

UPOTREBA informativno-komunikacionih tehnologija u Bosni i Hercegovini

*USE OF INFORMATION AND COMMUNICATION
TECHNOLOGY IN BOSNIA AND HERZEGOVINA*

2018



Bosna i Hercegovina
Bosnia and Herzegovina



BHAS

Agencija za statistiku
Bosne i Hercegovine
Agency for Statistics of
Bosnia and Herzegovina

Sarajevo, 2019.



**UPOTREBA INFORMACIONO-
KOMUNIKACIONIH TEHNOLOGIJA
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Bosne i Hercegovine**
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Sarajevo, 2019.

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UVOD

Razvoj i upotreba informaciono-komunikacionih tehnologija transformisali su savremeno društvo u „informaciono društvo“. Njegova glavna karakteristika je ta što informaciono-komunikacione tehnologije igraju najvažniju ulogu kako u proizvodnji i ekonomiji, tako i u svim ostalim sferama života pojedinaca i društva u cjelini.

Uvidjevši značaj ovih tehnologija statističke institucije u Bosni i Hercegovini su sprovele po prvi put 2016. godine pilot-istraživanje o korištenju informaciono-komunikacionih tehnologija (KTI-P) kao i istraživanje o korištenju informaciono-komunikacionih tehnologija u domaćinstvima i pojedinačno (IKT-D).

Primarni cilj tog poduhvata bilo je testiranje metodologije i instrumenata i pripremanje za uvođenje sličnih, redovnih istraživanja koja se odnose na domaćinstva i privredu.

Oba ova istraživanja se sprovode od 2017. godine, kao redovna godišnja istraživanja. Istraživanja su provođena po metodologiji Eurostata, na teritoriji Bosne i Hercegovine.

Kada je riječ o domaćinstvima i pojedincima, referentni period činila su tri mjeseca koja su prethodila telefonskom intervjuisanju ili posjeti anketara, dok su se pojedina pitanja odnosila na cjelokupnu 2017. godinu.

Veličina uzorka je 9.043 domaćinstava. Uzorak za Istraživanje o korištenju informaciono-komunikacionih tehnologija u domaćinstvima i pojedinačno (IKT-D 2018) je pod uzorak Ankete o radnoj snazi, tako da su za IKT-D 2018 uključena samo ona domaćinstva, koja imaju bar jednog člana starosti između 16 i 74 godine.

Anketa za preduzeća provedena je na uzorku stratifikovanom po veličini i djelatnosti. Okvir uzorka je Statistički poslovni registar. Primijenjen je stratifikovani uzorak, veličina uzorka 2.579 preduzeća.

Podaci za oba statistička istraživanja su prikupljeni kombinovanim metodama:

IKT-D: putem telefonskog anketiranja (CATI) i putem anketara, lično anketiranje (PAPI)

IKT-P: putem telefonskog anketiranja (CATI), putem anketara, lično anketiranje (PAPI, CAPI), anketiranje putem pošte.

Nadamo se da će ova publikacija pružiti korisnicima dovoljno podataka o trenutnom stanju u oblasti informaciono-komunikacionih tehnologija i da će poslužiti kao dobra osnova za planiranje njenog daljeg razvoja.

INTRODUCTION

The development and usage of information and communication technologies have transformed modern society into an “information society”. Its main characteristic is that information and communication technologies play the most important role in both production and the economy, as well as in all other spheres of life of individuals and society as a whole.

Recognizing the importance of these technologies, statistical institutions in Bosnia and Herzegovina conducted for the first time in 2016 a pilot survey on the use of information and communication technologies (ICT-ENT), as well as survey on the Usage of information and communication technologies in households and by individuals (ICT-HH).

The primary goal of this endeavour was testing the methodology and instruments and preparing for the introduction of similar, regular surveys related to households and enterprises.

Both surveys are conducted from 2017, as regular annual surveys. The surveys were conducted according to Eurostat methodology, on the territory of Bosnia and Herzegovina.

When it comes of households and individuals, the reference period consisted of three months preceding the telephone interviews or interviewers visit, while certain questions related to the entire year 2017.

The sample size was 9,043 households. The sample for ICT-HH 2018 is a sub-sample of the Labor Force Survey, thus only households with at least one member aged between 16 and 74 years were included in the ICT-HH.

The survey of enterprises was conducted on a sample stratified by size and activity. The sample frame is the Statistical Business Register. The stratified sample was applied, a sample size of 2,579 enterprises.

Data for both statistical surveys were collected by combined methods:

ICT-D: by telephone interviewing (CATI) and by interviewers, personal interviewing (PAPI),

ICT-P: by telephone interviewing (CATI), by interviewers, via face-to-face interviewer (PAPI, CAPI), by mail.

We hope that this publication will provide users with sufficient data on the current state of information and communication technologies and will serve as a good basis for planning its further development.

DOMAĆINSTVA I POJEDINCI
HOUSEHOLDS AND
INDIVIDUALS

GLAVNI POKAZATELJI

Računari u domaćinstvima

(bilo koje vrste: desktop, laptop, netbook, tablet, osim smart phone)

Rezultati istraživanja o upotrebi informaciono-komunikacionih tehnologija u domaćinstvima i pojedinačno (IKT-D) u Bosni i Hercegovine, pokazali su sljedeće:

- 63,8% domaćinstava imaju pristup računaru
- 36,2% domaćinstava nemaju pristup računaru

MAIN INDICATORS

Computers in households

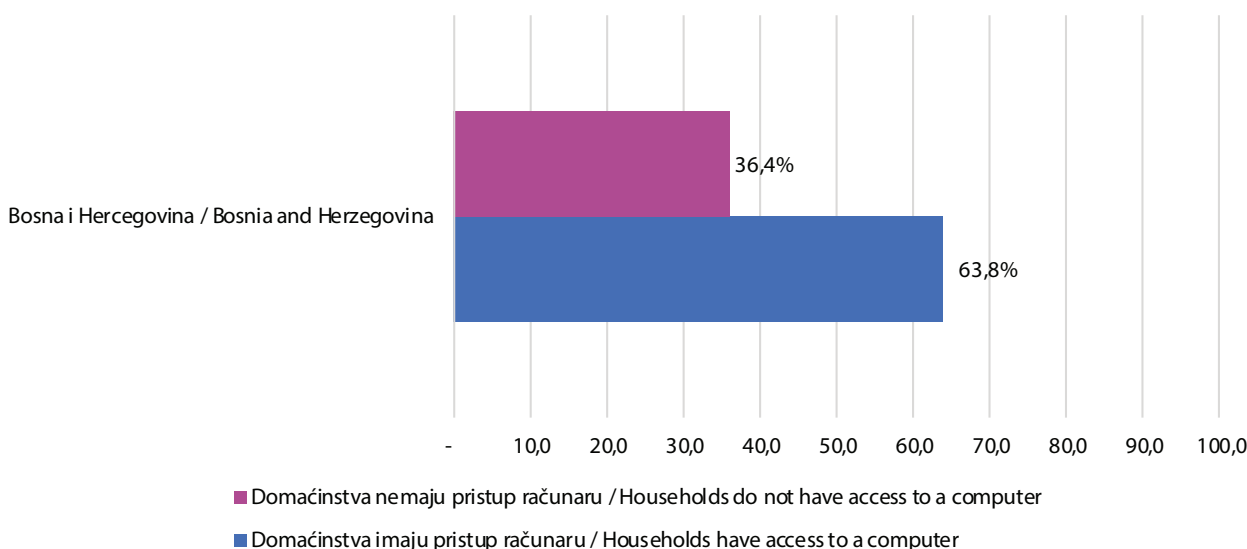
(Any type: desktop, laptop, netbook, tablet, except smartphones)

The results of the survey on the usage of information and communication technologies in households and by individuals (ICT-HH) in Bosnia and Herzegovina have shown the following:

- 63.8% of households have access to a computer
- 36.2% of households do not have computer access

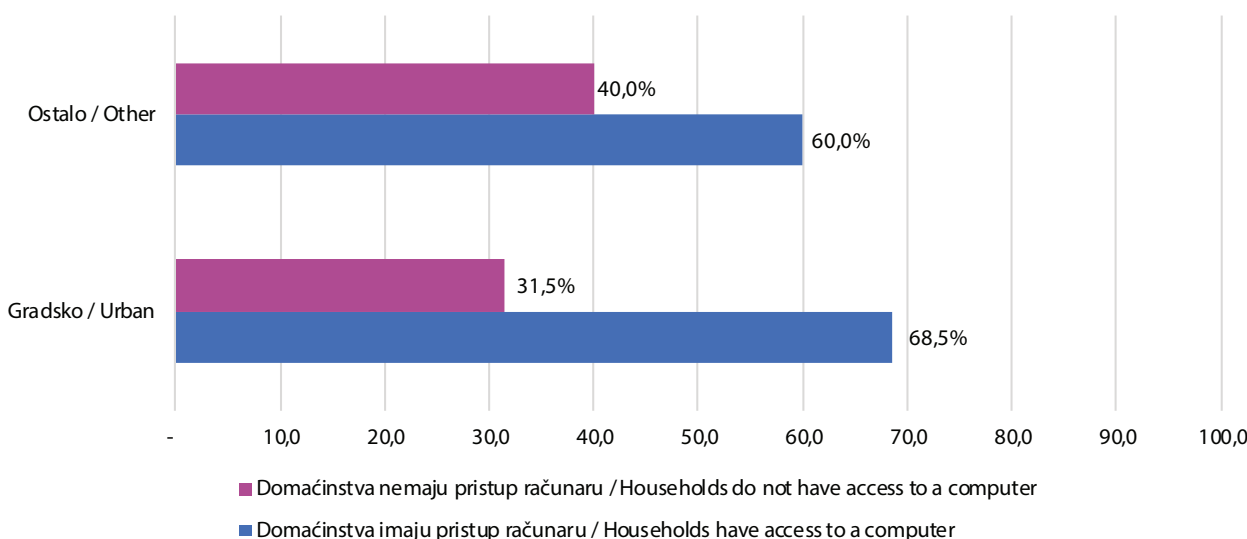
Grafikon 1. Procenat domaćinstava koja imaju pristup računaru, BiH

Graph 1. Households with access to a computer, BiH

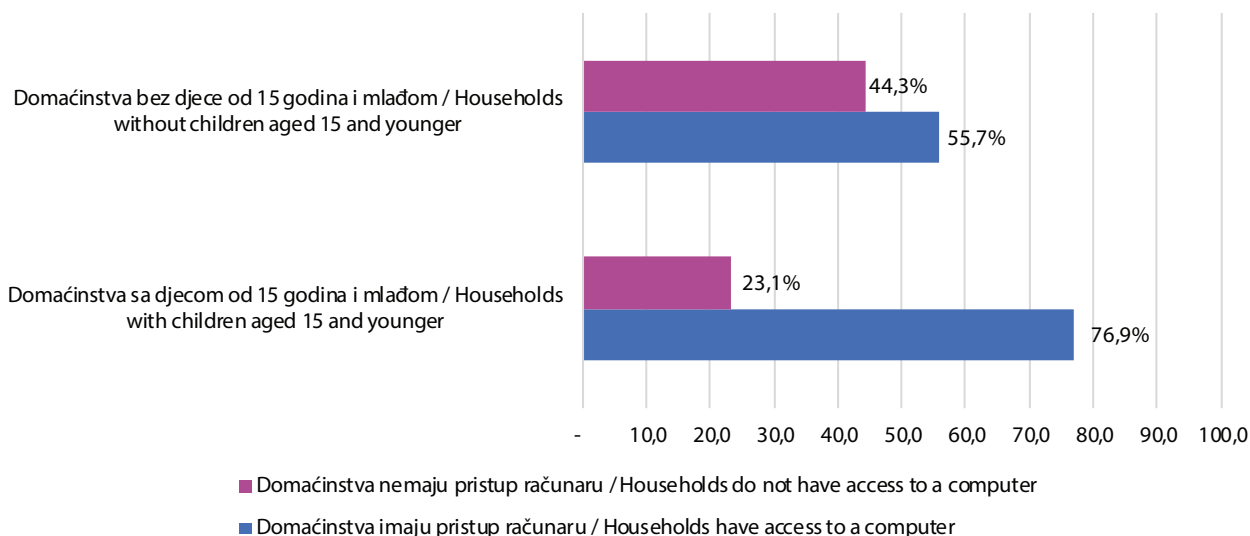


Grafikon 2. Procenat domaćinstava koja imaju pristup računaru, prema tipu naselja, BiH

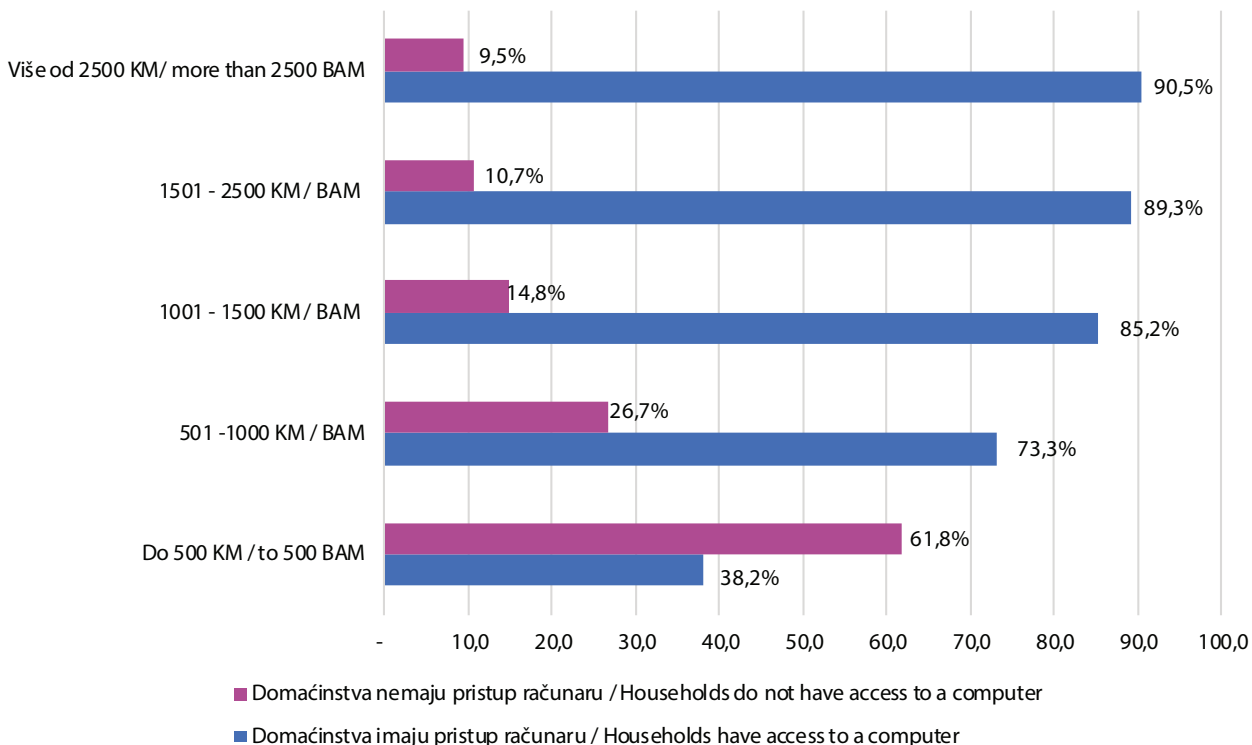
Graph 2. Percentage of households which have access to a computer, by settlement type, BiH



Grafikon 3. Procenat domaćinstava koja imaju pristup računaru, sa djecom od 15 godina i mlađom, BiH
Graph 3. Percentage of households which have access to a computer, with children aged 15 and younger, BiH



Grafikon 4. Procenat domaćinstava koja imaju pristup računaru, prema mjesečnim neto prihodima domaćinstva, BiH
Graph 4. Percentage of households which have access to a computer, according to monthly net income of the household, BiH



**Pojedinci: upotreba računara
(Računar je stolni računar, laptop, netbook ili tablet računar)¹**

U Bosni i Hercegovini je 61,0% osoba, u posljednja tri mjeseca, koristilo računar, 2,1% osoba je koristilo računar prije više od tri mjeseca, a 6,3% prije više od godinu dana. Čak 31,6% osoba nikada nije koristilo računar.

