

Chapter C Individuals and ICT

Not only internet access and access to other modern information and communication technologies (hereinafter referred to as the “ICT”), but primarily the motivation and ability of individuals to use efficiently the applications and services offered through these technologies is currently considered as one of the key factors of economic, social, and political development of society. However, the ICT brings a number of negative effects, such as loss of privacy, data security endangerment, cyber-harassment, overload of unsolicited information, addictiveness to these technologies, etc.

The chapter devoted to individuals provides the monitored development of spreading and using the modern ICT – primarily the use of computers and internet – among individuals since 2002, when the CZSO first realised its own survey on the usage of information technologies among individuals¹. The results of this regularly carried-out survey enables not only monitoring of the fact the internet penetrates the everyday life of more and more people, but also the types of devices by means of which people get connected to the internet, and what the internet actually serves them for. This all is described with respect to sex, age, and highest attained education or economic activity.

C.1 Individuals and a computer

Similarly, to telephones, Czech citizens prefer the portable and mobile versions of computers compare to desktop ones. As early as in 2014, the number of laptops and tablets in Czech households exceeded the number of desktop computers. The increasing number of users of these devices indicates the trend of incoming mobility, where we no longer wish to have a device connectible to the internet only at a single fixed place, but accessible anywhere and at any time. The frequency of usage of these devices is also increasing and these devices are also gaining popularity with pensioners.

Computer users – Main figures

- Along with the increasing number of computers used in Czech households, the number of persons using the computer at home or elsewhere is also rising. In the past 10 years, the number of individuals over the age of 16 using computers in the Czech Republic – **computer users**² – have increased out of 51% in 2007 to 77% in 2017.
- Apart from the increasing number of persons using a computer, the **frequency of its usage** is also increasing. In 2007, a computer was used every day or almost every day by 61% of computer users; currently it is used this frequently by 80% of computer users.
- The fast growth of computer users in the Czech Republic is already over. However, this does not apply to all groups of citizens. In the past few years, the fastest growing number was the number of persons using a computer at the **age of retirement or early retirement**. In 2007, not even 8% of pensioners were using a computer; in 2017 this number increased to 36% of them.
- Data not just from the Czech Republic but also from other EU countries show that the percentage of individuals accessing **computer and internet from home** has increased considerably over time. Already in 2012, 96% of internet users used the internet at home in the Czech Republic, in comparison to 57% ten years ago. In 2002, the number of individuals using the internet at home (1 million) did not differ much from the number of individuals using the internet at work (800 thousand).

¹ The detailed information on the expansion and manner of usage of the selected ICT by individuals is monitored within the scope of **Selective Survey on ICT usage in households (VŠIT)**. The survey is carried out by means of personal interviews with a survey sample of approx. 10 thousand individuals. The ascertained data is available to a wide range of demographic and social characteristics of persons living in the monitored households, such as sex, age, highest attained education, etc. Since 2006, the survey is carried out yearly in the 2nd quarter of the monitored year in all EU countries as a mandatory survey stipulated by the Regulation (EC) No. 808/2004 of the European Parliament and of the Council concerning Community statistics on the information society.

For more details see: https://www.czso.cz/csu/czso/domacnosti_a_jednotlivci

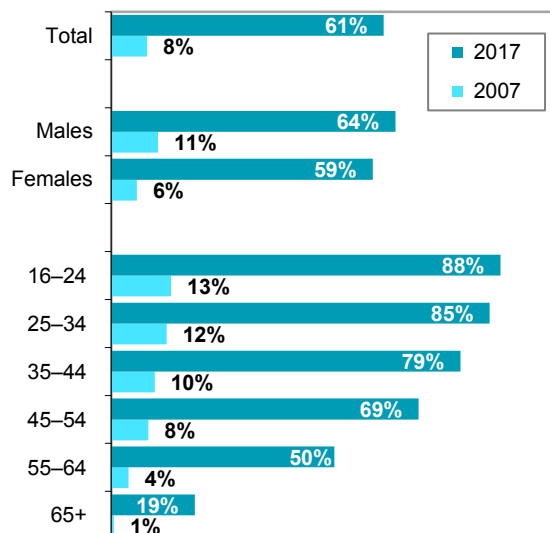
² **Individuals using a computer** are such individuals who have used a computer (desktop, laptop or tablet) at least once in the last three months anywhere (at home, work, school, etc.) and for any purpose (private or work).



Type of computers used by individuals

- In the past years, the popularity of portable computers, laptops and tablets, has been increasing. The popularity of these devices is mainly associated with the possibility of their usage practically anywhere including internet access, i.e. not only at home or at a workplace, but also on a train or in a café. In 2017, a **portable computer** (laptop or tablet) was used in the Czech Republic by 61% of individuals over the age of 16, comparing to 8% in 2007.

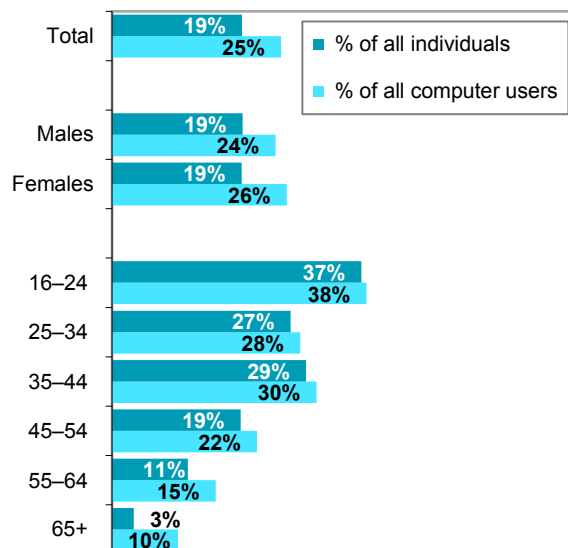
Figure C1 Individuals in the Czech Republic using portable computer – laptop or tablet (%)*



* as a percentage of all individuals in a given group

Source: CZSO 2018, Household ICT usage survey

Figure C2 Individuals in the Czech Republic using tablet; 2017 (%)



Source: CZSO 2018, Household ICT usage survey

- Tablets**, which started being used in the Czech Republic only in the past few years, have been increasingly popular. Whereas in 2012 they were used only by 1% of inhabitants, in 2017 the number increased nearly to a fifth (19%) of inhabitants over the age of 16.
- The dominating group in the use of tablets are **students** – 5 years ago tablets were used by 2% of students, these days (Q2 of 2017) the number has increased to 40%. At the same time, tablets are frequently used by persons of parental age, who often purchase them, besides other things, for their children. Tablets are used by 29% of persons belonging to the age group 35–44. However, they are less frequently used by old age pensioners – not even by 4% (situation in 2017).
- Within the scope of the yearly CZSO survey, concerning the usage of information technologies in households and among individuals, **computer skills** are also monitored. The results arising from the questions, concerning the skills of individuals, are provided in *Chapter F “ICT in Education and Digital Skills”*.

C.2 Individuals and the internet

Generally, the development of the digital economy and society fundamentally depends on the use of digital technologies and related applications by individuals – including usage of the internet, which is one of the greatest phenomena of today's world. According to ITU more than half of the world's population is now online.

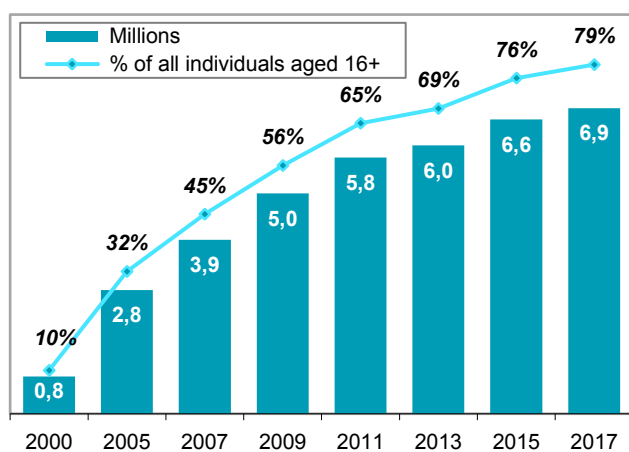
Internet users – Main figures

The internet and connected devices have become a crucial part of most individuals' everyday life in the Czech Republic. Nevertheless, there can be considerable differences in internet uptake between different groups in society, linked primarily to age and education, often intertwined with income levels.

ITU estimates that nearly 4 (3.9) billion people – for the first time more than half (51%) of the world's population – were using the internet in 2018, compared to 1 billion people (15%) in 2005. Internet access, however, still remains limited in the developing world, with only 45% of the population online at the end of 2018, compared with 81% in the developed world.

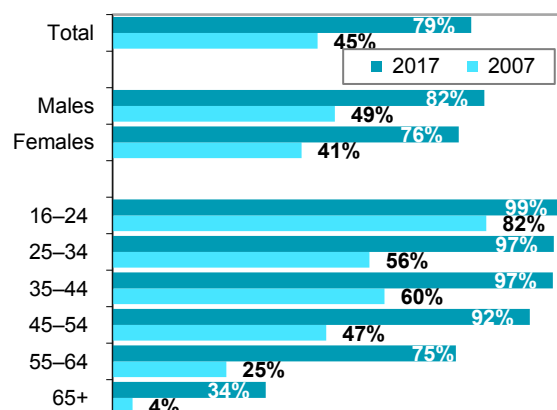
- According to the latest results from the year 2017, the internet in the Czech Republic has been used **at least once per lifetime** by 83% of persons over the age of 16 compare to 50% ten years ago.
- Nearly seven (6.9) million of persons over the age of 16 have used the internet **at least once in the last 3 months** in 2017. It means that nearly eight out of ten (79%) persons in the Czech Republic may be classified as so-called **internet users**³. This is a basic indicator used for international comparison in this area. Since 2005, when the internet was used nearly by a third of the population, the number of Czech internet users increased 2,5 times, in absolute figures by 4 million persons.

