

## WHO, WHERE AND WHY USES THE INTERNET?

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*The article offers an overview of the use of information and communication technology in Estonia. The main focus is on enterprises with ten or more persons employed, residents aged 16–74, and households.*

The use of information technology in enterprises with ten or more persons employed has been surveyed since 2001. In 2012, 3,100 enterprises participated in the survey. Since 2005, Statistics Estonia studies the use of information technology among the population aged 16–74 and in households – this survey is carried out as an appendix to the Labour Force Survey. In 2012, 4,900 residents participated in this survey. The Eurostat questionnaires “Community survey on ICT usage in enterprises (e-commerce)” and “Community survey on ICT usage in households and by individuals” serve as the basis for the information technology surveys. Based on these questionnaires, Statistics Estonia prepared its own questionnaires “Information technology in enterprises” and “Information technology in households”. The aim was to obtain general information about information technology equipment, Internet use, e-commerce, and various computer skills. Use of information technology is studied by statistical organisations in all European Union (EU) Member States, on the basis of the same Eurostat questionnaires.

### Use of information technology in enterprises

In present-day Estonia, it is unimaginable that an enterprise could exist without computers and the Internet. The share of enterprises using computers and the Internet has reached a level where there is not much room for further increase – almost all enterprises with ten or more persons employed use computers and the Internet. Those few enterprises who can manage without computers use the services of accounting firms or their parent enterprise to take care of administration and accounting.

Internet connection stands almost always for broadband connection (98% of enterprises with Internet access use a wired or mobile broadband connection). Increasingly fewer users have a slow-speed narrowband connection, whereby the Internet connection is established by calling the number of the dial-up centre of the service provider. When the dial-up service runs via an ordinary telephone line, the line is busy during the Internet connection. In case of an ISDN connection, it is also possible to use the phone while the Internet connection is established. Narrowband connections are still used by one tenth of enterprises, mainly in combination with a broadband connection. The most popular type of Internet connection in enterprises with ten or more persons employed is a DSL connection (e.g. ADSL), whereby telephone lines are used for data transfer. This type of connection is used by eight out of ten enterprises. Other broadband connections, such as broadband access via cable, are used by a quarter of enterprises (it is possible that an enterprise uses more than one type of Internet connection). The statistics on the use of different connections types in Estonia are similar to the average indicators of the European Union.

Mobile network operators have developed Internet connections that are based on at least 3G technology and offer mobile broadband connection for mobile phones as well as laptops. Mobile broadband connection is not tied to a specific location, which is a great advantage when Internet access is needed outside of the office for mobile working. It also offers a good backup option in case of any problems with the main wired Internet connection. If the quality of the mobile broadband connection is sufficiently good, it is often possible to forgo the fixed broadband connection, especially in smaller enterprises. Mobile broadband connection is used – either alone or combined with other connection types – by half of the enterprises with ten or more employees.

Speed is an important aspect of Internet connection. The connection speeds available are constantly increasing, allowing an increasing amount of content to be shared on the Internet. This, in turn, requires increasingly higher data transfer speeds. In January 2012, nearly half of the Estonian enterprises with ten or more persons employed had Internet access with a download speed over 10 Mbit/s, and one fifth had a download speed over 30 Mbit/s. Compared to 2011, the share of enterprises accessing Internet with a download speed over 10 Mbit/s has increased, and the share of enterprises accessing Internet with a download speed under 2 Mbit/s has decreased significantly (Figure 1, p. 30). Big enterprises have invested more into a faster Internet connection than other enterprises: three quarters of enterprises with 250 or more persons employed have a download speed over 10 Mbit/s and one third have a download speed over 30 Mbit/s.

In enterprises with Internet access, not all employees use a computer and the Internet in their everyday work: nearly half of the employees in enterprises with ten or more persons employed use a computer with Internet access in their job. The share of employees using computers with Internet access depends greatly on the activity of the enterprise. Almost all employees in financial and insurance enterprises use the computer, compared to only one fifth of employees in agricultural, forestry and fishing enterprises and in mining and quarrying enterprises (Figure 2, p. 31). One quarter of the employees using a computer with Internet access have also been provided with portable devices that allow mobile Internet connection. In construction enterprises and information and communication enterprises, about half of the employees using a computer with Internet access are able to use mobile Internet at the employer's expense. In human health and social work activities, this option is available only to slightly less than a tenth of the employees using a computer with Internet access.

The provision of devices allowing a mobile Internet connection (e.g. laptop, tablet computer, smartphone) for the employees was considered necessary by half of the enterprises with ten or more persons employed. Provision of such devices was taken into account only if the enterprise also paid the subsequent costs of using mobile Internet. Whether an enterprise provides its employees with devices allowing mobile Internet connection depends both on the economic activity and the size of the enterprise. The share of enterprises that consider the provision of such devices necessary was the biggest in financial and insurance activities and in information and communication – almost three quarters of enterprises with ten or more persons employed. The share of enterprises considering the provision of such devices necessary was the lowest in human health and social work activities – less than a fifth of these enterprises. Among enterprises with 250 or more persons employed, four fifths had bought mobile Internet devices for their employees, while among enterprises with 10–19 persons employed there were two times fewer enterprises (i.e. two fifths) who had provided their employees with these devices.

