications	☐	☐
B2: Did your enterprise provide any type of training to develop ICT related skills for employees for ICT skills improvement in 2017?	**YES**	**NO**
a) **Training for ICT specialists** (*Answer with NO if you did not employ ICT specialists*)	☐	☐
b) **Training for other persons employed**	☐	☐
	YES	**NO**
B3: Did your enterprise recruit or try to recruit ICT specialists during 2017?	☐	☐ **Go to B5**
	YES	**NO**
B4: Did your enterprise have vacancies for ICT specialists that were difficult to fill, during 2017?	☐	☐

B5: Please, indicate who mainly performed ICT functions in your enterprise during 2017:	Enterprise's employees	Exter-nal per-sons	Not applicable
a) **Maintenance of ICT infrastructure** (servers, computers, printers, networks)	☐	☐	☐
b) **Support to office software** (Word, Excel...)	☐	☐	☐
c) **Development of business management software/system (ERP, CRM)** **ERP** (*Enterprise Resource Planning)* – software system sued to manage all business aspects of a company **CRM** (*Customer Relationship Management*) – software application for managing information about customers	☐	☐	☐
d) **Support for business management software/systems** (ERP, CRM, HR database)	☐	☐	☐
e) **Development of web solutions** (websites, e-commerce solutions)	☐	☐	☐
f) **Support for web solutions** (websites, e-commerce solutions)	☐	☐	☐
g) **Security and protection of data** (testing, security software)	☐	☐	☐

MODULE C: ACCESS TO AND USE OF THE INTERNET

	YES	NO
C1: Does your enterprise have access to the Internet?	☐	☐ Go to E1

C2: Please, indicate an estimate of the persons employed who use the Internet for business purposes:	|＿|＿|＿| %

Use of fixed broadband Internet for business purposes

	YES	NO
C3: Does your enterprise use any type of fixed connection to the Internet (ADSL, SDSL,VDSL, FTTP, cable Internet, public Wifi)?	☐	☐ Go to C5

C4: What is the maximum contracted speed of the Internet connection in your enterprise? (tick only one)	
a) **Less than 2 Mbit/s**	☐
b) **At least 2, but less than 10 Mbit/s**	☐
c) **At least 10, but less than 30 Mbit/s**	☐
d) **At least 30, but less than 100 Mbit/s**	☐
e) **At least 100 Mbit/s**	☐

Use of a mobile connection to the Internet for business purposes

The use of a mobile connection to the Internet for business purposes means the use of portable devices paid and provided by the enterprise that are connected to the Internet through a mobile telephone network.

	YES	NO
C5: Does your enterprise provide portable devices that allow a mobile connection to the Internet using mobile telephone networks for business purposes? (via portable computers or other portable devices such as smartphones?	☐	☐ Go to C8

C6: Please, indicate an estimate of the persons employed who use portable devices (provided by the enterprise) for business purposes that allow Internet connection via mobile telephone network (portable computer, tablet, smartphone):	|＿|＿|＿| %

C7. Does your enterprise provide portable devices that allow mobile connection via mobile telephone network for the following business purposes?	YES	NO
a) Access the enterprise's e-mail system?	☐	☐
b) Access and modify enterprise's documents	☐	☐
c) Use of dedicated business software applications, e.g. for orders or sales management, enterprise's resources planning (ERP)	☐	☐

Use of a website		
	YES	NO
C8: Does your enterprise have a website?	☐	☐ **Go to C10**

C9: Does your enterprise provide the following services? *(Your enterprise as provider of Internet services)*	YES	NO
a) Description of goods or services, price lists	☐	☐
b) On-line ordering or reservation/booking of goods/services	☐	☐
c) Possibility for visitors to customise or design on-line goods or services	☐	☐
d) Tracking or status of orders placed	☐	☐
e) Personalised content on the website for regular visitors	☐	☐
f) Links or references to the enterprise's social media profiles (Facebook, Twitter)	☐	☐

Other use of the Internet		
C10: Does your enterprise pay to advertise to the Internet? (e.g. adverts on search engines, on social media, on other websites, etc.	YES	NO
	☐	☐