Figure C3 Individuals in the Czech Republic aged 16+ using the internet – internet users



Source: CZSO 2018, Household ICT usage survey

Figure C4 Internet users in the Czech Republic (%)*



* as a percentage of all individuals in a given group

Source: CZSO 2018, Household ICT usage survey

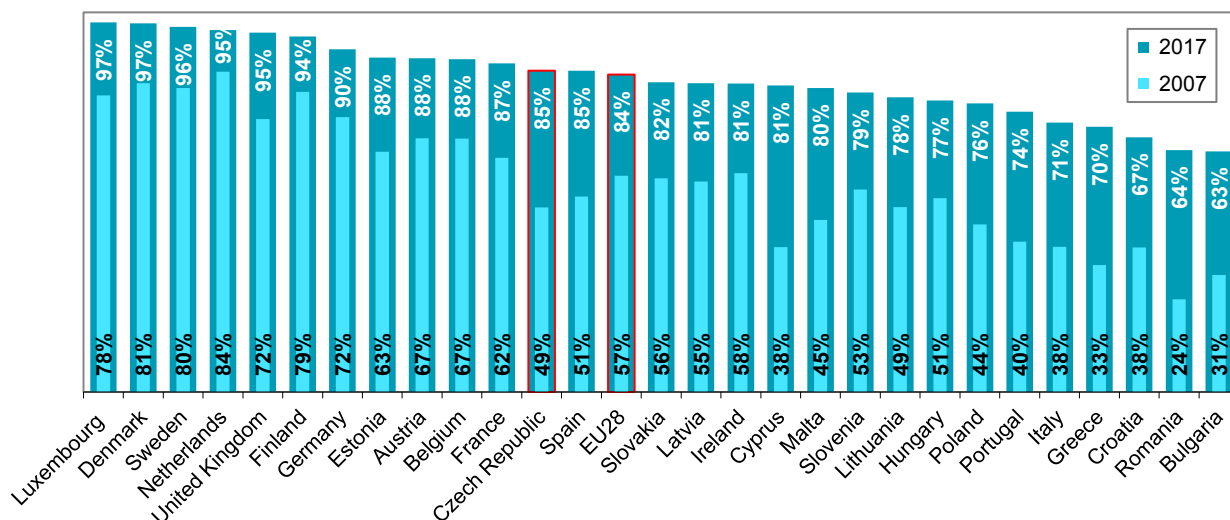
- The increase in total numbers and shares of internet users, evident from aggregated data, certainly covers a different way of development **in individual socio-demographic groups**. Nevertheless, in all the monitored years we can observe certain regularities; the internet is used more frequently by the younger generation (recently even the middle generation), more frequently used by persons with a higher level of education, and more by men than women (especially concerning the older generation).
- In recent years, the popularity of the internet has also been increasing mainly within the **older generation**. For instance, the percentage of pensioners over the age of 65 using the internet has increased from 4% in 2007 to one third in 2017.

³ **Internet users** are such individuals who have used the internet at least once in the last three months anywhere (at home, work, school, etc.) and for any purpose (private or work). The internet use shall mean any activity on the internet carried out in an active manner, for instance, browsing of websites, downloading of files, using emails, from any location (household, school, work, etc.) for any purpose (private, work, etc.) both on computers (including portable ones) and mobile phones, smartphones, game decks, etc.



- It is expected that the number of internet users among pensioners (older generation) will be increasing significantly also in coming years. Nowadays, retirement age is reached by people who are accustomed to using the internet automatically within their working life, as well as private life. In 2017, the internet was used by three quarters of persons in the **age group 55 to 64 years old**.
- Individuals with higher levels of **educational attainment** are more likely to use the internet. This may partly be because they are more likely to have experience of internet use through their studies and subsequent careers, but could also be related to being more likely to have sufficient disposable income to afford fixed and mobile connectivity. In 2017, the proportion of individuals aged 25+ with tertiary education using the internet was in the Czech Republic already 95% compare to 35% for individuals with only basic (primary or lower secondary) level of education.
- In the younger and middle generation (aged 16–54 years), ICT usage in the Czech Republic was in 2017 more or less comparable **between genders and education levels**, while in the group of 55 to 74 years-old there was still a noticeable difference in shares between male and female internet users (65% men in comparison to 57% women) as well as between high and less educated (92% of individuals aged 55 to 74 with university degree in comparison to 24% only with lower secondary education). However, along with the increasing number of persons using the internet over time, these differences have been also gradually decreasing.
- For many **people in the EU**, using the internet has become a common activity. On average about 84% of 16–74 year-olds in EU countries were internet users – meaning they had been online at least once during the last 3 months prior to the 2017 survey – compared with less than 60% in 2007.
- Internet usage varies **across EU countries and among social groups**. In 2017, 90% and more of the adult population were accessing the internet in Germany, United Kingdom, Luxembourg, the Netherlands and the Nordic countries, but less than 75% in Portugal, Italy, Greece, Croatia, Romania and Bulgaria.
- These differences are wider for **older generations**. Over 80% of 55–74 year-olds in Denmark, Luxembourg, the Netherlands, Sweden and United Kingdom reported using the internet in 2017 against less than 40% in Bulgaria, Croatia, Greece and Romania. Therefore, the gap between internet uptake among the elderly and the younger population generally remained high in the lagging countries compared to the leaders.

Figure C5 Individuals in EU countries aged 16–74 using the internet – internet users (%)*



* as a percentage of all individuals aged 16 to 74 in a given country

Source: Eurostat 2018

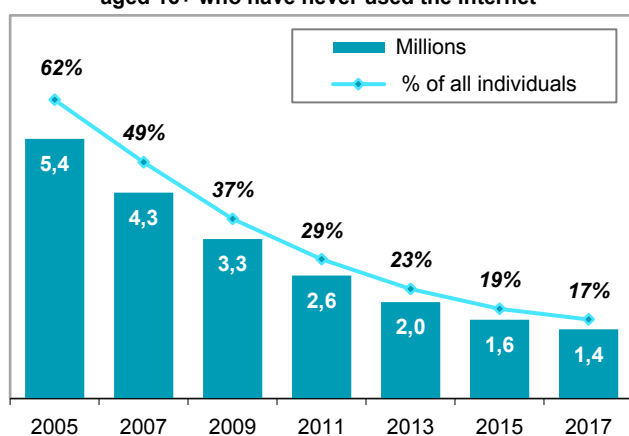
- The proportion of individuals aged 25 to 64 year with **tertiary education** using the internet in 2017 was above 95% in all EU countries except Croatia (89%) and Italy (93%). There are wider differences across EU countries in the share of people with **lower levels of education** who use the internet. In 2017 the share of internet users among individuals aged 25 to 64 years old with low education ranges from over 75% in Denmark, Estonia, Finland, Germany, Luxembourg, the Netherlands, Sweden and United Kingdom to less than 50% in Bulgaria, Croatia, Greece, Hungary Lithuania, Poland, Romania and Slovakia.

Non-internet users

In most countries, internet uptake by young people is nearly universal, but there are wide differences for older generations (notably seniors), which shapes the overall ranking of countries. The role of education appears to be much more relevant for determining internet usage for these groups than for young people. Older people, particularly those with less education, are thus a potential focus of strategies trying to reduce the digital divide.

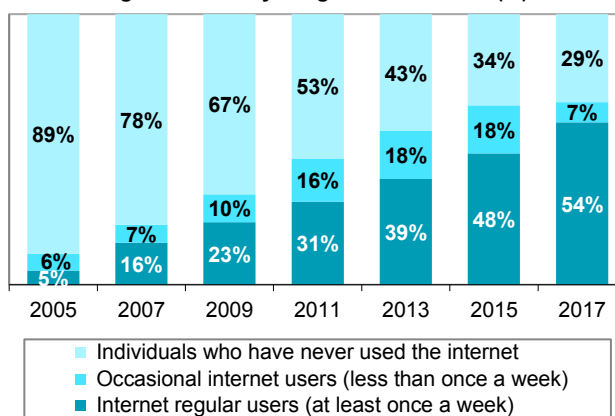
- In 2017, 17% of adults (16+) in the Czech Republic (1.4 million persons), **had never used the internet**. However, the number of such persons has been decreasing year by year. Ten years ago, there were three times more individuals that claimed that they never used the internet – nearly half of adults' population.
- The group of persons, who have never used the internet includes more frequently persons **over the age of 65** (more than a half in 2017 or even 94% in 2007), and people with low education (56%). These days we can hardly find people without any experience with the internet among students, young and middle generation, individuals with tertiary education or women on maternity/parental leave.

Figure C6 Individuals in the Czech Republic aged 16+ who have never used the internet



Source: CZSO 2018, Household ICT usage survey

Figure C7 Individuals in the Czech Republic aged 55 to 74 by usage of the internet (%)

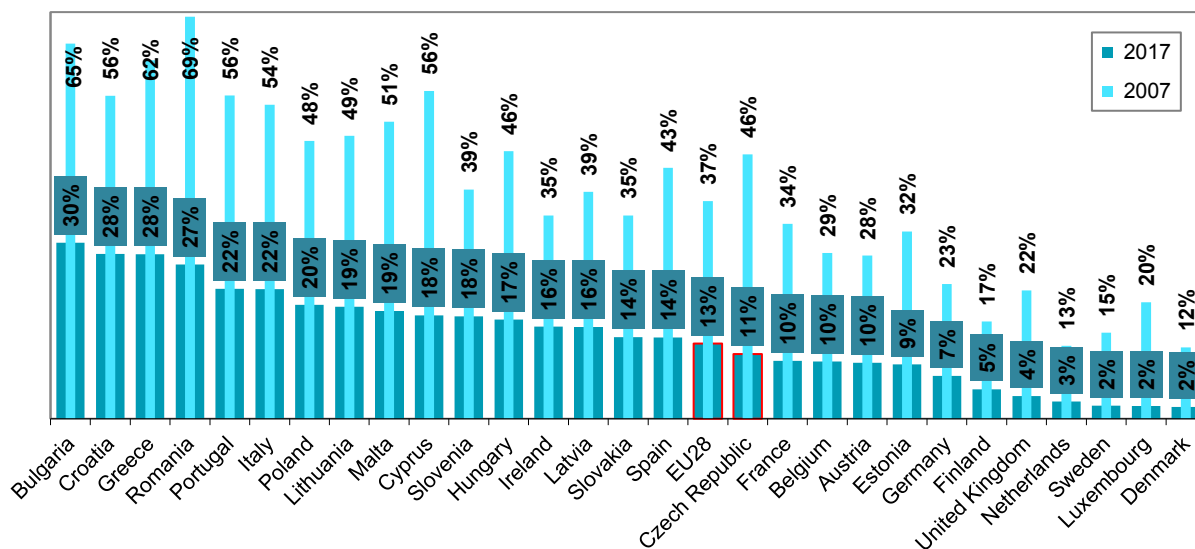


Source: CZSO 2018, Household ICT usage survey

- The proportion of the EU28's population that has never used the internet was 13% in 2017, with this share falling to almost one third of its level in 2007, when it stood at 37%. As of the beginning of 2017, the share of **non-internet users** among individuals aged 16 to 74 years old in individual EU countries ranges from over 25% in Bulgaria, Croatia, Greece and Romania to less than 5% in Finland, United Kingdom, the Netherlands, Sweden, Luxembourg and Denmark.