Udio korisnika računara po spolu:

- Muškarci: 64,4%
- Žene: 58,4

Udio korisnika računara prema starosnoj dobi:

- starosna dob od 16-24: 91,8%
- starosna dob od 25-54: 75,5%
- starosna dob od 55-74: 33,3%

**Individuals: usage of computers
(Computers are: desktop, laptop, netbook, tablet)¹**

In Bosnia and Herzegovina, in the last three months 61.0% of persons used a computer, 2.1% of persons used a computer more than three months ago, and 6.3% more than a year ago. 31.6% of respondents have never used a computer.

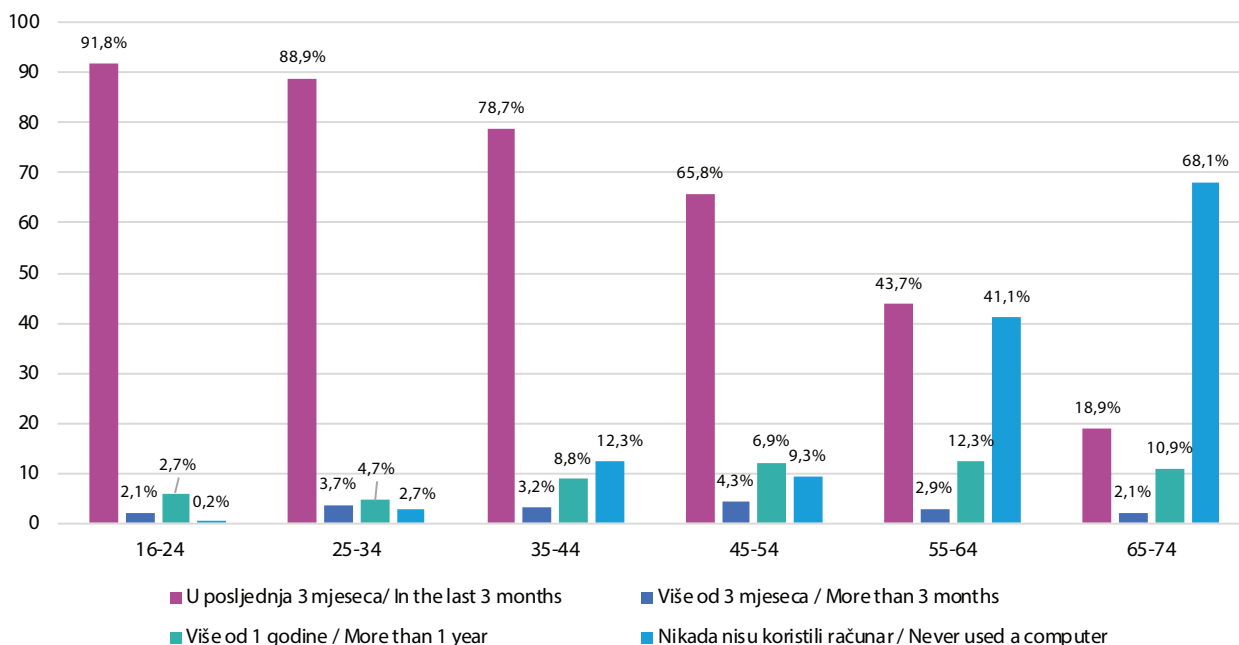
Share of computer users by gender:

- Males: 64,4%
- Females: 58,4%

Share of computer users by age:

- Aged 16-24: 91.8%
- Aged 25-54: 75.5%
- Aged 65-74: 30.3%

**Grafikon 5. Procenat korisnika računara, prema starosnoj dobi
Graph 5. Share of computer users, by age**



Udio korisnika računara prema obrazovnom nivou ispitanika:

- osoba sa višim i visokim obrazovanjem: 92,9%
- osoba sa srednjim obrazovanjem: 70,8%
- osoba sa osnovnim ili niže srednjim obrazovanjem: 29,0%

Share of Internet users, by educational attainment level:

- persons with higher education: 92.9%
- persons with secondary education: 70.8%
- persons with primary or lower secondary education: 29.0%

¹ Referentni period I kvartal 2018.
¹ Reference period I quarter 2018

Internet u domaćinstvima

Rezultati istraživanja o upotrebi informaciono-komunikacionih tehnologija u domaćinstvima i pojedinačno (IKT-D) u Bosni i Hercegovine, pokazali su sljedeće:

- domaćinstava imaju pristup internetu: 69,2%
- domaćinstava nemaju pristup internetu: 29,6%
- domaćinstavo ne zna da li ima pristup internetu: 1,2%

U Bosni i Hercegovini 69,2% domaćinstava ima pristup internetu, što je povećanje od 3,6% u odnosu na 2017. godinu.

Internet in households

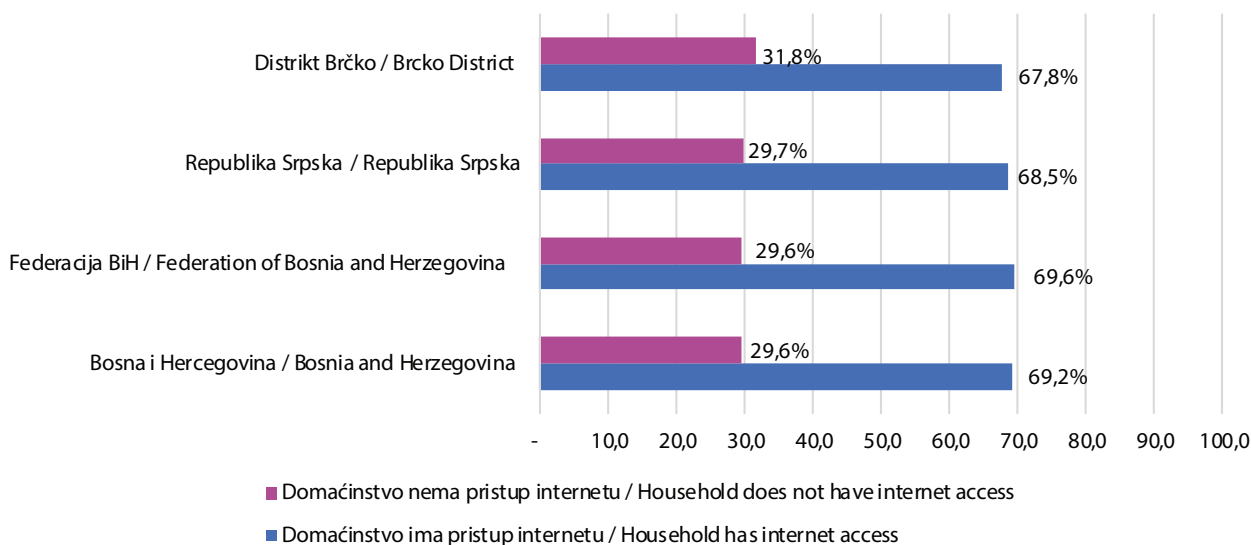
The results of the survey on the Usage of information and communication technologies in households and by individuals (ICT-HH) in Bosnia and Herzegovina have shown the following:

- households have access to the Internet: 69.2%
- households do not have Internet access: 29.6%
- households do not know whether they have Internet access: 1.2%

In Bosnia and Herzegovina, 69.2% of households have internet access, an increase of 3.6% compared to 2017.

Grafikon 6. Procenat domaćinstva koja posjeduju internet priključak, BiH 2018.

Chart 6. Percentage of households that have internet connection, BiH 2018



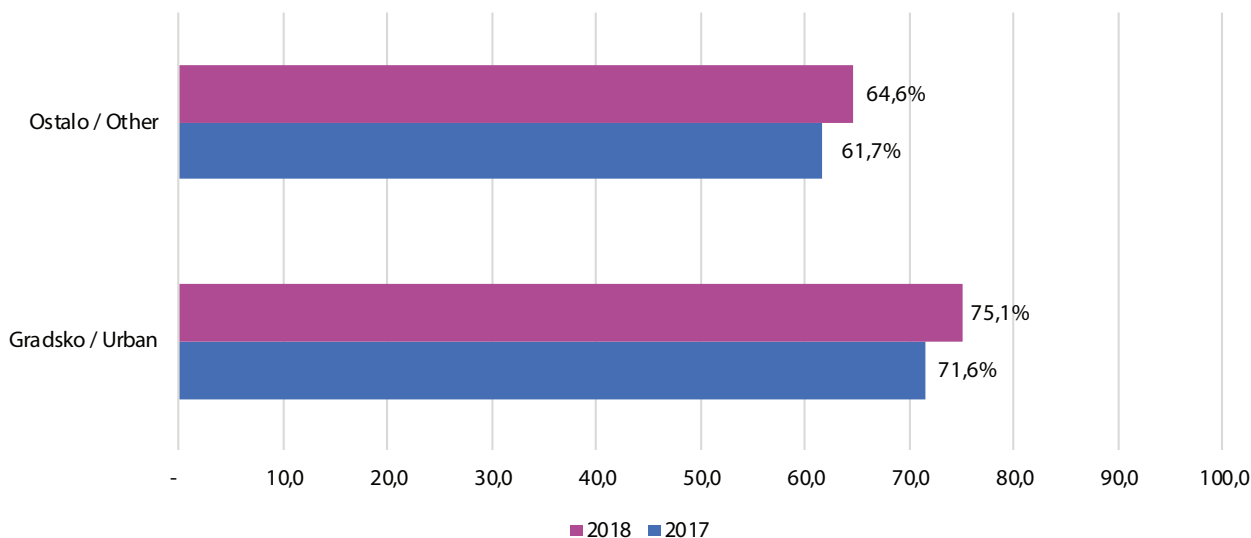
Rezultati istraživanja su pokazali da 82,% domaćinstva koja imaju djecu ispod 16 godina imaju internet priključak.

Rezultati istraživanja su pokazali da 61,3% domaćinstva koja nemaju djecu ispod 16 godina, imaju internet priključak.

The survey results showed that 82.0% of households with children aged under 16 have internet connection.

The 61.3% of households have access to the Internet, without children aged under 16.

Grafikon 7. Procenat domaćinstva koja posjeduju internet priključak, prema tipu naselja
Graph 7. Percentage of households that have internet connection, by settlement type



Razlike postoje i kada uporedimo zastupljenost internet priključaka u gradskim i ostalim naseljima Bosne i Hercegovine: 75,1% naspram 64,6%.

U poređenju sa 2017. godinom, u gradskim naseljima Bosne i Hercegovine stopa rasta je 3,5%, dok taj rast u ostalim djelovima Bosne i Hercegovine iznosi približno 3,0%.

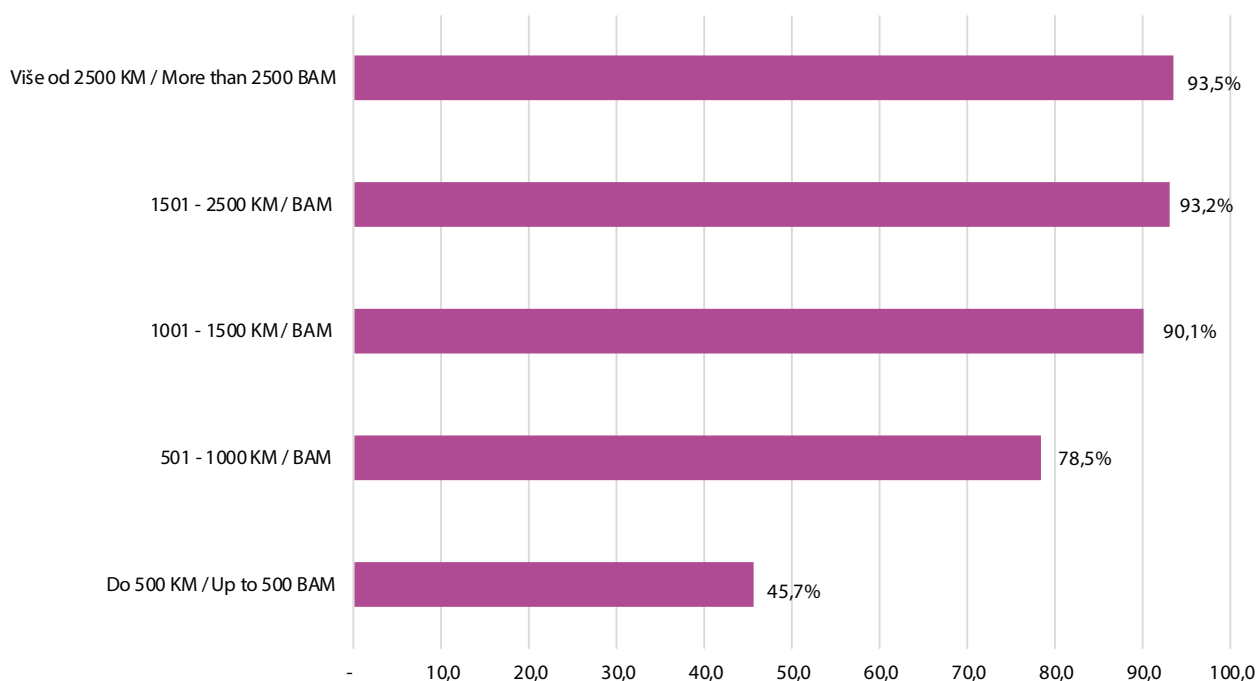
Isto kao i kod pristupa računara u domaćinstvima, veliki jaz postoji u pogledu posjedovanja internet priključka. Kada se pogleda struktura domaćinstava prema visini mjesečnog prihoda internet priključak najviše posjeduju domaćinstva koja imaju mjesečni prihod koji premašuje 2 500 KM (93,5%), dok učešće domaćinstava sa prihodom do 500 KM iznosi svega 45,7%.

There are also discrepancies when we compare the number of internet connections in urban and other settlements in Bosnia and Herzegovina: 75.1% versus 64.6%.

Compared to 2017, in urban settlements in Bosnia and Herzegovina, the growth rate is 3.5%, while this growth in other parts of Bosnia and Herzegovina is about 3.0%.

Same as with access to computers in households, a big gap occurs in terms of having internet connections. When looking at the household structure according to the amount of monthly income, households with monthly income exceeding 2,500 BAM (93.5%) have Internet connection, while the share of households with income up to 500 BAM amounts to only 45.7%.