C11: Does your enterprise pay to advertise on the Internet using any of the following targeted advertising methods?	YES	NO
a) Based on webpages' content or keywords searched by user	☐	☐
b) Based on the tracking of users' past activities or profiles on the Internet	☐	☐
c) Based on Internet users' geolocation	☐	☐
d) Any other method of targeted advertising on the Internet not specified above	☐	☐

C12_R: Does your enterprise use radio frequency identification instruments (RFID)?	YES	NO
	☐	☐

C13_R: Does your enterprise use any of the following social media?	YES	NO
a) Social networks (Facebook, LinkedIn, Xing, Yammer)	☐	☐
b) Enterprise's blog (Twitter)	☐	☐
c) Multimedia content sharing websites *(Youtube, Flickr, Picasa)*	☐	☐
d) Wikipedia	☐	☐

MODULE D: USE OF CLOUD COMPUTING
Cloud services refer to ICT services that are used over the Internet to access software, computer storage, etc. The services have the following characteristics: • *they are on servers of service providers;*   • *they can be used on demand by the user;*   • *they are paid based on way of use, capacity used*   • *they are paid by capacity used, storage space capacity*

D1: Does your enterprise pay any cloud computing services used over the Internet? (refer to the definition of cloud computing above) (free of charge services are excluded)	YES	NO
	☐	☐ **Go to E1**

D2: Does your enterprise pay any of the following cloud computing services used over the Internet (free of charge services are excluded)?	YES	NO
a) E-mail (as a cloud computing service)	☐	☐
b) Office software (Word, Excel)	☐	☐
c) Hosting the enterprise's databases	☐	☐
d) Storage of files	☐	☐
e) Finance or accounting software applications	☐	☐
f) CRM software	☐	☐
g) Computing power to run the enterprise's software	☐	☐

D3: Does your enterprise pay cloud computing services delivered by providers the following ways?	YES	NO
a) Via shared servers?	☐	☐
b) On servers exclusively reserved for your enterprise?	☐	☐

MODULE E: USE OF 3D PRINTING

Use of printing or manufacturing additive layer refers to the use of special printers by the enterprise itself or use of 3D printing services provided by other enterprises to create three-dimensional physical objects using digital technology.

E1: During 2017, did your enterprise use 3D printing:	YES	NO
a) using your enterprise's 3D printers? (including the use of rented/leased 3D printers)	☐	☐
b) using printing services provided by other enterprises? (including printing services provided by parent or affiliate enterprises)	☐	☐

Next question should be answered if the answer in E1a) or E1 b) was YES.
If the answers in E1a) and E1b) were NO, the respondent should be routed to H1.

E2: During 2017, did your enterprise use 3D printing for any of the following activities?	YES	NO
a) Prototypes or models for sale	☐	☐
b) Prototypes or models for Internal use	☐	☐
c) Goods for sale, excluding prototypes or models (e.g. moulds, tools, parts of goods, semi-finished goods)	☐	☐
d) Goods used in your enterprise's production process, excluding prototypes or models (e.g. moulds, tools, parts of goods, semi-finished goods)	☐	☐

MODULE H: INVOICING

There are invoices in paper form and electronic form.

There are two types of invoices in electronic form:

- *e-invoices in a standard form (suitable for automatic processing) – such invoices may be exchanged directly between suppliers and customers, via service operator or via electronic banking system;*
- *invoice sent electronically, which is not suitable for electronic processing (invoice sent by e-mail).*

H1: Did your enterprise send any of the following types of invoices during 2017? (including invoices sent via intermediaries, e.g. via accountants, e-invoice service providers, etc.)	YES	NO
a) Invoices in electronic form, in a standard structure, suitable for automatic processing Excluding the transmission of PDF files, EDI (e.g. EDIFACT), XML (e.g. UBL)	☐	☐
b) Invoices in electronic form not suitable for automatic processing Including the transmission of PDF files (e.g. e-mails, TIF, JPEG or other formats)	☐	☐
c) Invoices in paper form	☐	☐

MODULE I: E-COMMERCE		
E-commerce is the sale or purchase of goods or services conducted over computer networks by methods specifically designed for the purpose of receiving or placing orders. The payment and delivery of goods and services do not have to be conducted on-line. E-commerce transactions exclude orders made by manually-types e-mail messages.		