Figure C8 Individuals in EU countries aged 16–74 who have never used the internet (%)*



* as a percentage of all individuals aged 16 to 74 in a given country

Source: Eurostat 2018

Regular and daily internet users

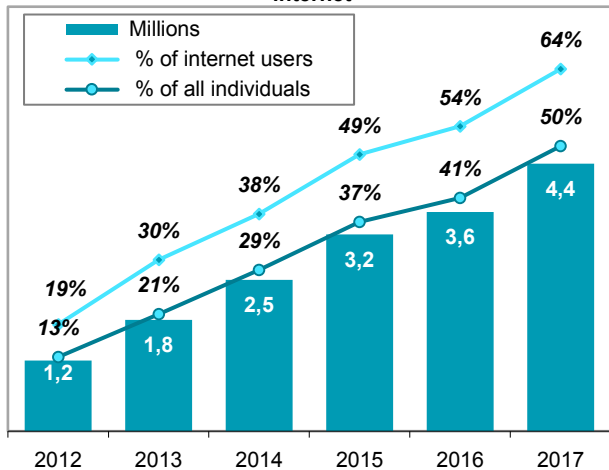
- In 2017, most internet users (95%) said that they accessed the internet regularly during these 3 months: 85% of them were online every day and a further 10% at least once per week, but not daily. It means that 80 percent of all internet users in the Czech Republic accessed the internet virtually every day. This is significantly higher than the proportion of **daily internet users** in 2007. Share of all individuals aged 16+ using **internet regularly** (at least once a week) in the last ten years nearly doubled in the Czech Republic, from 38% in 2007 to 84% in 2017.
- Frequent (daily) use** of the internet grew by 20 p.p. between 2010 and 2017 in the EU28, from 53% to 77%, showing that not only is the proportion of the population going regularly online increasing, but that it is increasingly becoming a daily activity.
- As was mentioned above, on average, four out of five internet users aged 16+ was in 2017 going online every day in the Czech Republic. But, as nearly all young people (97%), **up to the age of 24**, go online every day, in the case of persons over the age of 65, only a fifth goes online every day (57% of internet users aged 65 years and over).
- In 2017, the proportion of **daily internet users**, among all internet users (those who had used the internet within the previous three months), averaged 87% in the EU28, and ranged across the EU Member States, from 73% in Romania, up to more than 90% in eight Member States, peaking at 96% in Italy. Ten years ago (in 2007), the share of daily internet users among all internet users was equal to 66%, on average in EU countries.
- In 2017, on average, three quarters among all internet users **aged 65 to 74 years old** in EU countries were online daily in EU countries. This proportion of internet users ranges from over 80% in Italy, Denmark, Luxembourg, the Netherlands, Sweden and United Kingdom to less than 60% in Austria, Bulgaria, the Czech Republic and Romania.

Mobile phone internet users – Main figures

Mobile devices provide simpler and faster access of individuals to a large amount of information practically, from anywhere and at any time. Currently, many people use the internet outside their home and workplace. Also, due to this fact, the ICT has been gaining a significant role within society, and for many people in the Czech Republic, as well as in other EU countries, the internet has become a part of their everyday life.

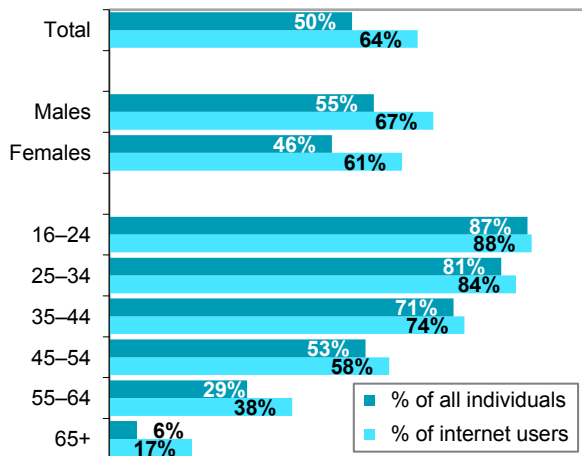
- In 2017, for the first time more than a half of Czech adults claimed to be using **the internet on their mobile phones**, i.e. nearly two thirds of internet users. The corresponding figures for 2012 was only 13 percent of all individuals aged 16+ or one fifth of internet users aged 16+.

Figure C9 Individuals in the Czech Republic aged 16+ using mobile phone to access the internet



Source: CZSO 2018, Household ICT usage survey

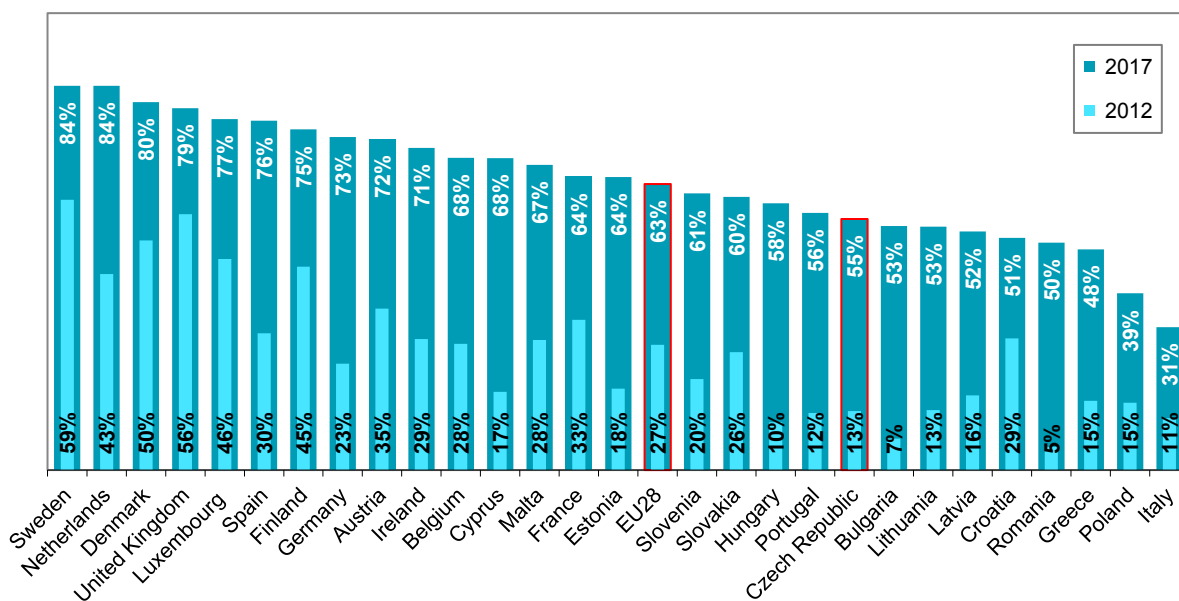
Figure C10 Individuals in the Czech Republic accessing the internet via a mobile phone; 2017



Source: CZSO 2018, Household ICT usage survey

- The internet is in the Czech Republic accessed through mobile phones typically **by young people** but recently also by middle generation. In 2017 it was used this way nearly by nine out of ten persons aged 16 to 24 but also by e.g. 71% of individuals aged 35 to 44. The internet is often accessed via mobile phones also by **women on maternity or parental leave** (approx. three quarters) or individuals with **higher level of education**, e.g. on average 71% of individuals aged 25+ with tertiary education claimed that were using internet on their mobile phone in 2017.
- Even if **internet users aged 55 to 64** made significantly less use of mobile devices, their proportion, however, has grown significantly in the last two years from 14 percent in 2015 to 29 percent in 2017.
- Despite the fact that the number of persons who go online via a mobile phone in the Czech Republic, has been increasing year by year, compared to the values of the majority of the **EU28 countries**, the internet is not used by means of mobile phones very much. In 2017, the internet was accessed by mobile phones in the Czech Republic by 55% of persons aged 16–74; the EU28 average was higher by 8 p.p.

Figure C11 Individuals in EU countries aged 16–74 using internet on a mobile phone (%)*



* as a percentage of all individuals aged 16 to 74 in a given country

Source: Eurostat 2018



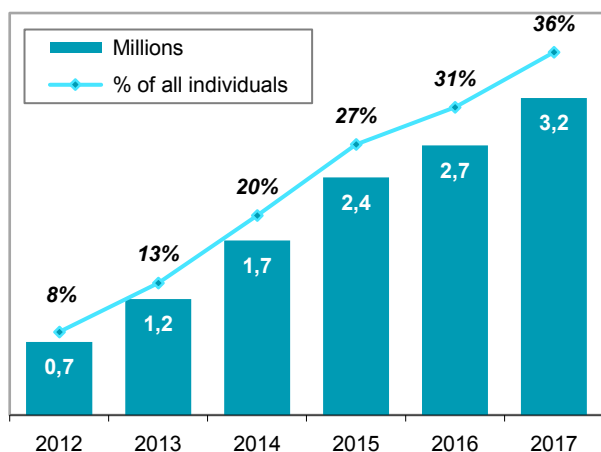
- The highest percentage of persons using the internet via mobile phones can be found in Sweden and in the Netherlands – 84% in 2017. Apart from Italy and Poland, the internet via a mobile phone is used less frequently also in Croatia and Greece. In the Czech Republic only people younger than 34, university graduates or women on maternity/parental leave, reach the EU average, with respect to the use of the internet via a mobile phone.

Type of connection used by mobile phone internet users

The wider distribution of wireless internet connection via Wi-Fi technology in public places, such as libraries, restaurants, trains, etc., which is usually provided free of charge, as well as the aforementioned wider distribution of Wi-Fi routers for the distribution of internet in households, has been used by more and more individuals in the Czech Republic for internet access via mobile phones.

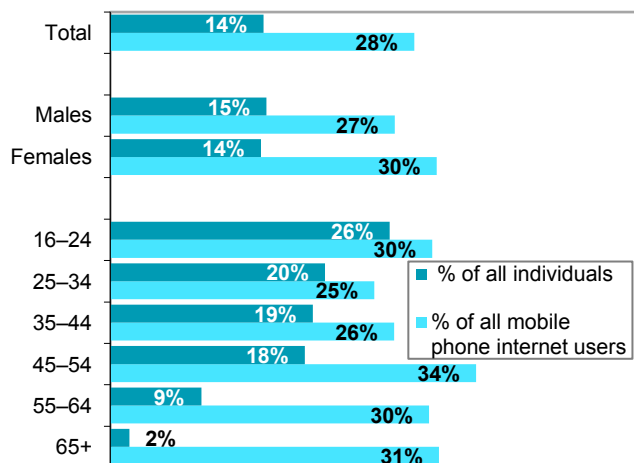
- **Free wireless internet connection (Wi-Fi)** via a mobile phone (whether at home or elsewhere) was used at least once in 2017 by four million (46%) persons over the age of 16, i.e. 92% of those who use the internet on their mobile phones.