Grafikon 8. Procenat domaćinstava koja imaju pristup internetu, prema mjesečnim neto prihodima domaćinstva, BiH 2018. / Graph 8. Percentage of households with Internet access, by the monthly net income of the household, BiH 2018



Na osnovu dobijenih rezultata, od ukupnog broja domaćinstava koja posjeduju internet priključak, fiksni širokopoljasni priključak, (npr. DSL, ADSL, VDSL, kablovska, optička vlakna) ima 91,1% domaćinstava u Bosni i Hercegovini.

Širokopoljasna (*broadband*) internet konekcija ne omogućava samo brži pristup internetu, već mijenja cjelokupni način upotrebe interneta budući da omogućava preuzimanje (*download*) informacija sa interneta na znatno brži način od tradicionalne *dial-up* modemske konekcije. U skladu s tim, kao jedan od osnovnih pokazatelja razvijenosti upotrebe IKT-a u Evropskoj uniji od 2005. godine jeste i procenat domaćinstava koja poseduju ovaj vid internet konekcije.

U Bosni i Hercegovini 69,2% domaćinstava ima širokopoljasnu (*broadband*) internet konekciju.

Based on the obtained results, 91.1% of households in Bosnia and Herzegovina have fixed broadband connection (eg DSL, ADSL, VDSL, cable, optical network) from the total number of households with internet connection.

Broadband internet connection not only allows faster access to the Internet, but also changes the overall way of using the Internet, since it allows downloading the information from the Internet in a much faster way than the traditional dial-up modem connection. Consequently, one of the basic indicators of the development of ICT use in the European Union since 2005 is the percentage of households that own this type of Internet connection.

In Bosnia and Herzegovina, 69.2% of households have a broadband internet connection.

Pojedinci: upotreba interneta

U Bosni Hercegovini je 70,1% osoba koristilo internet u posljednja tri mjeseca, 1,7% ispitanika koristilo je internet prije više od tri mjeseca, a 4,0% prije više od godinu dana. Ispitanika koji nikad nisu koristili internet je 24,2%.

U odnosu na 2017. godinu, broj osoba koje su koristile internet u posljednja tri mjeseca povećao se za 5,2%.

Udio korisnika interneta (u posljednja tri mjeseca), prema nivou obrazovanja:

- osobe s višim i visokim obrazovanjem: 96,6%
- osobe sa srednjim obrazovanjem: 80,0%
- osobe sa osnovnim ili niže srednjim obrazovanjem: 40,0%

Individuals: usage of the Internet

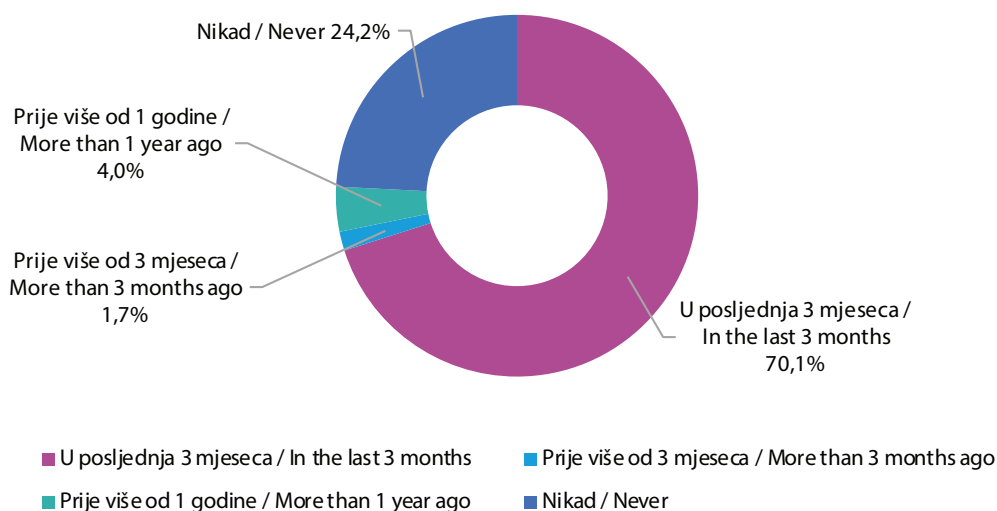
In Bosnia-Herzegovina, 70,1% of persons used the Internet during the last three months, 1,7% of respondents used the internet more than three months ago, and 4,0% more than a year ago. 24,2% of respondents never used the Internet.

Compared to 2017, the number of individuals who used the Internet in the last three months increased by 5.2%

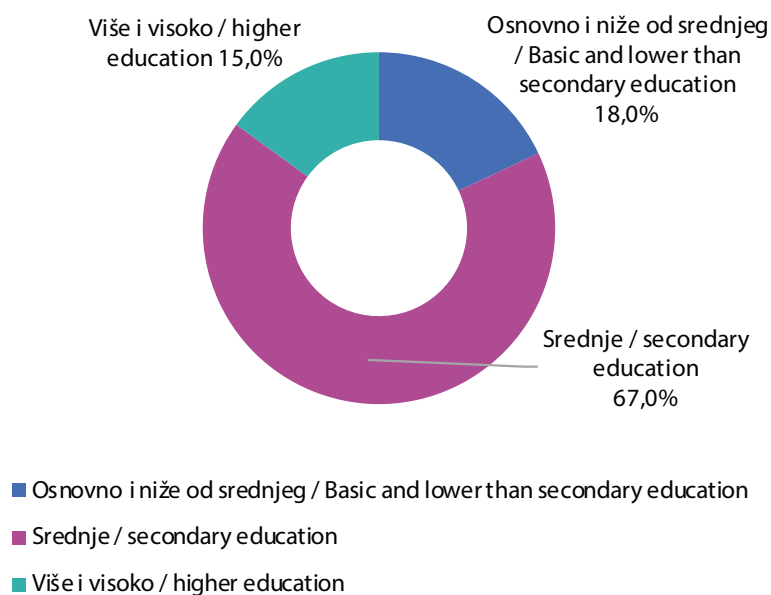
Share of the Internet users (in the last three months), by educational attainment level:

- persons with higher education: 96.6%
- persons with secondary education: 80.0%
- persons with primary or lower secondary education: 40.0%

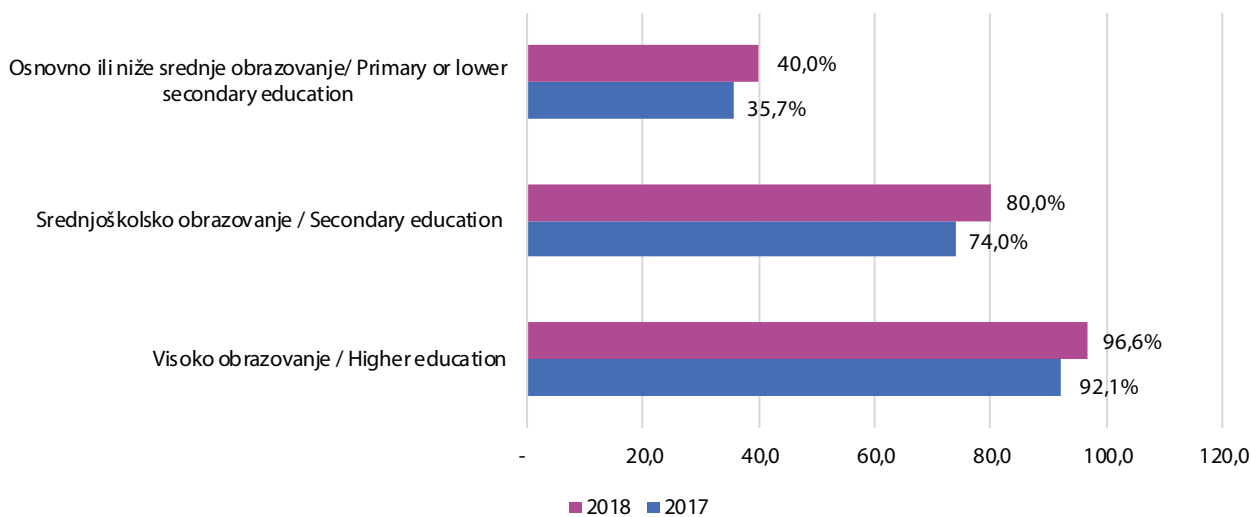
Grafikon 9. Osobe koje su koristile internet
Graph 9. Persons who used the Internet



Grafikon 10. Struktura obrazovanja korisnika interneta
Graph 10. Structure of education of Internet users



Grafikon 11. Udio korisnika interneta (u posljednja tri mjeseca), prema nivou obrazovanja, Bosna i Hercegovina
Graph 11. The share of Internet users (in the last three months), by educational attainment level, Bosnia and Herzegovina



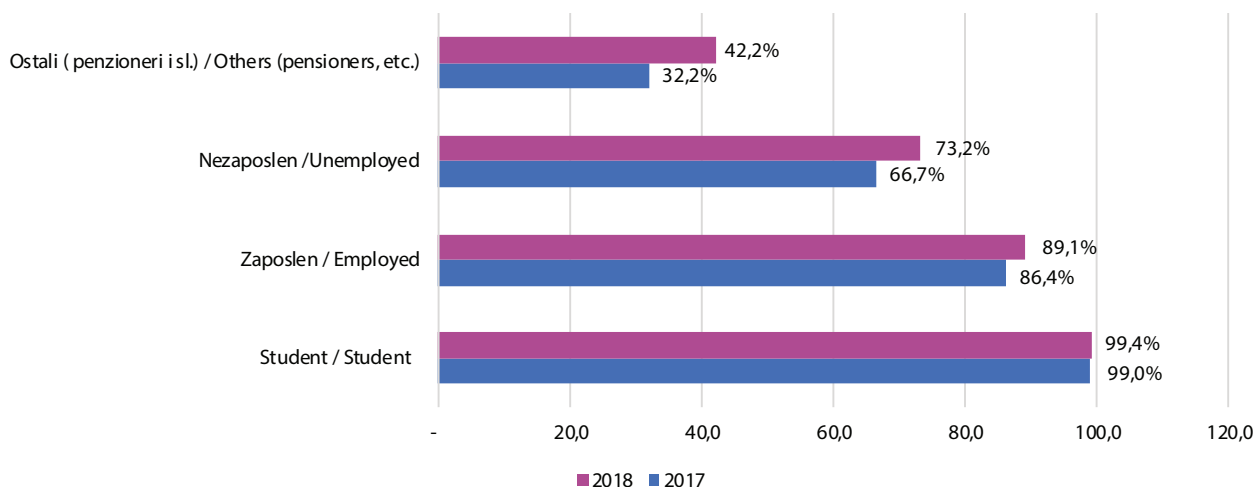
Procenat korisnika interneta u zadnja tri mjeseca, prema radnom statusu:

- 89,1% zaposlenih osoba;
- 73,2% nezaposlenih osoba;
- 99,4% studenata;
- 42,2% ostalih (penzioneri, neaktivne osobe).

The share of Internet users is the last three months, according to the working status:

- 89,1% of employed persons;
- 73,2% of unemployed persons;
- 99,4% of students;
- 42,2% of others (pensioners, inactive persons).

Grafikon 12. Udio korisnika interneta (u posljednja tri mjeseca), prema radnom statusu, Bosna i Hercegovina
Graph 12. The share of Internet users (in the last three months), by the working status, Bosnia and Herzegovina



Na pitanje koliko su često, u prosjeku, koristili internet tokom posljednja tri mjeseca, 87,3 ispitanika odgovorilo je: svakog dana ili skoro svakog dana.

When asked how often they used the Internet in the last three months, on average, 87.3 respondents answered: every day or almost every day.

Više od 1 300 000 osoba koristi internet svakog dana ili skoro svakog dana.

More than 1,300,000 people use the Internet every day or almost every day.

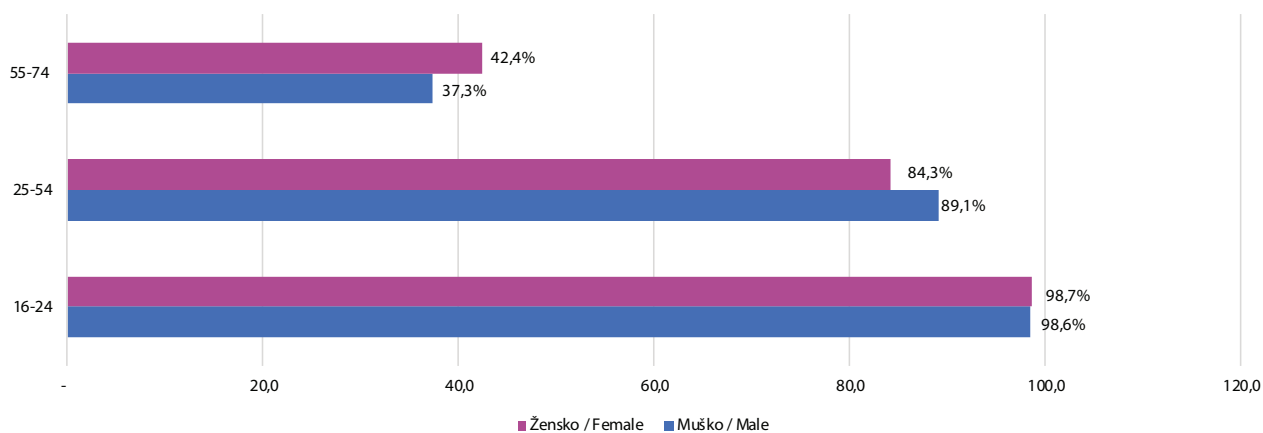
Rezultati istraživanja pokazali su sljedeće:

The results of the survey showed the following:

- starosne dobi od 16-24 godine, 98,7% ispitanika koristi internet;
- starosne dobi od 25-54 godine, 86,5 % ispitanika koristi internet;
- 40,4% ispitanika koristi internet, starosne dobi od 55-74 godine.

- 98.7% of respondents use the internet, age 16-24;
- 86.5% of respondents use the Internet, age 25-54;
- 40.4% of respondents use the internet, age 55-74.

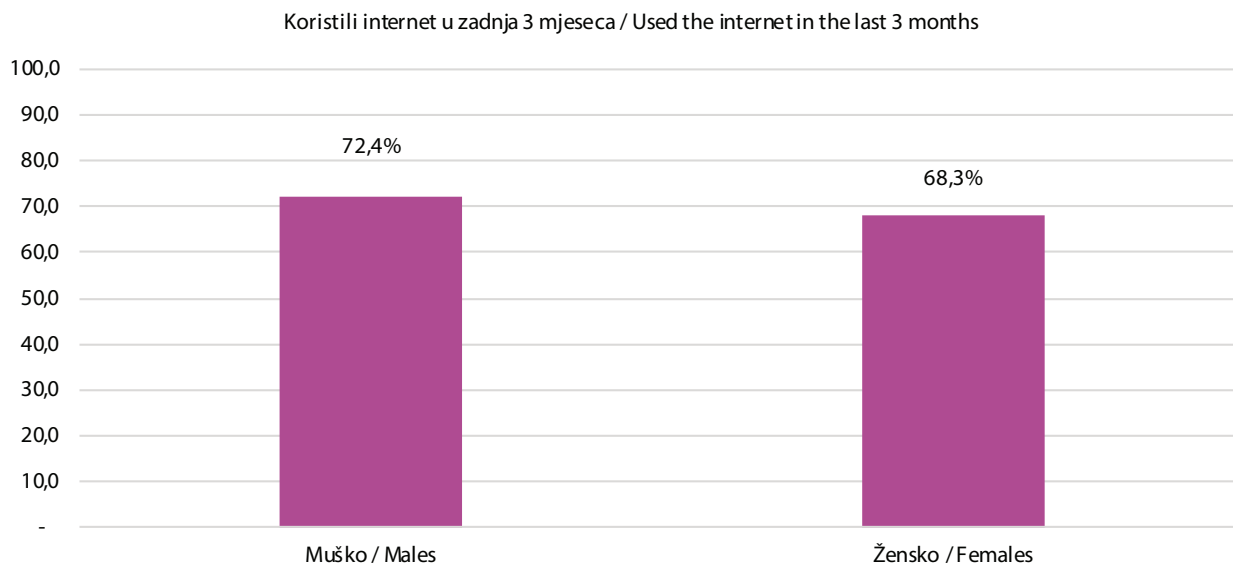
Grafikon 13. Korištenje interneta (u posljednja tri mjeseca), prema spolu i starosti, Bosna i Hercegovina, 2018.
Graph 13. Internet usage (in the last three months), by sex and age, Bosnia and Herzegovina, 2018



Analiza ispitanika prema spolu pokazuje da je u posljednja tri mjeseca 72,4% osobe muškog spola, a 68,3% osobe ženskog spola koristilo internet.