	YES	NO
I1: Did your enterprise receive orders for goods or services placed via a website or mobile application (excluding manually-typed e-mails) during 2017?	☐	☐ **Go to I6**

I2: Please, indicate an estimate of the total turnover resulting from orders received via a website or mobile application in 2017?	|__|__|__| **%**

I3: Indicate a percentage of the turnover resulting from orders received via a website or mobile application in 2017, by type of transaction:	
a) **Sales to private consumers (B2C)**	|__|__|__| **%**
b) **Sale to other enterprises (B2B) and sale to public authorities (B2G)**	|__|__|__| **%**
T O T A L	**100 %**

I4: Did your enterprise receive orders for goods/services placed via a website or application in 2017?	YES	NO
a) **Via your enterprise's website or mobile application?** *(including parent and affiliate enterprises, extranet)*	☐	☐
b) **Via an e-commerce marketplace website or application used by several enterprises on the market for trading products?** *(Apr, Nbs, Amss, Limundo, Artberza, Sve za kuću,Tehnomanija, Infostud, Popusti.rs)*	☐	☐
If the answer is YES to a) and b)-> go to I5; otherwise, go to I6		

I5: Indicate an estimate of the turnover of realised orders <u>received</u> via a website or mobile application in 2017:	
a) **Via your enterprise's website or mobile application** *(including parent and affiliate enterprises, extranet)*	|__|__|__| **%**
b) **Via a website or mobile application used by several enterprises on the market** *(Apr, Nbs, Amss, Limundo, Artberza, Sve za kuću,Tehnomanija, Infostud, Popusti.rs)*	|__|__|__| **%**
T O T A L	**100 %**

EDI-type sales	
ED-type is the sale made via electronic data interchanges *(EDI)*. This type of sale means that it is: - in an agreed or standard format suitable for automated or standard format suitable for automated processing (e.g. EDI-EDIFACT, XML-UBL...); - without individual manually-typed messages.	

	YES	NO
I6: Did your enterprise receive orders for goods or services placed via EDI-type messages in 2017?	☐	☐ **Go to I8**

I7: Please, indicate an estimate of the total turnover resulting from <u>received</u> orders placed via EDI-type messages in 2017:	|__|__|__| **%**

Orders placed over the Internet		
Orders placed over the Internet may be place: • *via on-line shops (web shop) or via web forms on a website or mobile application;* • *via EDI-type messages suitable for automated processing EDI (EDIFACT), XML, excluding manually-typed messages.*		
	YES	**NO**
I8: Did your enterprise place orders for goods/services via a website, mobile application or EDI-typed messages in 2017?	☐	☐ **End of interview**
	YES	**NO**
I9: Did your enterprise place orders goods/services via a website or mobile application in 2017?	☐	☐
	YES	**NO**
I10: Did your enterprise place orders for goods/services via EDI-typed messages in 2017?	☐	☐
	YES	**NO**
I11: Was your enterprise's share of total orders placed over the Internet more than 1% of your enterprise's total purchases in 2017?	☐	☐ **End of interview**

ICT DICTIONARY

ADSL (Asymmetric Digital Subscriber Line):

A broadband digital transmission technology that uses the existing telephone line and provides for possible simultaneous data sending and voice communication. The larger part of range serves for data sending to user and the speed extends up to 6 Mbps.

Bit (Binary Digit):

The smallest information unit that a computer handles. A bit is expressed as 1 or 0 in binar presentation, or as true, i.e. false in logic presentation. A group of 8 bits makes 1 bite.

Broadband:

A communication system the agent (carrier) of which (e.g. optical cable) forwards multiplied data simultaneously, and each individual data is made module at different frequency.

B2B (Business-to-Business):

Transactions between two enterprises that are carried out by the way of networks based on IP and through other computer networks.