Figure C12 Individuals in the Czech Rep. aged 16+ using the internet on a mobile phone via mobile phone network



Source: CZSO 2018, Household ICT usage survey

Figure C13 Individuals using the internet on a mobile phone only via wireless (Wi-Fi) network; 2017 (%)



Source: CZSO 2018, Household ICT usage survey

- In 2017, the 28% of mobile phone internet users aged 16+ were using only **free wireless network (Wi-Fi)** for accessing internet on their mobile phones, in the Czech Republic. When women use the internet on their mobile phones, they tend to use it as a means of connection more frequently than men.
- Mobile-phone internet users can also go online by means of **paid data from mobile phone operators**. This provides the possibility of connection from any place covered by the signal. In 2017, 36% of persons over the age of 16 (72% of which access the internet on their mobile phones) claimed to be using a data tariff to access the internet within their mobile network operators. Due to the decreasing prices of data tariffs provided by mobile phone operators, the number of mobile phone users, who get online via these networks, has been increasing year by year. In the past 5 years, this number has increased nearly five times in the Czech Republic.

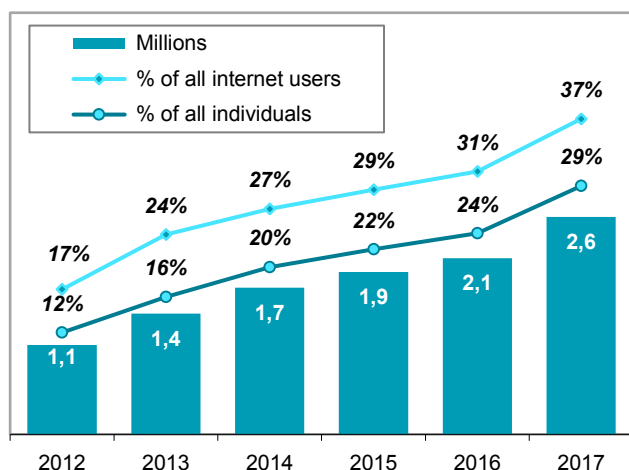
Use of the internet on portable computers away from home

Whereas at times when the internet was a novelty, and could solely be accessed through a desktop computer, nowadays there is a wide range of other devices, that enable internet access, and the range is still expanding.

- With respect to portable computers, their users in the Czech Republic get online mainly by means of **laptops** (52% of the total number of inhabitants over the age of 16). In the same year, the internet was accessed via **tablets** by 17% of persons over the age of 16. The usage of all these portable devices with the intention of going online is on the upward trend.

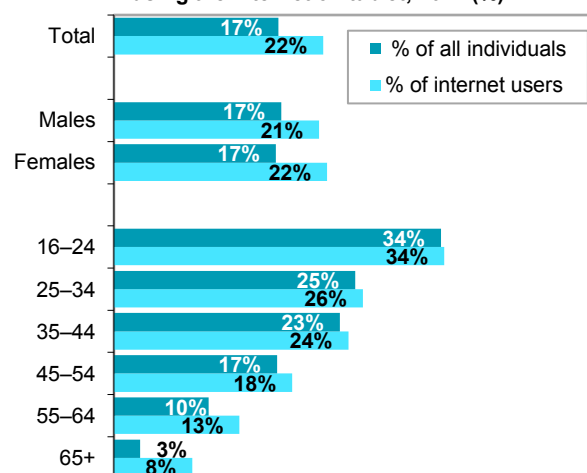
- Provided that a household has internet access, and its own laptop or tablet, we may assume that someone from the given family also uses this laptop or tablet in order to get online. Nevertheless, certainly not everyone uses the **mobile function** of his or her portable device – someone prefers to leave the laptop on the table at home or at work, and tablets often serve only as entertainment for children.
- There is also a large group of people, who do not use laptops or tablets as a replacement of the desktop computer or to be carried within their flats; these persons purchase these devices in order to be able to carry them outside their home or office. In 2017, almost 30% of individuals in the Czech Republic claimed to have used **their laptops or tablets outside their home or office** (e.g. in a café, on a train or in a hotel) and gotten connected to the internet from there – five years ago it was only 12% of individuals.

Figure C14 Individuals in the Czech Rep. aged 16+ using internet on a portable PC away from home or work



Source: CZSO 2018, Household ICT usage survey

Figure C15 Individuals in the Czech Republic using the internet on tablet; 2017 (%)



Source: CZSO 2018, Household ICT usage survey

- Whereas mobile phone usage with the purpose of getting connected to the internet is **decreasing rapidly, along with the users' age**, it is the opposite way with desktop computers. Older people can also be characterised by the fact that they mostly access the internet from one device, most frequently from a desktop computer.

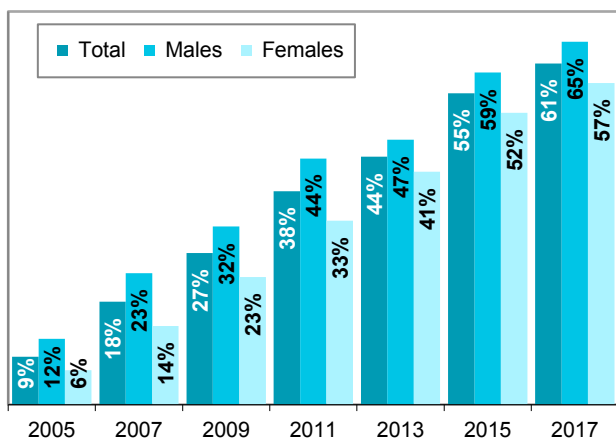
Internet users among elderly people

The rapid appearance of information technologies, and especially of the internet in the past 20 years, has brought in a phenomenon which we call the “digital divide”; meaning the increasing differences between people with and without internet access, or their abilities and willingness to use the internet. One of the groups of inhabitants that has been the most affected by this are people of older age, i.e. pensioners, above all.

- In 2017, 60.7% of Czech citizens **aged 55–74** claimed to have used the internet at least once in the past three months, i.e. they were classified as so called “internet users”. Regular internet users are added to this age group every year. As opposed to this, the number of those, who have never used it is decreasing. Whereas in 2017 the internet was used regularly by the absolute majority of people belonging to this age group, and a mere third of this age group had never used it, in 2012, i.e. five years ago, this ratio was the opposite (43% had never used the internet while 36% had been using it on a regular basis).

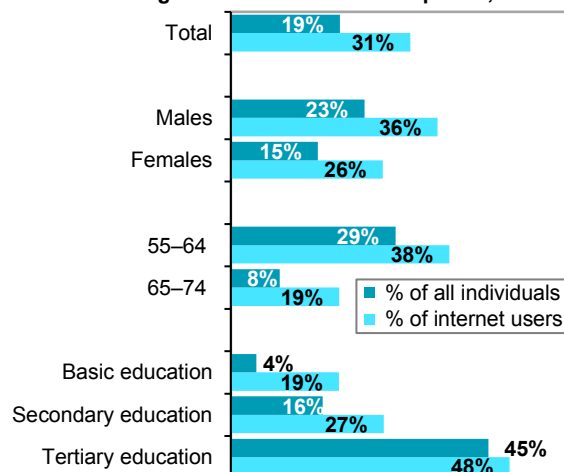


Figure C16 Internet users in the Czech Republic aged 55–74 (%)



Source: CZSO 2018, Household ICT usage survey

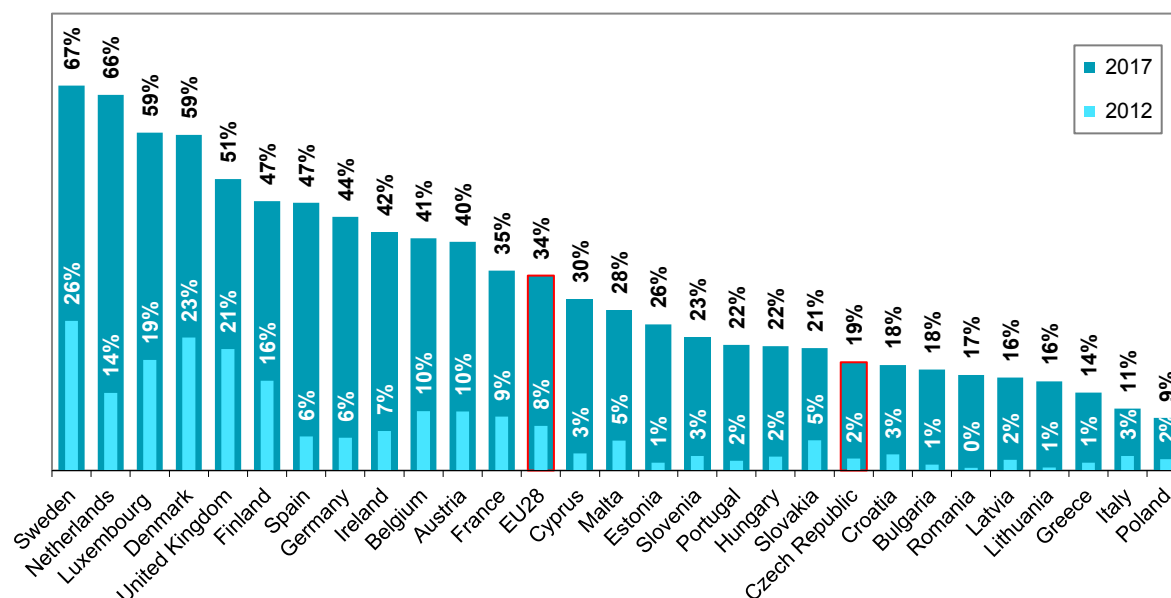
Figure C17 Individuals in the Czech Republic aged 55–74 using the internet on a mobile phone; 2017



Source: CZSO 2018, Household ICT usage survey

- Within the age group of 55–74, **women** gradually start catching up with men with respect to internet usage, although even here the difference is bigger than in younger age groups. This strongly depends on whether the persons belonging to this age group still work, and on the level of their highest attained education – e.g. 92% of **tertiary graduates** use the internet as opposed to less than a quarter of persons with **lower secondary education in this age group**.
- Provided that three quarters of persons belonging to the age group **55–64** used the internet, the percentage of persons who are ten years older (**aged 65–74**) is only 45%, and for the **75+** age group, it is only 15%.
- We may assume that **persons over the age of 65** use the internet not out of necessity, but rather that the internet serves them as a hobby or a voluntary activity. Despite the fact that there are countless initiatives attempting to educate the older generation in the field of computer and internet literacy, and that the internet could be of great help to the elderly, for most of them the internet is probably seen as an unnecessary burden. Getting familiarised with the internet, and overcoming the natural mistrust towards technology, is difficult for them.
- Out of four main devices most frequently used for internet access, i.e. desktop computer, laptop, mobile phone, and tablet, internet users – pensioners – definitely use the **desktop computers** most frequently so far (still) in the Czech Republic. Whereas laptop and mobile phone usage, in order to get connected to the internet, is decreasing rapidly along with the users' age, it is the other way around with desktop computers.