An analysis of respondents by gender shows that in the last three months, 72.4% of males and 68.3% of females used the Internet.

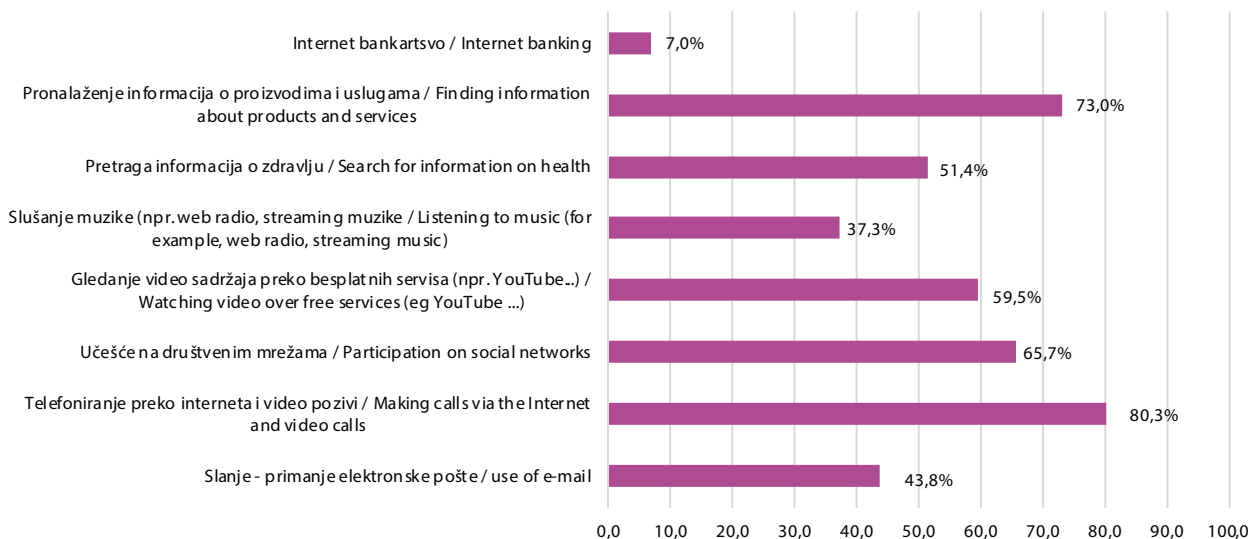
Grafikon 14. Udio korisnika interneta (u posljednja tri mjeseca), prema spolu
Graph 14. The share of Internet users (in the last three months), by gender



Ispitanici koji su koristili internet tokom posljednja tri mjeseca, internet u velikoj mjeri koristili za telefoniranje preko interneta i video pozivi (80,3%), pronalaženje informacija o proizvodima i uslugama (73,0%), učešće na društvenim mrežama kao što su Facebook i Twitter (65,7%), značajan broj ispitanika koristili su internet za gledanje video sadržaja preko besplatnih servisa (npr. YouTube...) (59,5%).

During the last three months, respondents have largely used the Internet for phone calls over the Internet and video calls (80.3%), finding information about products and services (73.0%), participation on social networks like Facebook and Twitter (65.7%), a significant number of respondents used the internet to watch video over free services (eg YouTube ...) (59.5%).

Grafikon 15. Najčešći tipovi korištenja interneta (u privatne svrhe) u posljednja tri mjeseca u procentima, Bosni i Hercegovini, 2018. / Graph 15. Common types of internet usage (for private use) in the last three months, in percentages, Bosnia i Herzegovina 2018



Internet populacija od 16 do 24 godine najčešće je koristi internet za korištenje društvenih mreža (Facebook, Twitter, Instagram) i to sa 76,1%.

The Internet population aged 16 to 24 commonly used the Internet for social networks (Facebook, Twitter, Instagram) amounting to 76.1%.

Internet populacije od 25 do 54 godine kao populacija od 55-74, najčešće je koristila internet za telefoniranje i internet video pozive.

Internet populations aged 25 to 54 as well as the population aged 55-74, most often used the Internet for phone and video calls.

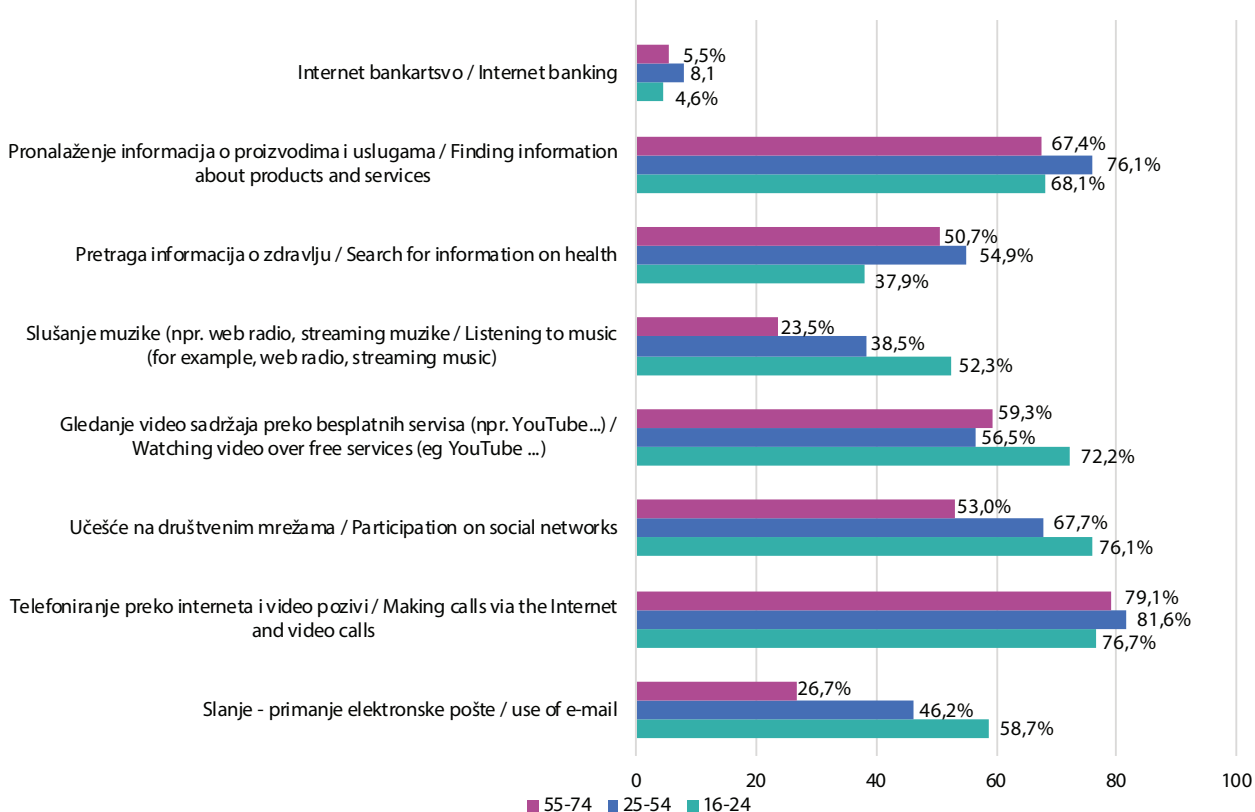
Gledanje video sadržaja preko besplatnih servisa (npr. YouTube...) najviše je koristila internet populacija od 16 do 24 godine, 72,2%.

Watching video over free services (eg YouTube...) was mostly used by the Internet population aged 16 to 24 years, 72.2%.

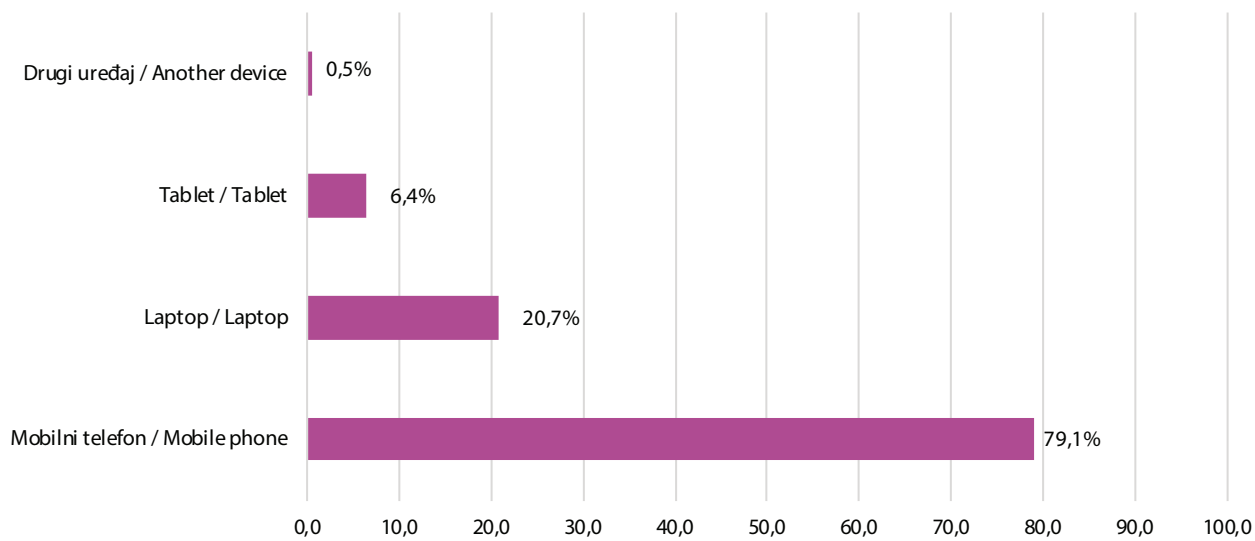
Usluge internet bankarstva najviše koristi populacija od 25 – 54 i on iznosi samo 8,1% što je ipak rast za gotovo 5% od rezultata istraživanja za 2017. godinu.

Internet banking services are mostly used by the population aged 25-54, amounting only to 8.1%, which is still a growth of almost 5% compared to the survey results for 2017.

Grafikon 16. Najčešći tipovi korištenja interneta (u privatne svrhe) u posljednja tri mjeseca u procentima, prema starosnoj dobi / Graph 16. The most common types of internet usage (for private use) in the last three months, in percentages, by age



Grafikon 17. Mobilni uređaji koji se koriste za pristup internetu, van kuće ili posla, u posljednja 3 mjeseca
Graph 17. Mobile devices used to access the Internet away from home or do business in the last 3 months



Javna uprava

Istraživanje pokazuje da samo 18,6% ispitanika koji su koristili internet u privatne svrhe, u posljednjih 12 mjeseci, koristi su elektronske servise javne uprave (*e-government*).

Istraživanje je pokazalo i da je 16,7% internet populacije koristilo internet za dobijanje informacija sa web-sajta javnih institucija, a 11,6 % internet populacije je slalo putem interneta popunjene obrasce javnoj upravi.

Internet populacija starosne dobi od 25-54 godine je najviše koristili usluge javne uprave, 20,9%.

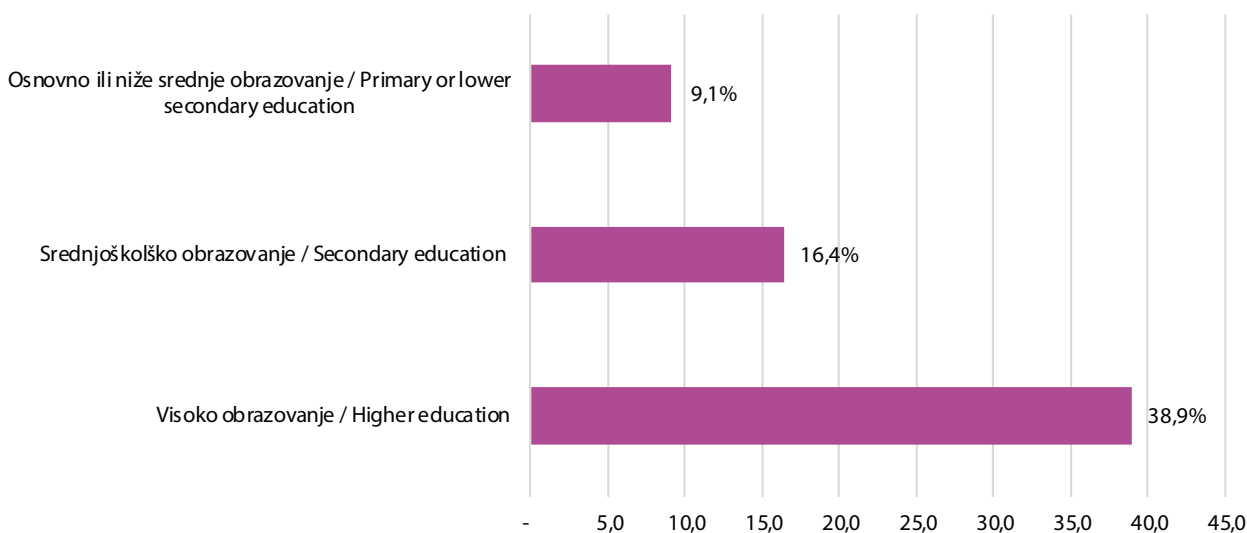
E-government

The survey shows that only 18.6% of respondents who used the Internet for private purposes in the last 12 months, used electronic government services (*e-government*).

The survey also showed that 16.7% of the internet population used the Internet to obtain information from the public institution's website, and 11.6% of the internet population sent filled forms via Internet to the *e-government*.

The Internet population aged 25-54 mostly used the *e-government* services, 20.9%.

Grafikon 18. Upotreba interneta radi korištenja usluga javne uprave u posljednjih 12 mjeseci, prema nivou obrazovanja
Graph 18. Usage of the Internet for electronic government services in the last 12 months, by educational attainment level



Elektronska trgovina

Kada je riječ o vremenskom okviru u kom su korisnici interneta kupovali/poručivali robu ili usluge putem interneta, 19,1% internet korisnika obavilo je kupovinu/poručivanje u posljednja tri mjeseca, 6,2% prije više od tri mjeseca, a 6,6% prije više od godinu dana.

Čak 68,1% korisnika interneta nikada nije kupovalo/poručivalo robu ili usluge putem interneta.

U odnosu na 2017. godinu, broj osoba koje su kupovale/poručivale robu ili usluge putem interneta povećao se za više od 110 000.