B2C (Business-to-Customer):

Transactions that are carried out between business and private customer trough IP networks and via other computer networks.

CRM (Customer Relationship Management):

It is a process or methodology that helps managing information about our clients' needs and habits and developing tighter relationships with them. CRM contains several technological components, but in organizational terms, CRM represents a set of processes for collecting necessary information on customers, sales, marketing efficiency, customers' reactions and market trends. CRM helps managing technologies and human resources in order to have a view of customers' behavior and value.

Downloading

Electronic transmission of information from a remote computer to your computer. Downloading of data files from anonymous FTP is a popular way of obtaining free of charge software of public property.

Dial-up connection:

Use of a telephone network for the purpose of connecting to an other network. Included are modem and regular telephone line, ISDN card and ISDN line, etc. If you are a typical computer user, you have one or two dial-up connections: one for the link to Internet and another for the link to the network at your enterprise.

DSL (Digital Subscriber Line):

A type of fast Internet connection that utilizes standard telephone lines. It could also be a type of broadband connection.

xDSL, ADSL, etc.

Transmissions via the Internet networks based on protocols and via other computer networks. Goods and services are ordered over those networks, but payments and final deliver of goods or services can be carried out on/outside the off-line network. Orders received by telephone, fax or e-mail do not fall into this category of e-commerce.

Digital goods or services:

Goods/services that can be ordered or delivered directly via a computer over the Internet, e.g. films, games, computer software, "on-line" newspapers, consulting services, etc.

E-mail:

Electronic transmission of messages, including text and attachments, between computers located inside or outside an organization. This comprises electronic mails over the Internet or other computer networks.

Extranet:

A secure extension of Intranet enabling external users to have access to certain parts of the organization Intranet.

Electronic commerce:

E-Commerce (Electronic Commerce) is the purchase or selling of goods or services over the Internet particularly via the World Wide Web service. Practically this term is often used instead of the recent one, e-business, which means business over the Internet.

Electronic (digital) signature:

Electronic signature is meant to be a technology used in systems of electronic business for checking the signatory's authenticity, securing the integrity of transmitted information and the irrevocability of the electronic signature in the message or document. Therefore, alike the signature in standard business, the electronic signature is used in electronic business. Besides, the latter secures electronical signed messages, which is not the case with personal signatures.

ERP (Enterprise Resource Planning):

ERP is a software system that monitors all the aspects of business operations of a company. The implemented ERP system is able to integrate business operations of different company functions (e.g. accountancy, sales, production, etc.) in one entity. One obtains this way a system through which one can, on one hard, manage all human and material resources, and on the other one, develop and monitor business processes and procedures.

Firewall:

A combination of hardware and software keeping the system secure. It is usually used to prevent an unauthorized access to the internal local network from the outside. Firewall prevents direct communication between a network and external computers.

Hardware:
A physical unit of a computer system, including external units, printers, modems, mice, etc.

Internet:
World computer network.

Internet address:
Address of one of the Internet resources. It typically reads for example:
http://www.stat.gov.rs

Intranet:
A network inside an organization based on Internet technologies and protocols, but being only available to a specific group of persons, e.g. the employees.

ISDN (Integrated Services Digital Network):
A fast telephone service which speed ranges up to 128 Kbps, which is several times faster than the analogous modem.

Local Area Network (LAN):
A local network that covers and connects a group of computers, printers and other units within a relative limited location (e.g. building). Each connected LAN units is allowed to communicate with other networks, if needed.

Network:
A group of computers or other devices, such as printers, scanners , etc., being connected to the communication link, which enables all the devices to interact. It can be of small range, linked with cables, wireless, permanently, temporary linked... The Internet is the largest network, the largest group of all interconnected world networks.

Server:
A computer, in a network environment, having shared resources and used by network users.

Virus:
A computer program, which, by being started-up and installed, damages or erases data in a computer.

Wide Area Network (WAN):
A communication network that links geographically remote computers, printers and other devices.

Window:
A part of a screen from which programs and processes can be started-up. Users can start-up several "windows" at the same time.

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