Figure C18 Individuals in EU countries aged 55–74 years using the internet on mobile phone (%)*



* as a percentage all individuals aged 55 to 74 in a given country

Source: Eurostat 2018

- Only in 2007 the percentage of persons aged 55–74 using the internet was in the Czech Republic 10 p.p. lower than the **EU28 average**. Czech pensioners aged 65–74, could not be compared to the European average concerning internet usage at all due to the fact that the average number of European internet users aged 65–74 was twice as high as that of the Czech Republic. However, in recent years, Czech pensioners have nearly caught up with the head start of their European peers. With respect to the internet usage by individuals aged 55–74 in 2017, the Czech Republic, similarly to Spain, found itself **just below the EU28 average**.
- Nevertheless, the principal difference arises with the view of devices, as a means of which the persons aged 55–74 go online. On average, up to a third of European citizens belonging to this age group use their **mobile phones**, in the Czech Republic it was only 19% of persons belonging to this age group. The internet is most frequently used by persons aged 55–74 in Luxembourg, Sweden, the Netherlands and Denmark; the same applies to mobile internet.

C.3 Internet activities – Purpose of internet use by individuals

The number of people regularly using the internet is augmenting, as is the number of activities carried out online. The internet has changed human behaviour and lifestyle of citizens in many ways. Over the last few years, a range of online activities gained in popularity. Nowadays, we spend a considerable part of our time online for various reasons, whether at work, school or university, at home or on the move. We often depend on our digital devices to stay in touch with our families and friends, to get directions to shops, hotels and restaurants or to check our bank accounts. On the other hand, social media platforms and other online fora also provide a space for negative social interactions given the comparatively lower barrier to participation than in the case for real life interactions.

The variety of uses show that the share of the population using the internet does not fully reflect the extent to which people use the internet for important daily tasks and also does not capture the sophistication with which people navigated the internet. Whereas internet usage in general is affected mainly by age, income or education, activities carried out on the internet are also affected by the cultural context, infrastructure, and availability of individual services and applications online.

Internet use for communication

Nowadays, communication, primarily through emails, which have been one of the most significant activities carried out on the internet for many years, has many competitors. Not only in the form of other platforms



designed for communication, such as social or professional networks. Communication has changed dramatically with the introduction of the mobile phone and the rise of opportunities to share pictures and videos at no charge using internet applications such as Skype, WhatsApp, Viber, Instagram or Facebook. The internet in the connection with smartphones have fundamentally changed the way people interact with each other.

- Since the very beginning of internet usage, the internet has served nearly all users as a means of communication. In 2017, for instance, 73% of all Czech citizens aged 16+ communicated via **electronic mail**. This means that sending and receiving emails is a matter of course nearly for everyone, who uses the internet. Out of internet users, only 7% of individuals do not use emails, this mainly includes the elderly, and persons with lower education level.
- Besides email communication, other internet applications which can serve as **messengers** (such as WhatsApp, Facebook messenger, Viber, etc.) have also increased in importance. These applications are also frequently used on mobile phones or tablets. In 2017, they were used by 31% of the Czech population, regardless of the device on which they were used. The operation of these applications is often faster than writing emails, and it also serves as an alternative method to text messages. The advantage of these applications is also that they are often free of charge. The highest percentage of persons using the aforementioned applications can be found within the 16–24 age group (63%). However, even the percentage of the next age group (25–34) is over 50%. Along with the increasing age, the percentage of people using these applications is continuing to decrease.
- Another means of internet communication is **making calls**. Telephone communication via internet applications, such as Skype or WhatsApp, was used in 2017 by a third of Czech inhabitants, i.e. 42% of internet users. This percentage has been decreasing in recent years. Telephone communication via the internet using these applications has also become less attractive due to the cheaper telephone calls made via mobile phones, including telephone communication via roaming within the EU. Since 2012, when the percentage of persons using telephone communication via the internet in the Czech Republic has been the historical highest (37%), the number decreased to the aforementioned 33% in 2017.

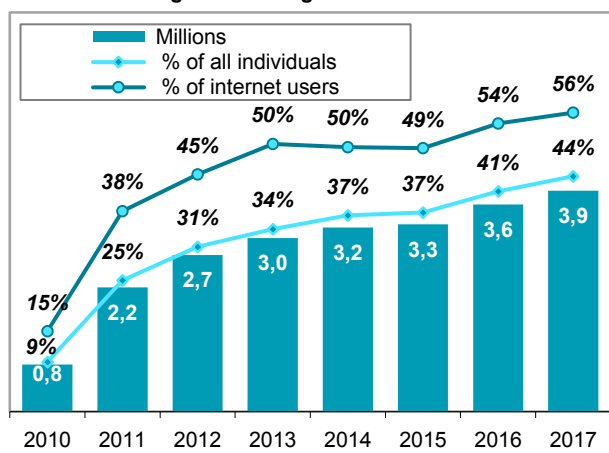
Participating in online social networks

In recent years, large expansion has been recorded with respect to social network activities, primarily with younger generations. Social networks most frequently serve for the sharing information, for communication, and promotion. On a global scale, they are considered to be a significant instrument outside of communication, as well. Social media can enable individuals to maintain existing social relationships and also to build new ones. Evidence on the impact of online social networks on real-life social connections and mental health is mixed. It is likely, however, that not all segments of society benefit from online social networks to the same extent. For example, the elderly could benefit greatly from online networks but may lack the appropriate skills.

- In 2017, a **social network**⁴ profile was owned nearly by 4 million (44%) of individuals over the age of 16 in the Czech Republic, as opposed to one million (10%) in 2010. Above all, the younger generation is the most active on social networks, and, for instance, out of all students aged 16+ only 5% do not have a profile on a social network. In contrast, the popularity of the elderly concerning social networks is nowhere near as high. The highest increase in the percentage of social network users was recorded between the years 2009 and 2012, when it increased from 5% to 31%. Since then, the growth has slowed down and it shows an average increase by 2.6%.

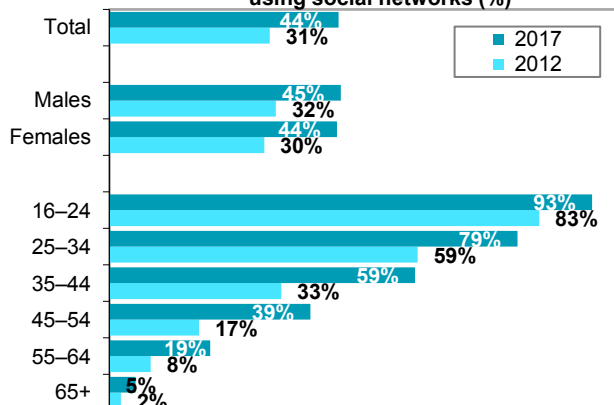
⁴ **Social networking** can be distinguished from other communication and content activities by the aspect of creating a profile on certain websites. Being a member of a social network (e.g. Facebook, Twitter or Instagram) with selected other members who share interests and activities is an essential characteristic of a social network. A person is called a user of social networks if he/she has a profile on a social network and had used the network at least once in the last 3 months before the interview.

Figure C19 Individuals in the Czech Republic aged 16+ using social networks



Source: CZSO 2018, Household ICT usage survey

Figure C20 Individuals in the Czech Republic using social networks (%)*

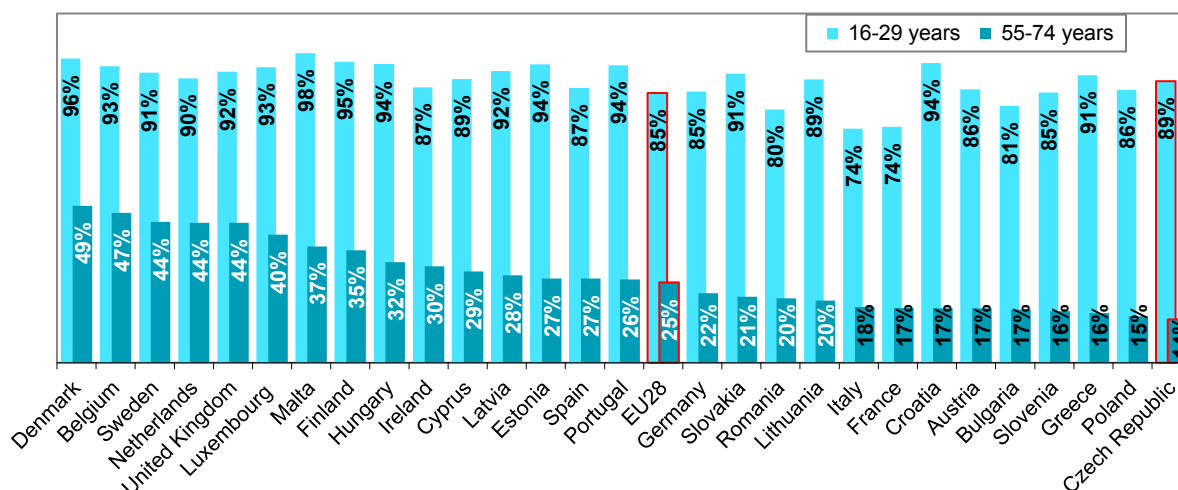


* as a percentage of all individuals in a given group

Source: CZSO 2018, Household ICT usage survey

- Despite the fact that it may seem that the usage of social networks in the Czech Republic has highly expanded, with respect to the **international comparison**, the Czech Republic, with its 48% of individuals aged 16–74 in 2017, is found below the EU average (54%). With respect to the age group 55–74, our position in international comparison is even worse; in this case we are the very last ones on the scale.