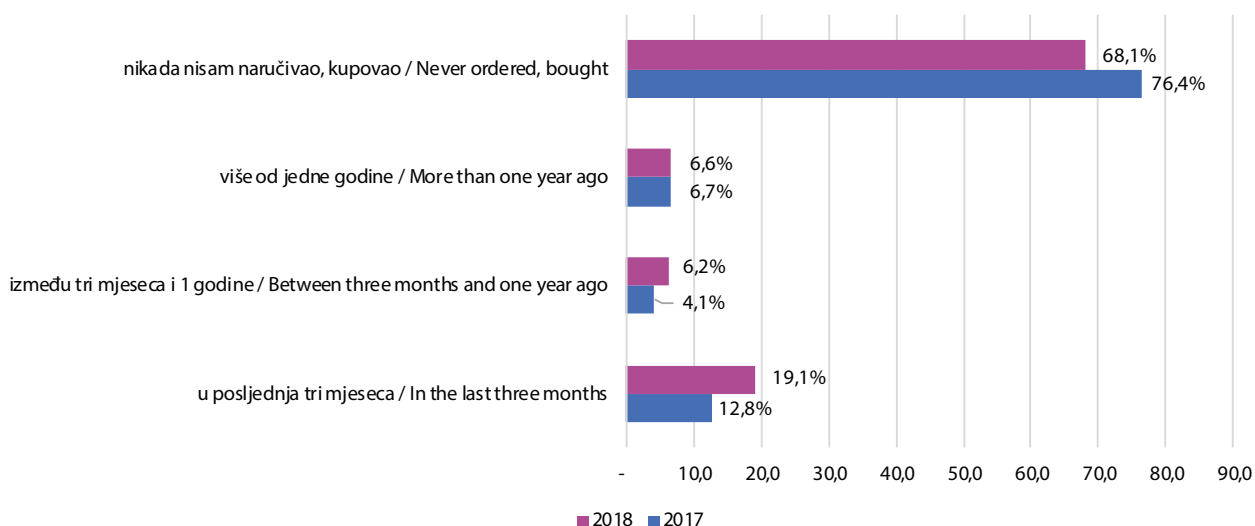
e-commerce

As for the time frame in which the internet users bought/ordered goods or services over the Internet, 19,1% of users conducted a purchase/order in the last three months, 6.2 more than three months ago, and 6.6% more than a year ago.

68,1% of Internet users have never purchased / ordered goods or services over the Internet.

Compared to 2017, the number of people who used the Internet to buy / order goods or services increased by more than 110,000.

Grafikon 19. Posljednji put (u privatne svrhe) kupili/naručili robu ili usluge putem interneta
Graph 19. Last time the Internet was used to buy / order goods or services (for private purposes)



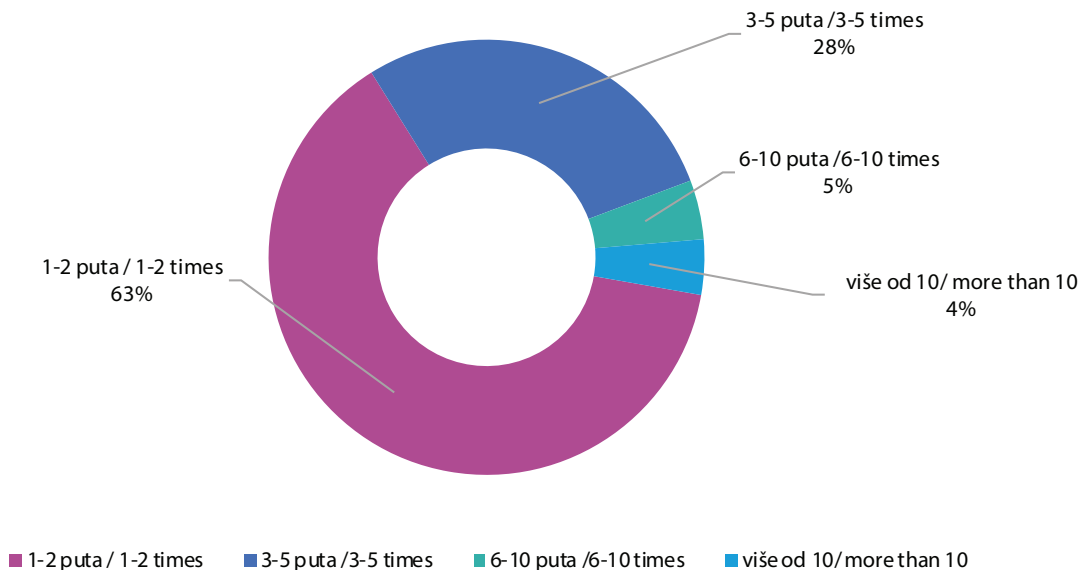
Najveći broj korisnika putem interneta u posljednjih 12 mjeseci, kupuje/naručuje:

- odjeću i sportsku oprema 58,0%;
- dobra za domaćinstva (namještaj, igračke..)16,0%;
- elektronska oprema 11,5%;
- računarska oprema 9,6%;

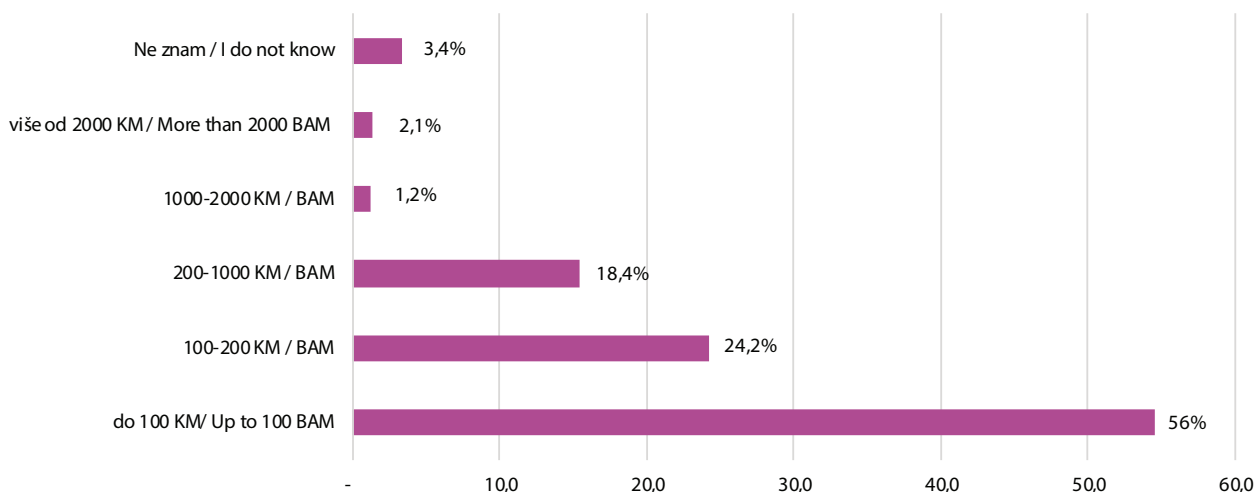
The most common types of products ordered over the Internet in the last 12 months:

- clothing and sports equipment 58,0%;
- household goods 16,0%;
- electronic equipment 11.5%;
- computer hardware 9,6%;

Grafikon 20. Koliko često ste kupovali/naručivali robu ili usluge putem interneta u privatne svrhe u posljednja 3 mjeseca?
Graph 20. How often was the Internet used for purchasing/ordering goods or services for private purposes in the last 3 months?



Grafikon 21. Novčani iznos kupljene/naručene robe ili usluge (pojedinci koji su kupovali zadnjih 3 mjeseca)
Graph 21. The price of the purchased / ordered goods or services (individuals who purchased in the last 3 months)



Istraživanje je pokazalo da je 9,5% internet populacije koristilo prostor za pohranu sadržaja na internetu za spašavanje dokumenata, slika, muzike, video zapisa ili drugih fajlova u privatne svrhe, posljednja 3 mjeseca npr. Google Drive, Dropbox, Windows OneDrive (Formerly Skydrive), iCloud, Amazon Cloud Drive (cloud usluge).

The survey showed that 9.5% of the Internet population used a storage space on the Internet to save documents, images, music, videos or other files for private purposes, in the last 3 months, for example: Google Drive, Dropbox, Windows OneDrive (Formerly Skydrive), iCloud, Amazon Cloud Drive (cloud services).

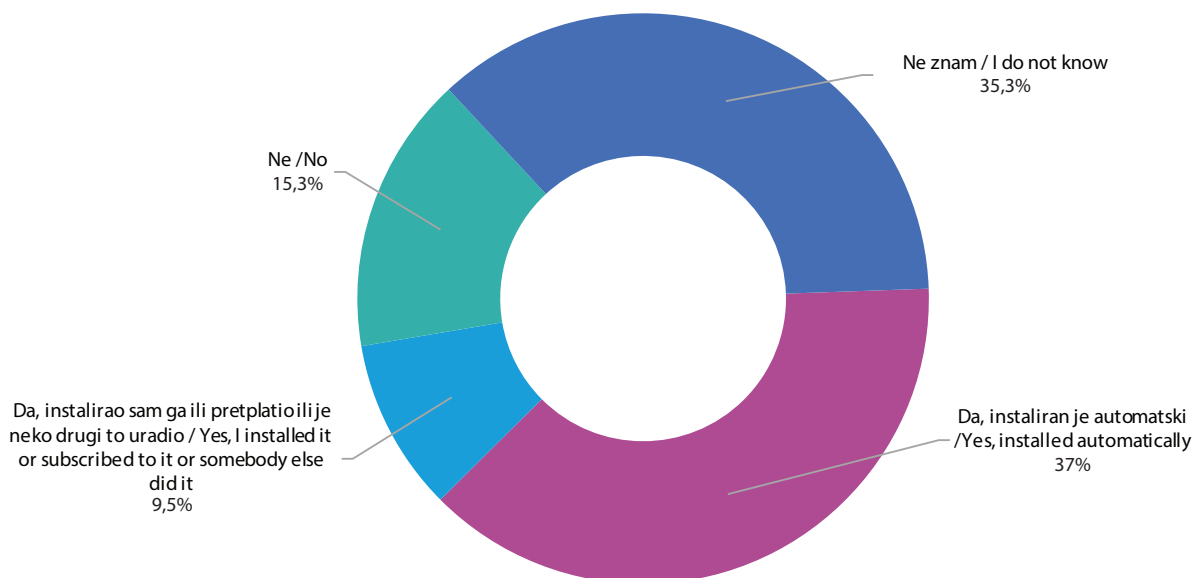
Povjerenje, sigurnost i privatnost

Istraživanje je pokazalo da 76,3% internet populacije koristi pametni telefon i privatne svrhe. Kad je riječ o softverskoj zaštiti ili uslugama kao što su antivirus, antispam, firewall, 37,0% ispitanika je odgovorilo da je zaštita automatski instalirana, dok je 9,5% ispitanika odgovorilo da su samostalno instalirali i pretplatili na njega ili je neko drugi za njih uradio.

Trust, Security and Privacy

The survey showed that 76.3% of the internet population uses smartphones for private purposes. When it comes to software protection or services such as antivirus, antispam, firewall, 37.0% of respondents answered that protection was automatically installed, while 9.5% answered that they installed it or subscribed to it or someone else did for them.

Grafikon 22. Da li vaš pametni telefon ima neku vrstu sigurnosnog softvera ili servisa kao što su antivirus, antispam ili zaštitni zid (firewall)? / Graph 22. Does your smartphone have any type of security software or service such as antivirus, antispam or firewall?



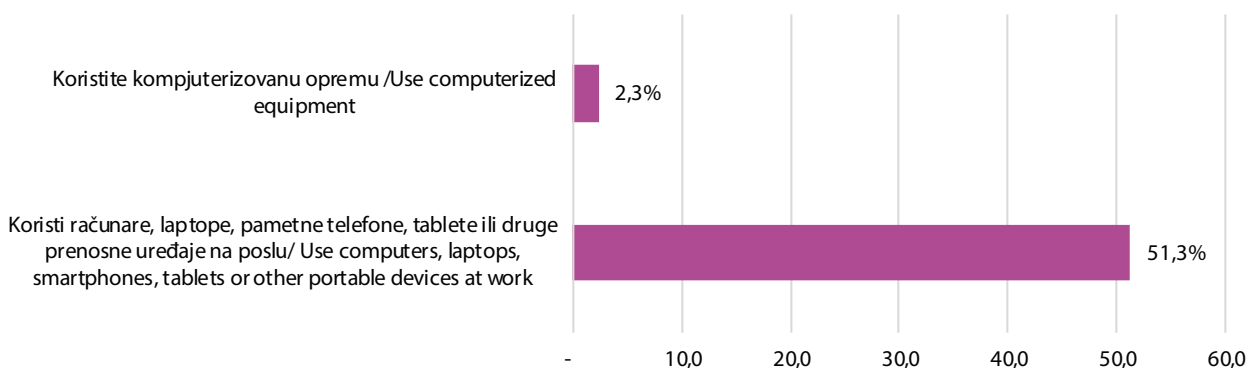
Upotreba informaciono-komunikacionih tehnologija na poslu

ICT usage at work

Istraživanje je pokazalo da 51,3 % ispitanika koji su zaposleni i koji su koristili internet u posljednjih 12 mjeseci, koriste računare, laptove, pametne telefone, tablete i druge prijenosne uređaje na poslu.

The survey showed that 51.3% of employed individuals who used the Internet in the past 12 months use computers, laptops, smartphones, tablets and other portable devices at work.

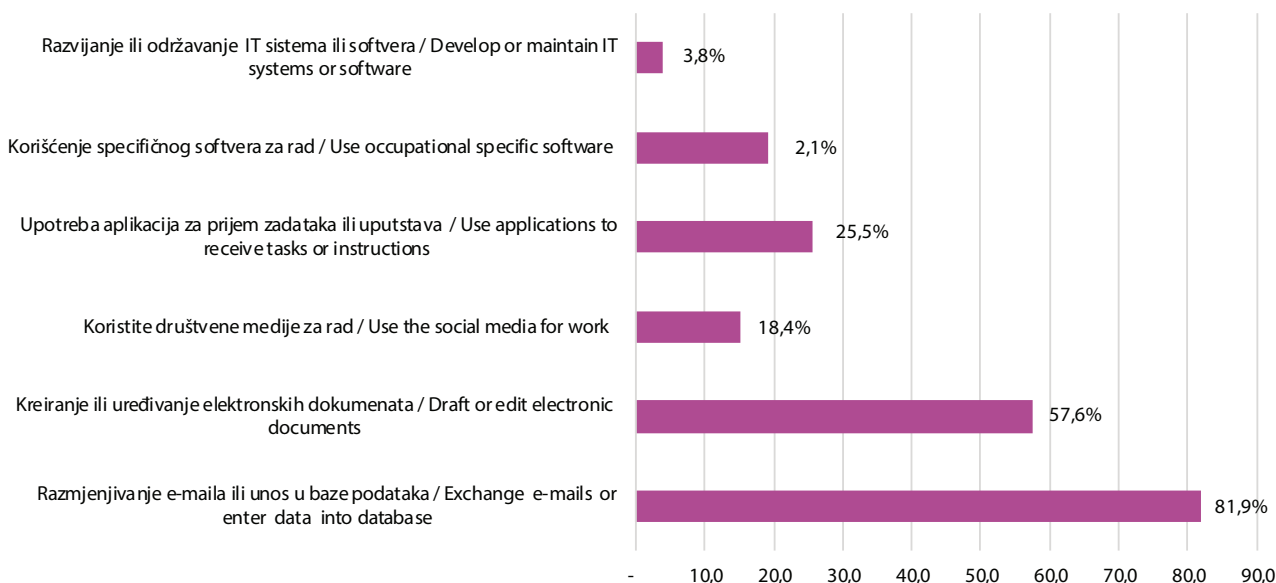
Grafikon 23. Da li koristite računare, laptove, pametne telefone, tablete ili drugu kompjuterizovanu opremu na poslu?
Graph 23. Do you use computers, laptops, smartphones, tablets or other computerized equipment at work?



Na pitanje koje aktivnosti provode na poslu najmanje jednom sedmično, 81,9% internet populacije koji su zaposleni, je odgovorilo razmjena imejlova ili unos podataka u bazu, dok 57,6% ispitanika za kreiranje ili uređivanje elektronskih dokumenata.

When asked what activities they do at work at least once a week, 81.9% of the Internet population who are employed answered e-mail exchange or data entry into a database, while 57.6% of respondents answered drafting or editing electronic documents.

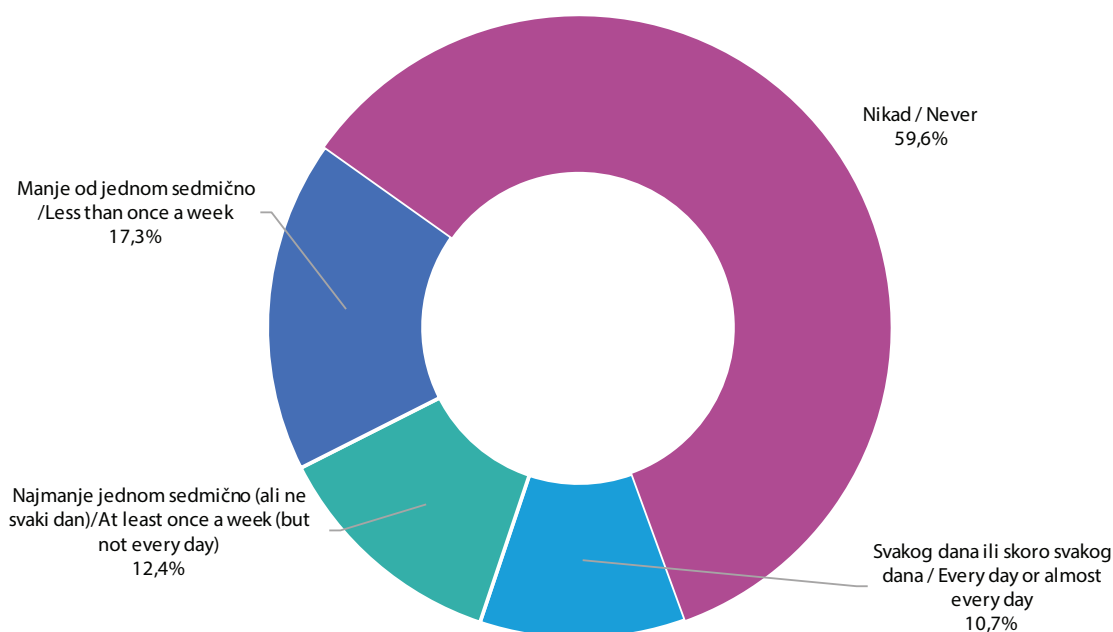
Grafikon 24. Da li provodite neke od sljedećih aktivnosti na poslu najmanje jednom sedmično?
Graph 24. Do you carry out any of the following activities at work at least once a week?



Istraživanje je pokazalo da 10,7% ispitanika koji su zaposleni i koji koriste računare, laptope, pametne telefone, tablete i drugu kompjuterizovanu opremu na poslu u posljednjih 12 mjeseci, svaki dan ili skoro svaki dan radi od kuće, njih 12,4% radi od kuće najmanje jednom sedmično (ali ne svaki dan). Manje od jednom sedmično radi od kuće 17,3% ispitanika, dok 59,6% ispitanika je odgovorilo da nikad nisu radili od kuće.

The survey showed that 10.7% of respondents who are employed and who use computers, laptops, smartphones, tablets and other computerized equipment at work in the last 12 months, every day or almost every day work from home, 12.4% work from home at least once a week (but not every day). Less than once a week 17.3% of respondents work from home, while 59.6% of respondents answered that they never worked from home.

Grafikon 25. Koliko često ste radili od kuće u posljednjih 12 mjeseci?
Graph 25. How often did you work from home in the last 12 months?



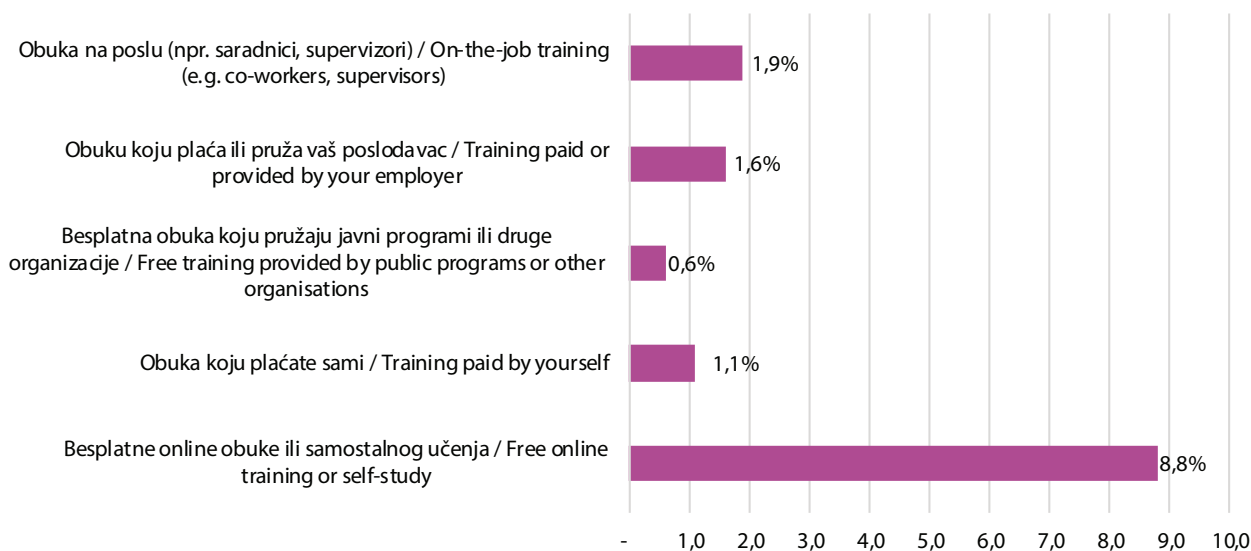
E-vještine

Na pitanje koje ste od navedenih aktivnosti učenja provodili u cilju poboljšanja vještina u vezi sa upotrebom računara, softvera ili aplikacija u posljednjih 12 mjeseci, 8,8% internet korisnika je odgovorilo besplatna online obuka ili samostalno učenje, dok je 1,6% ispitanika odgovorilo, obuka plaćena ili obezbijedena od strane poslodavca.

e-skills

When asked which of the above learning activities were conducted in order to improve skills related to the use of computers, software or applications in the last 12 months, 8.8% of Internet users answered free online training or self-study, while 1.6% respondents answered training paid or provided by the employer.

Koje ste aktivnosti učenja preduzimali da biste poboljšali vještine u vezi sa upotrebom računara, softvera u posljednjih 12 mjeseci? / Graph 26. What learning activities have you undertaken to improve skills related to the usage of computers, software in the last 12 months?



PREDUZEĆA
ENTERPRISES

Uzorak

Istraživanje o upotrebi informaciono-komunikacionih tehnologija u preduzećima provedeno je na reprezentativnom uzorku od 2.579 preduzeća na teritoriji Bosne i Hercegovine. Stopa odgovora je 89,4% (2.305 preduzeća).

Sample

A survey on the Usage of information and communication technologies in enterprises was conducted on a representative sample of 2,579 enterprises on the territory of Bosnia and Herzegovina. The response rate was 89,4% (2,305 enterprises).

Neto uzorak	10 do 49 zaposlenih	50 do 249 zaposlenih	250 i više zaposlenih	Ukupno
<i>Net sample</i>	<i>10 to 49 employees</i>	<i>50 to 249 employees</i>	<i>250 and more employees</i>	<i>Total</i>
Proizvodnja <i>Manufacture</i>	362	332	88	782
Snabdijevanje električnom energijom, plinom, parom ivodom; upravljanje otpadnim vodama / <i>Electricity, gas, steam and electricity supply water; waste management</i>	48	53	19	120
Građevinarstvo <i>Construction</i>	128	87	8	223
Trgovina na veliko i malo <i>Wholesale and retail trade</i>	390	191	40	621
Saobraćaj i skladištenje <i>Traffic and storage</i>	80	37	11	128
Usluge smještaja i ishrane <i>Accommodation services and food</i>	67	28	1	96
Informisanje i komunikacije <i>Information and communication</i>	78	42	7	127
Poslovanje nekretninama <i>Real estate</i>	26	9	1	36
Stručne, naučne i tehničke delatnosti <i>Professional, scientific and technical activities</i>	60	24	1	85
Administrativne i pomoćne uslužne djelatnosti / <i>Administrative and auxiliary service activities</i>	34	27	7	68
Popravak i održavanje računara i komunikacione opreme / <i>Repair and maintenance of computers and communication equipment</i>	18	1	0	19
Ukupno <i>Total</i>	1.291	831	183	2.305
Od čega IKT sektor <i>ICT sector (u: 26.1-26.4+ 26.8+46.5+ 58.2+61+62+63.1+95.1)</i>	80	25	4	109

GLAVNI POKAZATELJI

Računari i računarske mreže u preduzećima

Rezultati istraživanja pokazuju da 99,5% preduzeća na teritoriji Bosne i Hercegovine koristi računar u svom poslovanju.

Korištenje računara prema veličini preduzeća:

- Mala preduzeća (10-49 zaposlenih), 99,4%;
- Srednja preduzeća (50-249 zaposlenih), 99,7%;
- Velika preduzeća (250 i više zaposlenih), 100,0%.

Procenat korištenja računara u preduzećima, po entitetima:

- Federacija BiH, 99,3%;
- Republika Srpska, 100,0%;
- Distrikt Brčko, 99,3%..

MAIN INDICATORS

Computers and computer networks in enterprises

The results of the survey show that 99.5% of enterprises on the territory of Bosnia and Herzegovina use a computer for conducting their business.

Computer usage according to enterprise size:

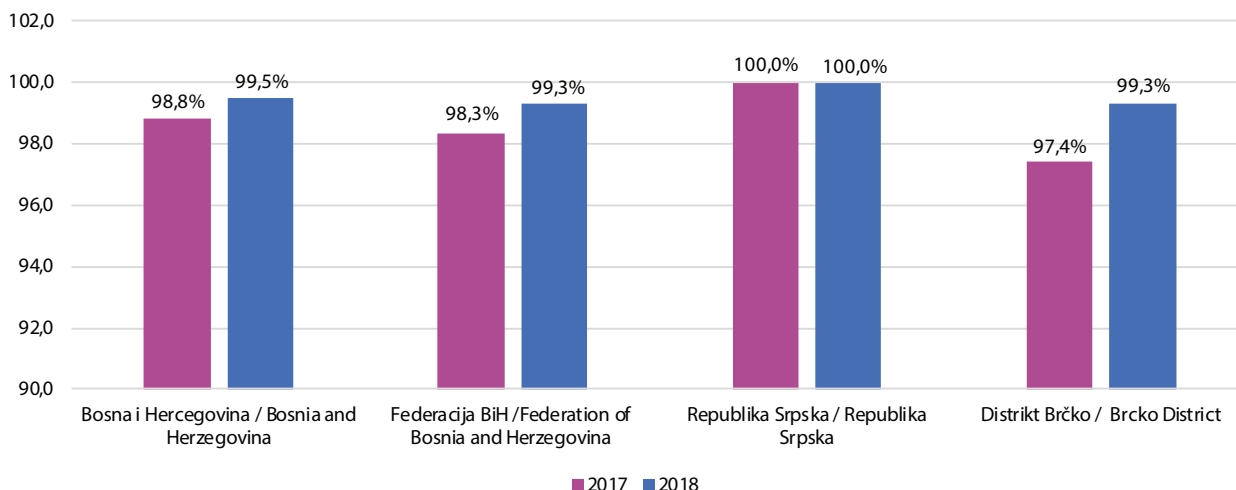
- Small enterprise (10-49 employees), 99.4%
- Medium enterprises (50-249 employees), 99.7%
- Large enterprises (250 or more employees), 100.0%.

Percentage of computer usage in enterprises by entities:

- Federation of Bosnia and Herzegovina, 99.3%;
- Republika Srpska, 100.0%;
- Brcko District, 99.3%.

Grafikon 1. Procenat korištenja računara u preduzećima, po entitetima

Graph 1. Percentage of computer usage in enterprises by entities



Rezultati istraživanja pokazuju da 42,4% zaposlenih koristi računar u poslovne svrhe.

- 38,0% zaposlenih koristi računar sa pristupom internetu u poslovne svrhe.

Zaposleni koriste računar u poslovne svrhe prema veličini preduzeća:

- Mala preduzeća (10-49 zaposlenih), 44,0%;
- Srednja preduzeća (50-249 zaposlenih), 39,6%;
- Velika preduzeća (250 i više zaposlenih), 43,8%.

Zaposleni koriste računar u poslovne svrhe, po entitetima:

- Federacija BiH, 43,4%;
- Republika Srpska, 40,6%;
- Distrikt Brčko, 39,5%.

The results of the survey show that 42.4% of employees use a computer for business purposes.

- 38.0% of employees use a computer with Internet access for business purposes.

Employees using a computer for business by enterprise size:

- Small enterprise (10-49 employees), 44.0%
- Medium enterprises (50-249 employees), 39.6%
- Large enterprises (250 or more employees), 43.8%.