Figure C21 Individuals in EU countries using social networks by age; 2017 (%)*



* as a percentage of all individuals in a given age group and in a given country

Source: Eurostat 2018

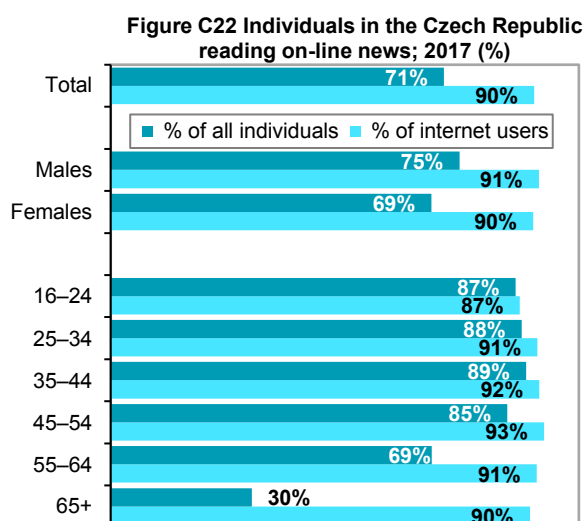
- Besides social networks, there are also professional networks (e.g. LinkedIn), where electronic CVs may be created, and supplemented by references from co-workers and superiors. On the network, companies may, for instance, present their announcements concerning conferences. Thus, a professional network not only serves individuals seeking employment, but also companies seeking suitable candidates for jobs. In 2017, **professional networks** were used by 4% of adults in the Czech Republic. This mainly includes university graduates (11.5%). With respect to age, the highest percentage of users is in the age group 16–44. With respect to economic activities, the relatively highest percentage of users is found among students (7%), who on one hand do not have as much work experience as older individuals, but on the other hand are used to this mean of job seeking.

Internet use for entertainment

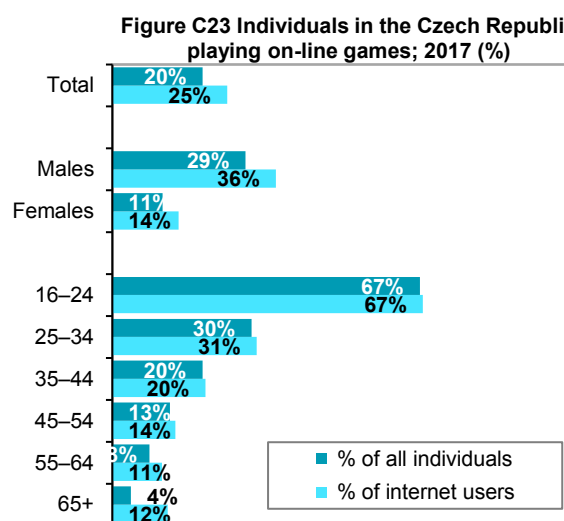
Aside from online communication and information seeking, the overwhelming majority of internet users use it for entertainment. This is due to the fact that the internet offers a whole range of free-time and entertainment activities used by today's digital society. Entertainment through the internet (in total or divided to various types) is mainly welcomed by students.



- Apart from online communication, probably the most popular example of a free-time activity concerning the internet is **reading online news**, including internet newspapers and magazines. In 2017, on average, this activity was enjoyed by 71% of Czech individuals (91% of internet users) aged 16 years and over. Among the pensioners, it means every third person. Provided we narrow the set only to pensioners using the internet, the percentage rises at once to 90%, which explains the popularity of this free-time activity type among the older generation.



Source: CZSO 2018, Household ICT usage survey



Source: CZSO 2018, Household ICT usage survey

- The number of Czech citizens reading the news or magazines over the internet in 2017 was **the sixth highest within the EU**, high above the EU average. Apart from e.g. Scandinavian states, reading news on the internet has expanded also to Luxembourg, Estonia or precisely the Czech Republic.
- Other activities, by means of which free time can be spent on the internet, concern **playing and downloading computer games**. The history of computer game playing commenced way before the internet came into existence. However, along with the existence of the internet, the offer of computer games, as well as the structure of their players, has expanded.
- Computer games exist since the beginning of the Computer age and today the computer game industry is an important ICT branch. In 2017, a fifth of inhabitants of the Czech Republic, or alternatively a fourth of internet users, claimed to have played a computer game on the internet or by means of it. **Playing online games** is preferred by men rather than by women, where the percentage of players is 29% and 11%, respectively. It may not come as a surprise that the number of players decreases as age increased. Within the youngest monitored age group, i.e. 16–24 years of age, games are played by nearly 67% of young people, as opposed to that, only 4% of inhabitants over the age of 65 play these games. It is worth mentioning that compared to other analysed effects within the survey, the higher the degree of education, the lower the percentage of online game players among the internet users.

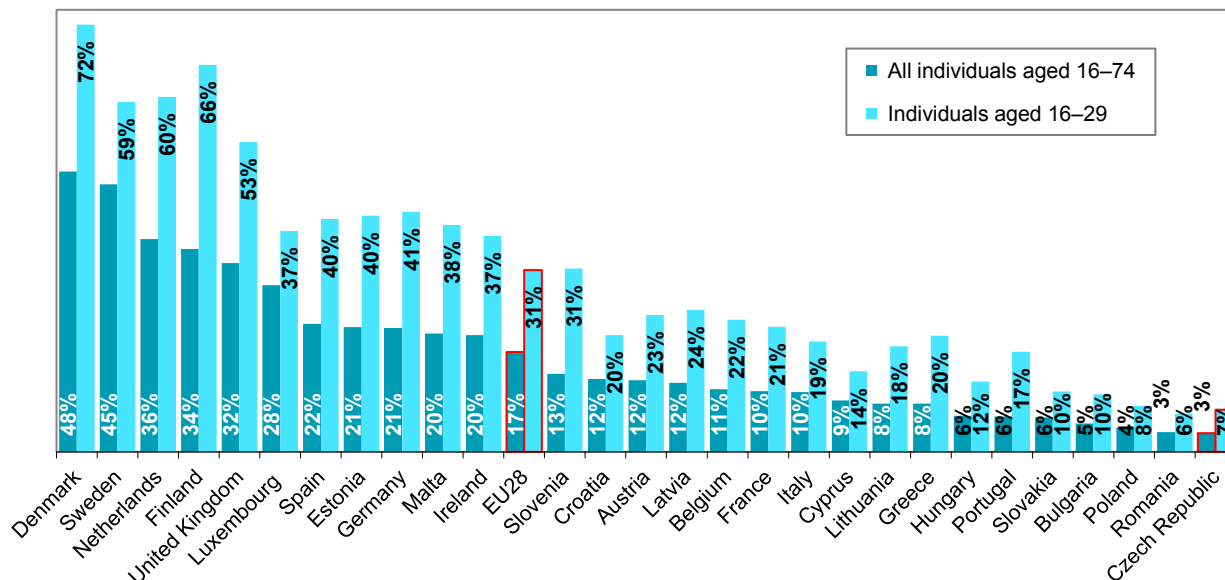
Watching videos on the internet

Another change in lifestyle is consumption of entertainment provided via internet like streaming video services and audio services.

- In 2016, **internet broadcasts of classic TV stations** were watched by 24% of persons over the age of 16 in the Czech Republic. Since 2010, the percentage of persons watching TV on the internet has increased by 10%; online broadcast is preferred by men rather than women.
- In recent years, the number of **internet TV stations** functioning only online without their classic TV broadcast counterpart, e.g. *Stream* or *Playtvak*, has increased. In 2016, these stations were watched by 21% of adults in the Czech Republic. They are the most popular with the young generation – within the age group of 16–24; programmes on these channels were watched by 46% of persons, and within the 25–34 age group it was 38% of persons.

- Spectators with higher demands, who find the offer of internet TV broadcasts insufficient, may pay for the access to **catalogues of paid programmes**, e.g. *Netflix*, *Voyo*, *DIGI2GO* or *HBO GO*, where they may select from a wide range of films. In the Czech Republic, this option is used only by a small group of inhabitants. In 2017, only 4% of inhabitants claimed to have used the programme range of **catalogues of paid films**⁵, the majority of which consists of younger age groups, university graduates, and students.

Figure C24 Individuals in EU countries watching video on demand from commercial services by age; 2016 (%)*



* as a percentage of all individuals in a given age group and country

Source: Eurostat 2018

- The **international comparison** shows that this activity is not too typical of Czech citizens. Within the European Union, in 2016, the percentage of individuals (16–74 of age) watching paid online programmes in the Czech Republic, along with Romania, was of the lowest value (3%), compared to 17% which represent the average use within the EU28. Across all EU countries, this option is mainly used by the young generation. For instance, in 2016, more than a half of individuals aged 16–29 claimed to have watched videos on the internet by means of paid film catalogues in the following EU countries – in Great Britain (53%), in Sweden (59%), in the Netherlands (60%), in Finland (66%), and in Denmark it was even 72%.

Internet use for travelling and accommodation

Persons planning trips, whether of a domestic or international nature, find the internet as a priceless means of assistance. Besides searching for information, it is also possible to purchase flight tickets or other transport tickets, as well as to book accommodations. The trend of recent years is travelling by private cars within the car-sharing option and booking accommodation with private providers – all arranged via the internet.

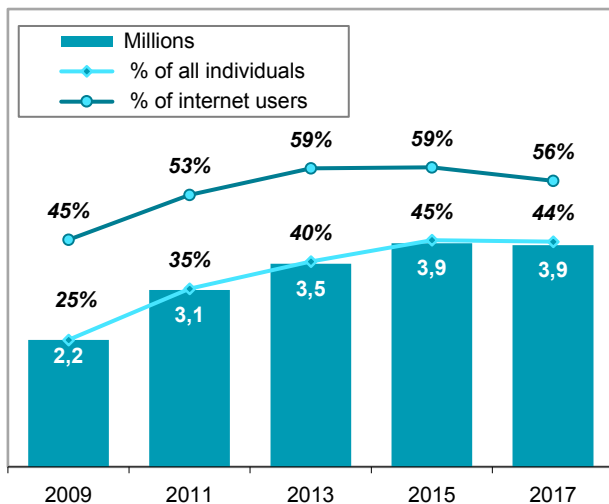
- In 2017, 44% of inhabitants over the age of 16 in the Czech Republic claimed to have searched for **information related to travelling and accommodation** on the internet⁶. This activity was more frequently performed by women, and, with respect to age, younger persons (aged 25–34).

⁵ **Watching video on demand (e.g. Netflix)** includes commercial services (charged-for) and, therefore, the videos that one might watch are on the basis of a kind of subscription (also one-time).

⁶ Looking for **information related to travel or accommodation** includes using the internet for ascertaining information about travel destination, trips, hotels or any other type of accommodation, travel tickets, etc. The reference period for looking for information about travel or accommodation is 3 months prior to interviewing. Only persons who looked for such information for private purposes were included.

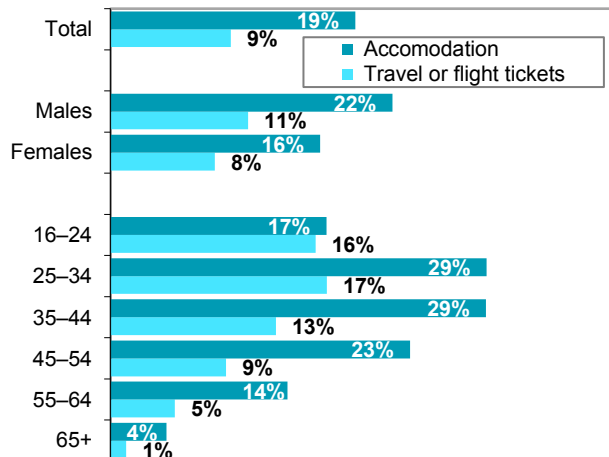
- Merely a fifth of inhabitants of the Czech Republic **paid for their accommodation via the internet** in 2017; those were mainly individuals aged 25–44. Accommodation over the internet is also more frequently arranged by university graduates. In the same year, 9% of persons over the age of 16 bought a **flight ticket or travel ticket** over the internet. They were mainly students or university graduates.

Figure C25 Individuals in the Czech Republic aged 16+ looking for information about travelling or accommodation



Source: CZSO 2018, Household ICT usage survey

Figure C26 Individuals in the Czech Republic purchasing accommodation or travel/flight tickets; 2017 (%)*

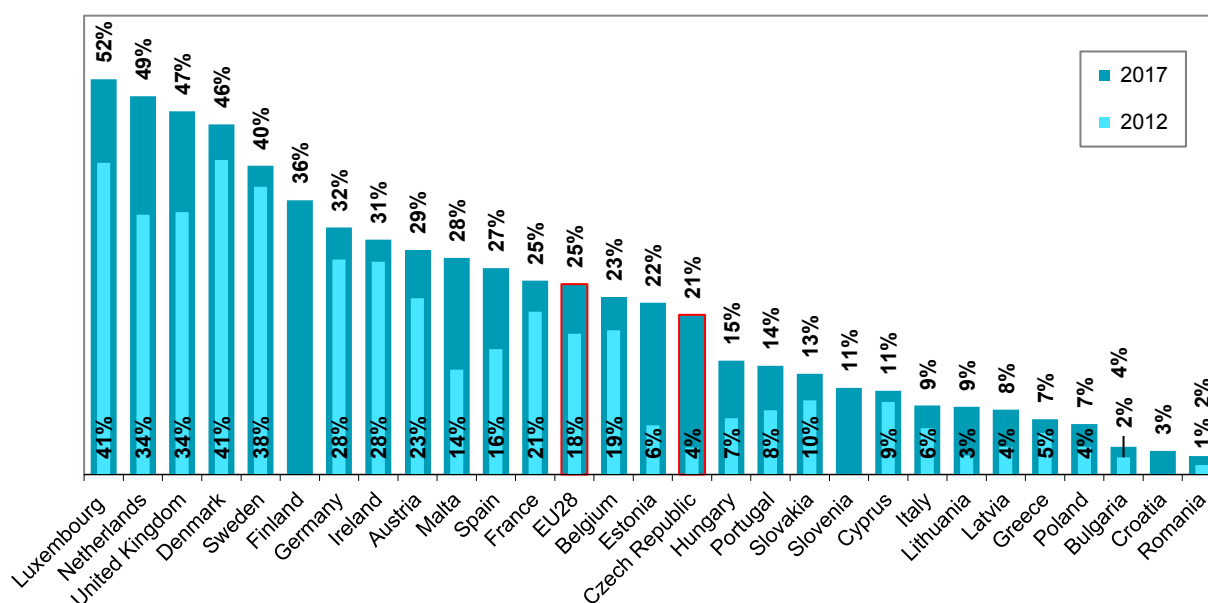


* as a percentage of all individuals in a given group

Source: CZSO 2018, Household ICT usage survey

- Czech people are very active with respect to seeking information on travelling and accommodation. In **European comparison**, for 2017, the Czech Republic found itself on the **eighth highest ranking**. Citizens of Luxembourg, Germany, and Scandinavia have been most active in this area. Should we compare the results for the years 2007 and 2017, in this decade **the Czech Republic has recorded the highest increase** in individuals, who use the internet for information seeking on travelling and accommodation.
- In the Czech Republic, in 2017, **accommodation** was arranged via the internet **from private providers** by 4.4% of individuals. Approximately a half of them used specialised platforms to do this (e.g. Airbnb, Couchsurfing), the other half used other websites (e.g. groups within social networks). This indicator represents the number of persons, who arrange this type of accommodation via the internet. These persons then went on holiday by themselves or with their families or friends. The indicator will provide even more evidence if concerning the total percentage of persons, who arranged some type of accommodation via the internet (therefore, including the accommodation from legal entities). With respect to this, the percentage of persons arranging accommodation from private providers amounted to 21%.

Figure C27 Individuals in EU countries aged 16–74 purchasing accommodation over the internet (%)*



* as a percentage of all individuals aged 16 to 74 in a given country

Source: Eurostat 2018

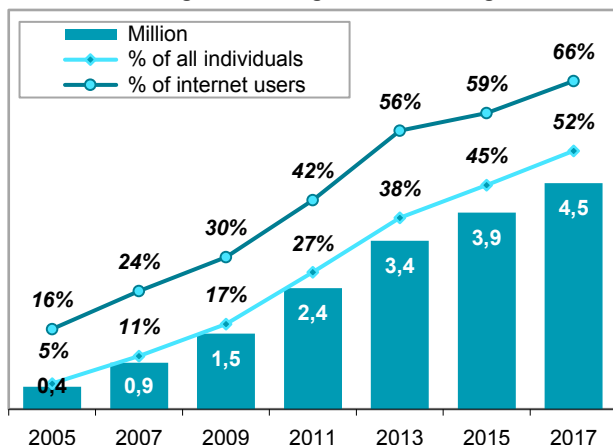
- Apart from shared accommodation, there are also websites providing **car-sharing**. Car-sharing commenced among students in 2010, and it pioneered car-sharing in the Czech Republic. Similarly, to accommodation, even here the interested persons may use specialised websites and applications (e.g. Uber, BlablaCar.cz), and other websites and applications (e.g. groups within social networks). In 2017 this service (via any kind of website or application) was used by 1.6% of individuals, i.e. 16% of users, who arranged transportation via the internet. With respect to car-sharing, the most involved group is the 16–24 age group (6%), or students (8%).

Use of cloud computing and internet banking by individuals

- With respect to the interconnection of various types of electronic devices used for internet access, the usage of **internet storage space**⁷ has become increasingly significant. In 2017, internet storage space in the Czech Republic was used by 22% of individuals. Compared to the year 2014, this number has increased by 7%. There is a higher number of male users than female (25% and 19%, respectively). The highest number (48%) is recorded within the age group 16–24. These services are frequently used by students (54%), who use devices with access to the internet more often, therefore they appreciate the possibility of access to documents from various places.

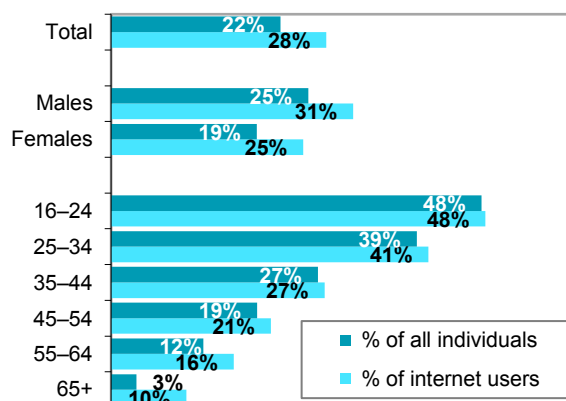
⁷ This includes services that enable uploading, storage, and access to one's own documents and files by means of remote online data storage spaces (e.g. Google Drive, OneDrive, Dropbox, uloz.to). Stored data may be viewed and modified from various places and devices.

Figure C28 Individuals in the Czech Republic aged 16+ using internet banking



Source: CZSO 2018, Household ICT usage survey

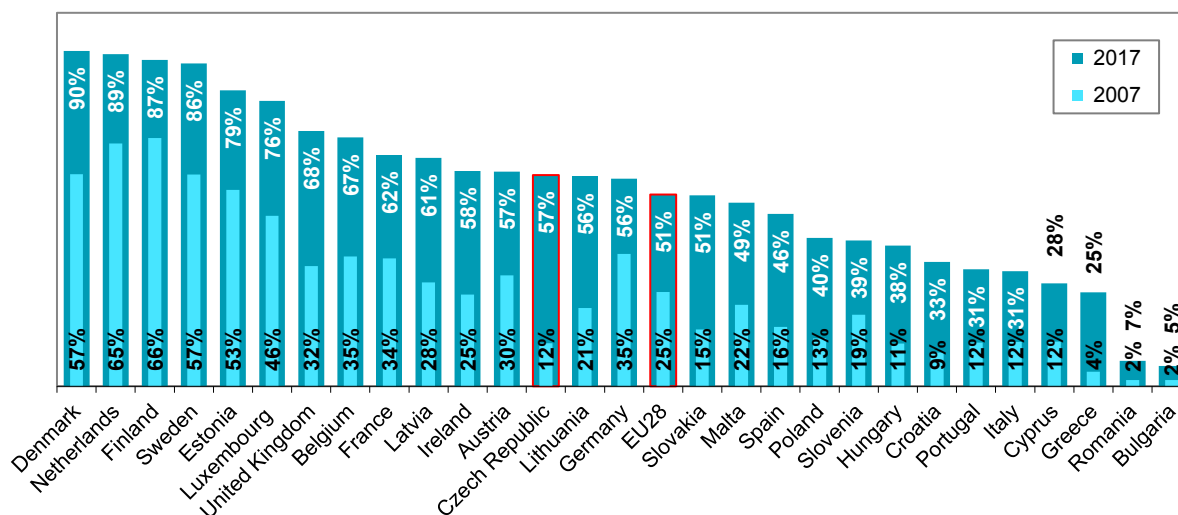
Figure C29 Individuals in the Czech Republic using storage space on the internet, 2017 (%)



Source: CZSO 2018, Household ICT usage survey

- Internet banking** is one of the fundamental financial online services designed primarily to provide remote control, and administration of a bank account. The portal offers the possibility to verify a bank account balance, to place payment orders, standing orders, set payment and withdrawal limits, etc. In Q2 of 2017, internet banking was in the Czech Republic used by 4.5 million individuals (52% of adult population and 66% of internet users) – ten years ago it was 0.9 million individuals (11% of adult population).