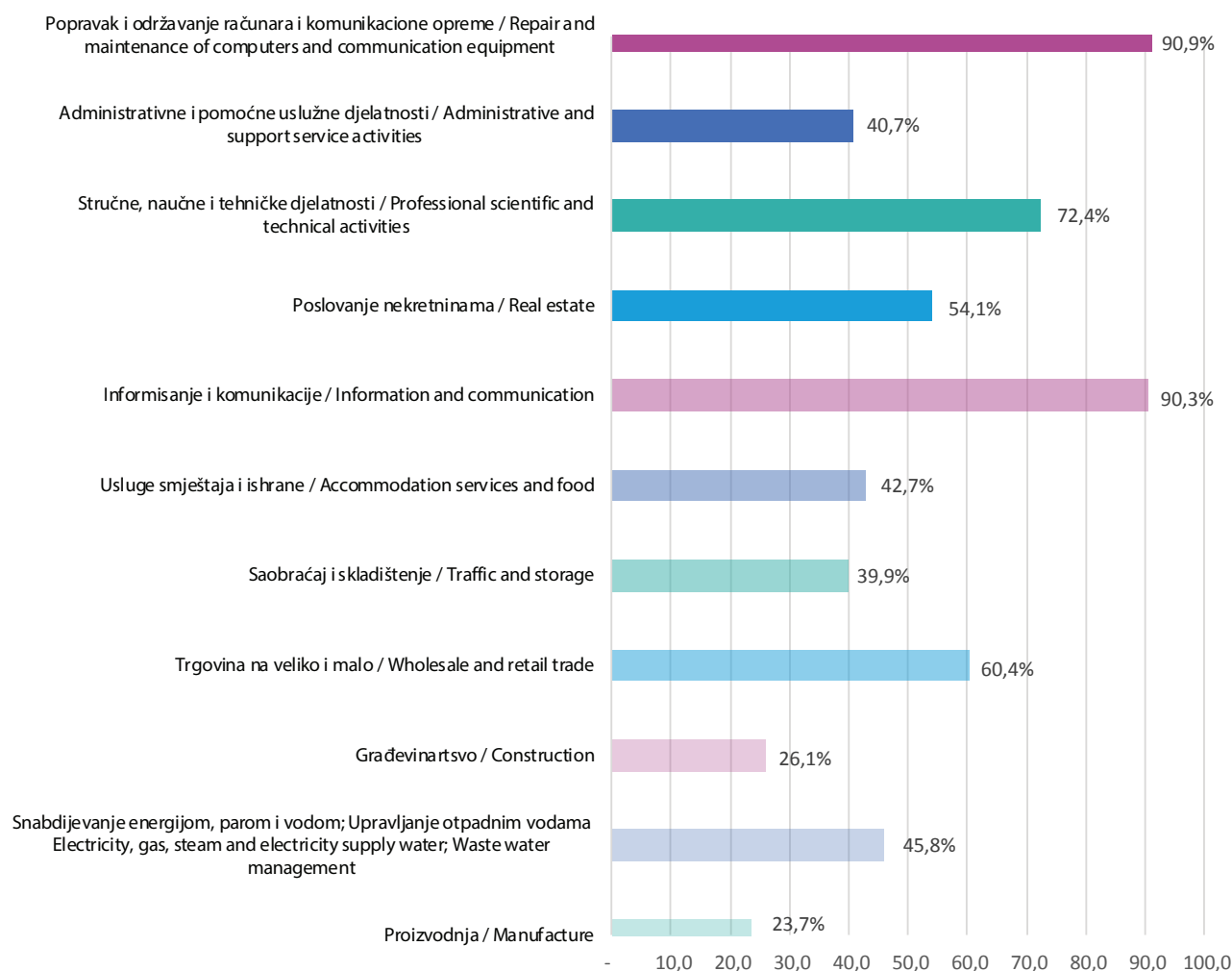
Employees using computers for business, by entities:

- Federation of Bosnia and Herzegovina, 43.4%;
- Republika Srpska, 40.6%;
- Brcko District, 39.5%.

Rezultati istraživanja pokazuju da zaposleni u sektoru „Popravak i održavanje računara i komunikacione opreme“ i „Informisanje i komunikacija,“ najviše koriste računar i to njih više od 90,0%, a zaposleni u sektoru „Proizvodnja“ najmanje koriste računar u poslovne svrhe, tek nešto više od 23,7% .

The results of the survey show that employees in the sector “Repair and maintenance of computers and communication equipment” and “Information and communication” use computers the most, more than 90.0%, while the employees in the “Manufacturing” sector use computer for business the least, just over 23,7% .

Grafikon 2. Procenat zaposlenih koji koriste računar (u poslovne svrhe) prema djelatnosti preduzeća
Graph 2. Percentage of employees who use a computer (for business purposes), by enterprise activity



Na osnovu istraživanja došlo se do podatka da 17,5% preduzeća zapošljava IKT stručnjake.

According to the survey, 17.5% of enterprises employ ICT specialists.

Preduzeća koja zapošljavaju IKT stručnjake, prema veličini preduzeća:

- Mala preduzeća (10-49 zaposlenih), 12,5%;
- Srednja preduzeća (50-249 zaposlenih), 29,3%;
- Velika preduzeća (250 i više zaposlenih), 66,3%.

Enterprises employing ICT specialists, by enterprise size:

- *Small enterprise (10-49 employees), 12.5%*
- *Medium enterprises (50-249 employees), 29.3%*
- *Large enterprises (250 or more employees), 66.3%*

Internet u preduzećima

Rezultati istraživanja o upotrebi informaciono-komunikacionih tehnologija u preduzećima (IKT-P) u Bosni i Hercegovine, pokazali su sljedeće:

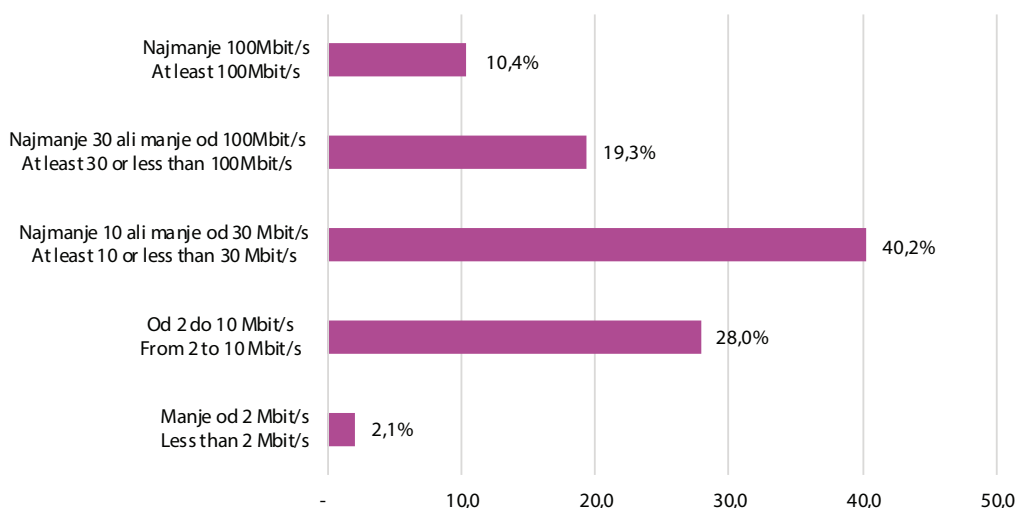
- Da 99,3% preduzeća imaju pristup internetu,
- Od ukupnog broja preduzeća koja imaju pristup internetu, fiksni širokopojasni priključak (npr. ADSL, SDSL, VDSL, kablovske mreže, optičke mreže) posjeduje 99,6% preduzeća;
- mobilnu širokopojasnu (broadband) internet konekcija koristi 62,2% preduzeća putem prijenosnih uređaja koristeći mobilnu telefonsku mrežu 3 G.

Internet in enterprises

The results of the survey on the Usage of information and communication technologies in enterprises (ICT-ENT) in Bosnia and Herzegovina have shown the following:

- 99.3% of enterprises have Internet access,
- Out of the total number of enterprises with internet access, fixed broadband (eg ADSL, SDSL, VDSL, cable networks, optical networks) is used by 99.6% of enterprises;
- The mobile broadband internet connection is used 62.2% of enterprises via mobile devices using the mobile telephone network 3 G.

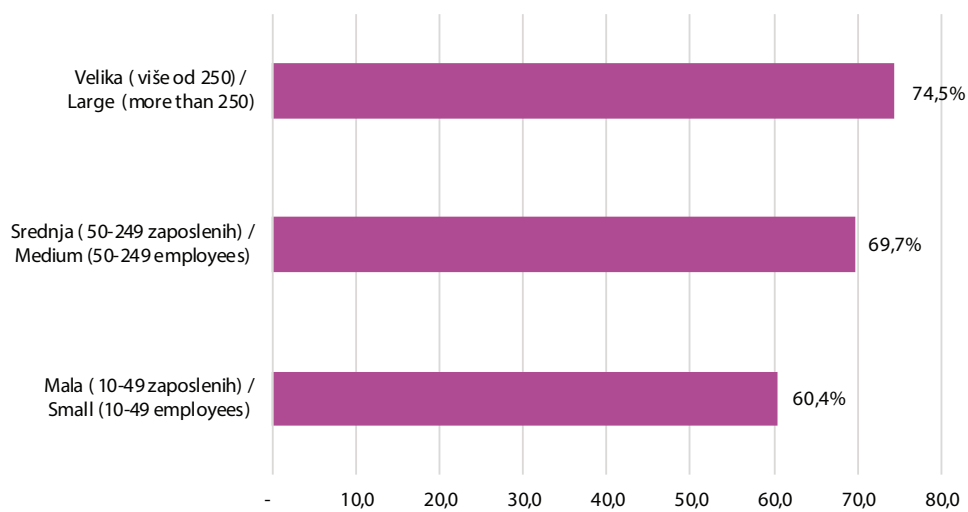
Grafikon 3. Koja je maksimalna brzina internet konekcije u Vašem preduzeću (definisana ugovorom sa internet provajderom)? / Graph 3. What is the maximum speed of the Internet connection in your enterprises (defined by agreement with the Internet provider)?



Analiza preduzeća prema veličini pokazuje nam da mobilnu internet konekciju upotrebom prijenosnih uređaja najviše koriste velika preduzeća (74,5%).

Enterprise analysis by size shows us that the mobile Internet connection using the mobile devices is mostly used by large enterprises (74.5%).

Grafikon 4. Preduzeća prema veličini, koriste mobilni internet preko prijenosnih uređaja
Graph 4. Enterprises by size, which use mobile internet via portable devices



Web-sajt

- Web-sajt posjeduje 65,8% preduzeća, što čini povećanje od oko 2,0% u odnosu na 2017. godini.

Kada pogledamo strukturu preduzeća prema veličini, dobijamo sljedeće rezultate:

- 86,2% velikih preduzeća posjeduje web-sajt;
- 81,6% srednjih preduzeća posjeduje web-sajt;
- 61,0% malih preduzeća posjeduje web-sajt.

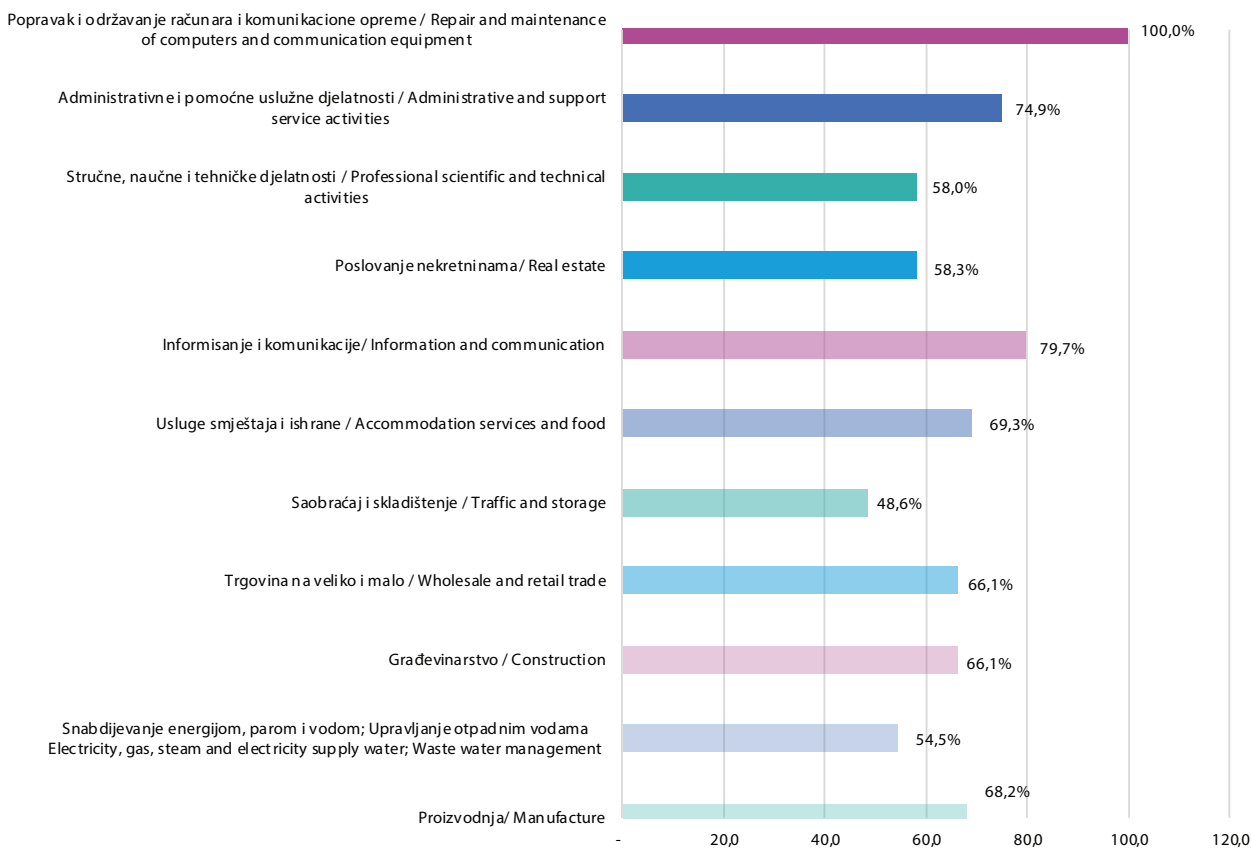
Website

- 65.8% of enterprises have a website, which is an increase of about 2.0% compared to 2017.

When we look at the structure of enterprises by size, we get the following results:

- 86.2% of large enterprises have a website;
- 81.6% of medium-sized enterprises have a website;
- 61.0% of small businesses have a website.

Grafikon 5. Procenat preduzeća koja imaju web-sajt, prema djelatnosti preduzeća
Graph 5. Percentage of enterprises that have a website, by enterprise activity



Preduzeća posredstvom web-sajta najčešće pružaju:

- opis robe ili usluga, cjenovnik (83,1%);
- sadržaj na web-sajtu je prilagođen redovnim posjetiocima (78,3%);

Via their website, enterprises most often provide:

- description of goods or services, pricelists (83.1%);
- content on the website adapted to regular visitors (78.3%);

Istraživanje je pokazalo da 22,5% preduzeća plaća oglašavanje na internetu.

Oglašavanje na internetu najčešće plaćaju velika preduzeća (250 zaposlenih i više) i to njih 36,2%.

The survey showed that 22.5% of enterprises pay for advertising on the Internet.

Advertising on the Internet is paid mostly by large enterprises (250 or more employees), 36.2%.

Upotreba cloud usluga

Usluge cloud servisa plaća putem interneta 8,4% preduzeća, što je povećanje više od 3,0% u odnosu na 2017. godinu.

Klaud servisi podrazumijevaju IKT servise kojima se pristupa putem interneta radi upotrebe softvera, prostora za skladištenje podataka i sl.

Servisi imaju sljedeće karakteristike:

- nalaze se na serverima pružalaca usluga (provajdera);
- mogu da se upotrebljavaju na zahtjev korisnika;
- plaćaju se na osnovu načina upotrebe, kapaciteta prostora

Enterprises and social networks

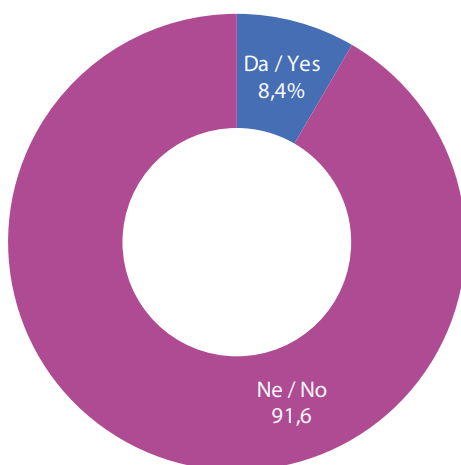
8.4% of enterprises pay for cloud services via the internet, which is an increase of more than 3.0% compared to 2017.

Cloud services include ICT services that are accessed via the Internet for the purpose of using softwares, storage space, etc.

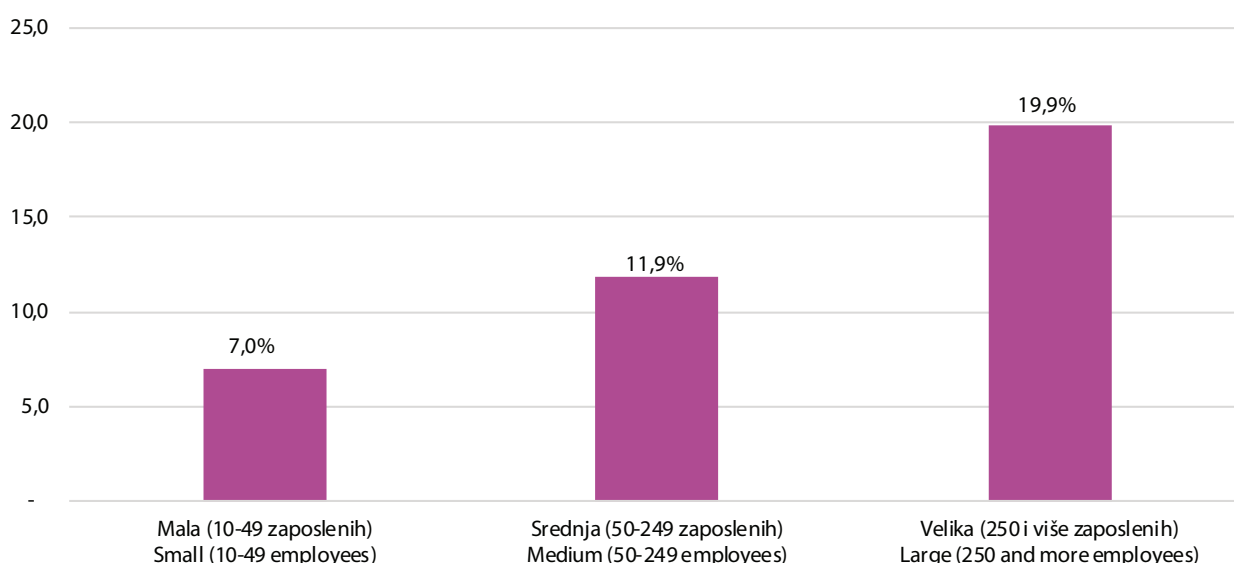
The services have the following characteristics:

- they are located on the servers of service providers;
- they can be used at the request of the user;
- they are paid on the basis of usage, space capacity

Grafikon 6. Procenat preduzeća koja plaćaju usluge cloud servisa putem interneta
Graph 6. The percentage of enterprises that pay cloud services via the Internet



Grafikon 7. Procenat preduzeća koja plaćaju cloud usluge, prema veličini preduzeća
Graph 7. The percentage of enterprises that pay the cloud services, by enterprise size



Elektronska trgovina

Tokom 2017. godine, 21,7% preduzeća u Bosni i Hercegovini primalo je narudžbe za proizvode ili usluge putem interneta, što čini povećanje od gotovo 6,0% u odnosu na 2016. godinu.

Kada pogledamo strukturu preduzeća prema veličini, dobijamo sljedeće rezultate:

- 29,1% velikih preduzeća primalo je narudžbe za proizvode ili usluge putem interneta;
- 21,7% srednjih preduzeća primalo je narudžbe za proizvode ili usluge putem interneta;
- 21,4% malih preduzeća primalo je narudžbe za proizvode ili usluge putem interneta.

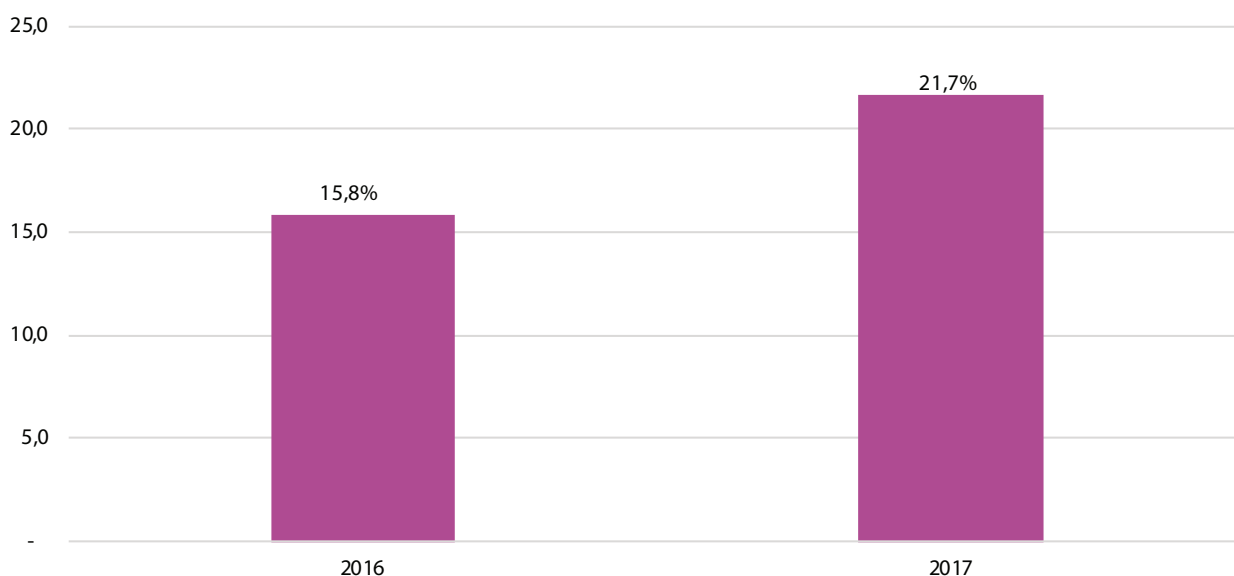
E-Commerce

In 2017, 21.7% of enterprises in Bosnia and Herzegovina received orders for products or services via the Internet, which is an increase of almost 6.0% compared to 2016.

When we look at the structure of enterprises by size, we get the following results:

- *29.1% of large enterprises received orders for products or services via the Internet;*
- *21.7% of medium-sized enterprises received orders for products or services via the Internet;*
- *21.4% of small enterprises received orders for products or services via the Internet.*

Grafikon 8. Procenat preduzeća koja su primala narudžbe putem interneta
Graph 8. Percentage of enterprises that received orders online



Na pitanje „Putem kojih web stranica ili mobilnih aplikacija je preduzeće primalo narudžbe za proizvode ili usluge“ istraživanje je pokazalo da od onih preduzeća koja su primali narudžbe putem interneta:

- 93,4% ih je primalo preko vlastite web stranice preduzeća ili aplikacije;
- 17,0% je primalo i putem web stranice e-commerce tržišta ili „aplikacija“ koju koristi više preduzeća za trgovinu proizvodima? (Npr. Booking, eBay, Amazon, Amazon Business, Alibaba, Rakuten, OLX.BA).

The survey question “Which of the website or mobile applications the enterprise used for receiving orders for products or services,” showed that:

- *93.4% received them through their own corporate website or application;*
- *17.0% also received orders via the e-commerce market website or “application” used by several enterprises for trade in products? (Eg Booking, eBay, Amazon, Amazon Business, Alibaba, Rakuten, OLX.BA).*

IKT RJEČNIK Дефиниције

IKT (informacione i komunikacione tehnologije) su softveri i hardveri upotrijebljeni za komuniciranje podacima (npr. računar, telefaks, internet, fiksni i mobilni telefon).

Broadband su širokopojasne tehnologije ili veze koje omogućavaju brz prijenos podataka. Komunikacioni sistem čiji nosilac (npr. optički kabl) prenosi umnožene podatke u isto vrijeme, a svaki pojedinačni podatak modulisan je na posebnoj frekvenciji.

ADSL (Asymmetric Digital Subscriber Line) Širokopojasna digitalna transmisiona tehnologija koja koristi postojeću telefonsku liniju i dopušta istovremeno slanje podataka i komunikaciju glasom. Veći dio opsega služi za slanje podataka korisniku, a brzine se kreću do 6 Mbps.

Bit (Binary Digit) Najmanja jedinica informacije kojom rukuje računar. Bit se prikazuje sa 1, ili 0 u binarnom prikazu, ili true, odnosno false u logičkom prikazu. Grupa od 8 bita čini 1 bajt.

E-government je elektronski kontakt preko interneta sa organima vlasti i javnim uslugama. Ne uključuju ručno kucane e-maile. Saradnja i odnosi sa organima vlasti i javnim uslugama uključuje web stranice koje sadrže građanske obaveze (npr. porezne prijave, obaveze o kretanju), Prava (npr. socijalne beneficije), Službeni dokumenti (lične iskaznice, rodni list), Javne obrazovne usluge (javne biblioteke, informacije o upisu u javne škole, fakultete), Usluge javnog zdravstva (koje uključuju usluge javnih bolnica).

E-trgovina su transakcije koje se provode preko mreža računara baziranih na internetskom protokolu te preko ostalih računarskih mreža. Primanje narudžbi, dobara i usluga ostvaruje se putem navedenih mreža, ali samo plaćanje i konačna isporuka dobara i usluga mogu biti provedeni online ili offline. Narudžbe primljene telefonom, telefaksom ili ručnopisanim elektronskim porukama ne smatraju se E-trgovinom.

Računari uključuju personalne računare (PC), prijenosne računare (laptop), tablete i ostale prijenosne uređaje (npr. smartphones).

CRM (Customer Relationship Management) Predstavlja proces ili metodologiju koja se koristi da bismo više naučili o potrebama i navikama naših potrošača i da bismo razvili čvršće veze s njima. CRM sadrži više tehnoloških komponenti, ali je CRM u organizacionom smislu skup procesa koji će pomoći da se sakupe neophodne informacije o potrošačima,

ICT GLOSSARY Definitions

ICT (Information and Communication Technology) are software and hardware used for data communication (e.g. computer, fax, the internet, landline and mobile phone).

Broadband are technologies or connections that enable rapid transmission of data. A communication system whose carrier (eg, optical cable) transmits multiplied data simultaneously, and each individual data is modulated on a particular frequency.

ADSL (Asymmetric Digital Subscriber Line) Broadband digital transmission technology that uses an existing telephone line and allows simultaneous data transmission and voice communication. Most of the bandwidth is used to send data to the user, and the speed ranges up to 6 Mbps.

Bit (Binary Digit) The smallest piece of information that the computer handles. Bit is displayed with 1, or 0 in the binary view, or true, and false in the logical view. A group of 8 bits makes 1 byte.

E-government is an electronic contact via the Internet with government authorities and public services. It does not include hand-written e-mails. Cooperation and relations with authorities and public services include websites that contain civil obligations (e.g. tax returns, movement obligations), rights (e.g. social benefits), official documents (ID cards, birth certificates), public educational services (public libraries, information on enrollment in public schools, faculties), public health services (which include public hospital services).

E-commerce are transactions conducted over an internet protocol-based networks and over other computer-mediated networks. Goods and services are ordered via these networks, but the payment and the delivery of the goods or services may be conducted on-line or off-line. Orders received via telephone, facsimile, or manually typed e-mails are not considered e-commerce.

Computers include personal computers (PCs), portable computers (laptops), tablets and other portable devices (e.g., smartphones).

CRM (Customer Relationship Management) It represents a process or methodology used to learn more about the needs and habits of consumers and to develop tighter relationships with them. CRM contains several technological components, but CRM is an organizational set of processes that assists in gathering the necessary information on consumers, sales,

prodaji, marketinškoj efikasnosti, reakcijama potrošača i tržišnim trendovima. CRM pomaže poslovno korištenje tehnologije i ljudskih resursa da bi se stekao uvid u ponašanje i vrjednost potrošača.

Download Elektronski transfer informacija sa udaljenog računara na Vaš računar. Preuzimanje datoteka sa anonimnog FTP-a jeste popularan način pribavljanja besplatnog softvera u javnom vlasništvu.

DSL (Digital Subscriber Line) Vrsta brze internet konekcije korištenjem standardnih telefonskih parica. Može biti i vrsta *broadband* konekcije.

xDSL, ADSL itd. Prijenosi koji se vrše putem internet mreža zasnovanih na protokolu i putem ostalih kompjuterskih mreža. Roba i usluge se naručuju putem tih mreža, ali isplata i konačno dostavljanje robe ili usluge može da se provodi na mreži ili van mreže (off-line). Narudžbe koje se primaju putem telefona, faksa ili mejla ne ulaze u kategoriju elektronske trgovine.

E-mail Elektronski prijenos poruke, uključujući tekst i atačmente, s jednog na drugi kompjuter koji su locirani unutar ili van organizacije. To uključuje elektronski mail putem interneta ili drugih kompjuterskih mreža.

Електронска трговина *E-Commerce* (Electronic Commerce EC elektronska trgovina) jeste kupovina ili prodaja dobara ili usluga putem interneta, naročito putem servisa World Wide Web. U praksi se ovaj termin često koristi umjesto novijeg termina e-business, što znači poslovanje putem interneta.

ERP (Enterprise Resource Planning) je, najkraće rečeno, softverski sistem koji prati sve aspekte poslovanja jedne kompanije. Implementirani ERP sistem je u mogućnosti da integriše poslovanje različitih dijelova firme (kao npr. računovodstvo, prodaja, proizvodnja, itd.) u jednu jedinstvenu cjelinu. Tako se dobija sistem preko kojeg je moguće, s jedne strane, upravljati svim ljudskim i materijalnim resursima, a s druge - planirati, razvijati i pratiti poslovne procese i procedure.

marketing efficiency, consumer reactions and market trends. CRM helps business use technology and human resources to gain insight into the behavior and value of consumers.

Download *Electronic transfer of information from a remote computer to your computer. Downloading anonymous FTP files is a popular way to get free public domain software.*

DSL (Digital Subscriber Line) *A type of fast internet connection using standard telephone pairs. It can also be a type of broadband connection.*

xDSL, ADSL etc. *Transfers made via Internet networks based on the protocol and through other computer networks. Goods and services are ordered through these networks, but payment and final delivery of goods or services can be carried out online or off-line. Orders received by phone, fax or e-mail are not considered e-commerce.*

E-mail *Electronic message transmission, including text and attachments, from one computer to another located inside or outside the organization. This includes an electronic mail via the Internet or other computer networks.*

Electronic commerce *E-commerce (Electronic Commerce EC electronic store) is purchasing or selling of goods or services via the Internet, in particular via the World Wide Web service. In practice, this term is often used instead of a recent term e-business, which means doing business online*

ERP (Enterprise Resource Planning) *is, in short, a software system that tracks all aspects of enterprises business. The implemented ERP system is able to integrate the business of various parts of the enterprise (such as accounting, sales, production, etc.) into one single entity. This creates a system through which it is possible, on the one hand, to manage all human and material resources, and on the other, to plan, develop and monitor business processes and procedures.*