Figure C30 Individuals in EU countries aged 16–74 using internet banking (%)*



* as a percentage of all individuals aged 16 to 74 in a given country

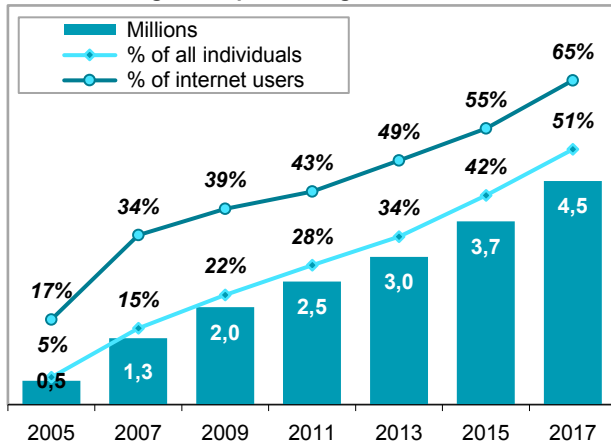
Source: Eurostat 2018

- Online banking services are now widely available in EU countries – often via apps as well as websites. In 2017, internet banking usage in our country was slightly above the **EU28 average**. The most active users of internet banking are the citizens of northern countries, and of the Netherlands. In the comparison of years 2007 and 2017, we must mention that within this decade, the Czech Republic recorded the highest increase in individuals using internet banking.
- Internet banking is the most frequently used online financial service in the Czech Republic. Other monitored **financial services** – online arrangement of insurance, loans, and securities trading – are used significantly less frequently. With respect to arranging insurance (e.g. travel insurance) online, the percentage is 10.2% (or 12.8% among the population using the internet). Only 0.7% of individuals (or 0.9% among the population using the internet) arrange loans and securities trading online.

C.4 Purchasing over the internet

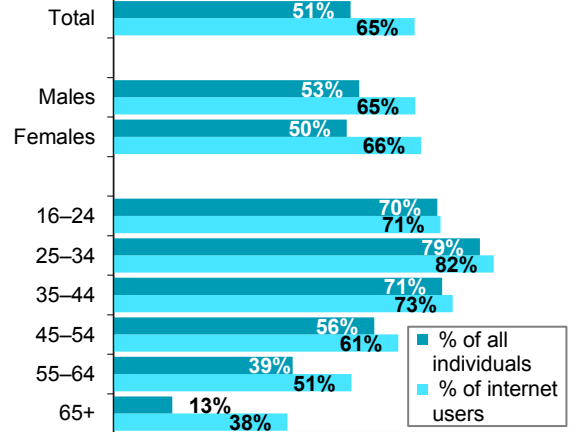
Online shopping is still increasing in popularity. Purchasing in e-shops has become a widespread purchasing variant among Czech consumers, as well as among other EU countries. The main advantage of purchasing over the internet is the possibility to shop anytime and anywhere, access to a wider range of products, and the possibility of fast price comparison of various sellers. This section reviews various aspects of online shopping behaviour of individuals, for example the development of online shopping, types of goods and services purchased, frequency of online shopping and how much e-shoppers spend.

Figure C31 Individuals in the Czech Republic aged 16+ purchasing over the internet



Source: CZSO 2018, Household ICT usage survey

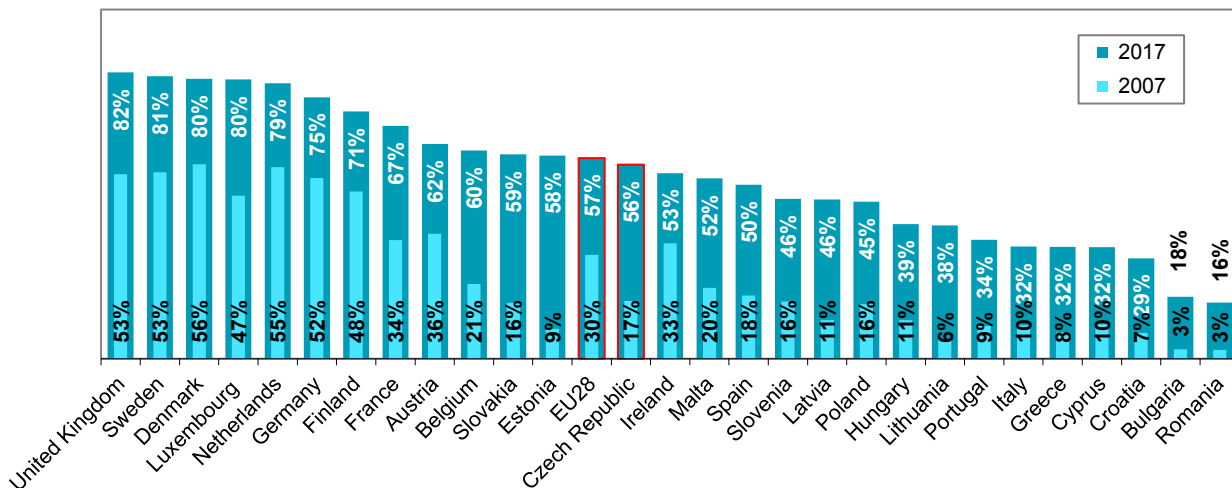
Figure C32 Individuals in the Czech Republic purchasing over the internet; 2017 (%)



Source: CZSO 2018, Household ICT usage survey

- The number of people using the internet for **online purchases**⁸ in the Czech Republic is increasing year by year. In Q2 of 2017, a total of 51% (4.5 million) of Czech inhabitants over the age of 16 stated to have purchased goods on the internet in the past 12 months. Only ten years ago, online purchasing was not a very sought service, used only by 15% (1.3 million) of the Czech adult population.

Figure C33 Individuals in EU countries aged 16-74 purchasing over the internet (%)*



* as a percentage of all individuals aged 16 to 74 in a given country

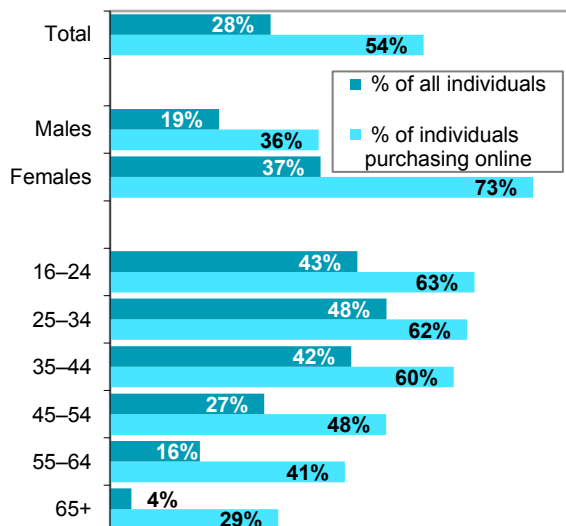
Source: Eurostat 2018

⁸ An individual purchasing on the internet is a person who in the last 12 months purchased or ordered goods or a service over the internet for private purposes. This e-commerce activity may be performed on any device including smart phone. Goods or services ordered do not need to be paid over the internet. Goods or services may be delivered on-line (over the internet) or off-line (by mail or in person). Reference period for online purchases is 12 months prior to the interview, only the amount of money spent on online purchases and frequency of purchasing online is measured with the reference period of 3 months.



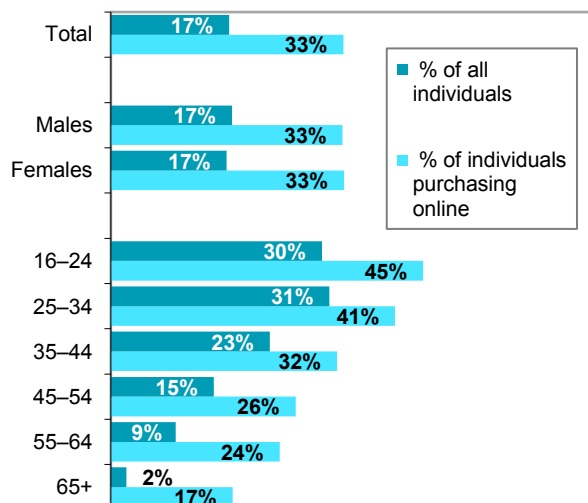
- Despite the fact that online purchasing **has been gaining in popularity** in the Czech Republic, in international comparison we still stand **just below the EU28 average**. Out of all EU countries, online purchasing has been **most commonly used in Great Britain** (in 2017 this was performed by 82% of individuals aged 16–74). Online purchasing is also very well-liked by the citizens of Denmark, Luxembourg, Sweden, Germany, and the Netherlands.

Figure C34 Individuals in the Czech Republic who purchased clothes or shoes over the internet; 2017 (%)



Source: CZSO 2018, Household ICT usage survey

Figure C35 Individuals in the Czech Republic who purchased tickets for cultural or sport events over the internet; 2017 (%)



Source: CZSO 2018, Household ICT usage survey

- The main advantage of purchasing over the internet is the ability to purchase from the comfort of home, and the possibility for fast comparison of prices from various sellers. This is also priceless when purchasing goods or services from **foreign sellers**. In 2017, the accommodation in hotels abroad, and goods via Amazon or eBay, were purchased by 10% of individuals in the Czech Republic; i.e. 19% of individuals purchasing online, purchased goods from a foreign seller, whether from another EU country or elsewhere in the world.
- Nevertheless, purchasing over the internet also has its downsides. One of them is the impossibility to view, test or try on the product. This is exactly the reason why a half of all persons who did not do any online purchasing in 2017 stated to prefer purchasing in bricks-and-mortar shops. Persons over the age of 65 do not prefer purchasing over the internet due to their lack of skills (77% of persons among this age group). They either do not use the internet at all (67%) or they use it only for basic activities, such as sending emails or viewing websites.
- Czech people mostly prefer to purchase clothes, shoes or fashion accessories online (28% of adult population and 54% of individuals purchasing online). **Online purchasing of groceries** and of cosmetic products has also been gaining in popularity in recent years. In 2017, these types of goods were purchased by 11% of inhabitants.
- The percentage of Czech citizens, who purchase groceries, beverages, and cosmetic products over the internet, was below the EU average in 2017, meaning 14% of individuals or 24% of individuals purchasing online. These types of goods are most frequently purchased over the internet by the inhabitants of the Netherlands, Estonia, and Great Britain.
- In addition to purchasing goods, **services** may also be purchased over the internet. In 2017, Czech citizens were mainly interested in purchasing **accommodation** (19% of individuals; 24% of individuals purchasing online) and **tickets** to cultural or sports events (17% of individuals; 33% of individuals purchasing online).