The main reason for providing employees with devices allowing mobile Internet connection was to enable the employees to access the enterprise's e-mail system and online information – this reason was cited by nine out of ten enterprises. Access to the enterprise's documents was considered important mostly by education, information and communication enterprises – three quarters of them considered it necessary.

Based on the share of enterprises that have provided their employees with devices for mobile Internet access, Estonia ranks in the middle among EU Member States. The share of such enterprises is the biggest in Finland – 78% of enterprises with ten or more employees – and the lowest in Romania, with only 22% of enterprises (Figure 3, p. 32). In most EU countries, including Estonia, the share of enterprises who have bought mobile Internet devices for their employees is bigger among large enterprises. Estonian enterprises cited the limited need to use mobile Internet for business purposes as the main reason why mobile Internet is not used more widely. Other reasons (in addition to lack of need) were cited by 30% of enterprises in other EU countries and by 17% of enterprises in Estonia.

Communication with the public sector is increasingly taking place online and nearly all Estonian enterprises with ten or more persons employed have used the e-services of public authorities and have been satisfied with these, with one fifth being very satisfied. As of 2012, the ID card has also been used by a majority of the enterprises (nine out of ten), mainly in order to add a digital

signature. At the same time, e-commerce is not very widespread among Estonian enterprises. Only 12% of enterprises with ten or more persons employed in Estonia have sold goods and services through their website or other channels. 8% of enterprises had made purchases via a website or EDI channels. One reason for the low popularity of e-commerce is the smallness of Estonia: on the one hand, it is quite easy to visit any commercial establishment in person; on the other hand, people know each other and therefore orders can usually be placed by email, fax or phone (which is not part of e-commerce).

## Use of information technology in households

Having Internet access at home has become more and more common. In the 1st quarter of 2012, three quarters of households in Estonia had Internet access at home, which is the same as the EU average. Almost all of the households with Internet access had a broadband Internet connection (e.g. DSL, cable TV, 3G mobile Internet). Internet access is more common in larger households. Almost all (97%) households with children and two or more adults had Internet connection at home. Among single-person households 59% had an Internet connection at home, which is seven percentage points more than in the previous year (Table 1, p. 33). Households cited lack of Internet skills and the cost of equipment as the main obstacles to having an Internet connection at home.

There are fewer and fewer people who do not use the computer and the Internet. In the first quarter of 2012, 19% of the residents aged 16–74 in Estonia had never used the Internet, compared to 23% in the EU. The share of persons who have never used the Internet is the smallest in Sweden (5%), Denmark (6%), Luxembourg (6%), the Netherlands (6%) and Finland (7%). In the other EU Member States, the share of such persons was 15% or more. The share of persons who have never used the Internet was the biggest in Romania (48%), Bulgaria (42%) and Greece (42%).

78% of Estonian residents aged 16–74 used the computer and the Internet in the 1st quarter of 2012. This share was smaller in older age groups: six out of ten among persons aged 55–64 and three out of ten among persons aged 65–74 used the computer and the Internet in that period. Compared to 2011, the share of Internet users rose six percentage points in the age group 55–64 and two percentage points in the age group 65–74. In the EU, 73% of the population used the Internet in the 1st quarter of 2012. In the EU as a whole, there are also more Internet users among younger people. The share of Internet users in the age group 55–74 in Estonia reached the EU average (46%) in the first quarter of 2012. In the younger age groups, Estonia had more Internet users than the EU average. In the 1st quarter of 2012, the share of Internet users in Estonia was 98% in the age group 16–24 (95% in the EU) and 90% in the age group 25–54 (82% in the EU).

The biggest share of Estonian Internet users read online publications (91% of Internet users), followed by e-mailing (90%), looking for information about products and services (89%) and Internet banking (87%). Other very popular activities are making calls via the Internet, using social media, entertainment (downloading games, pictures, films, music) – more than half of Internet users have used the Internet for these activities.

The same activities are also the most common among EU Internet users: 89% use e-mailing, 83% look for information about products and services, 61% read online publications and 54% use Internet banking. While some Internet activities are equally popular in all EU countries, there are some activities that are not common everywhere. For example, the share of e-mail users ranges from 75 to 96% in EU countries, and the share of Internet users who look for information about products and services ranges from 67 to 92%. On the other hand, the share of Internet users who have used Internet banking is 91% in Finland and 87% in Estonia, compared to only 7% in Bulgaria and 8% in Romania. Estonian Internet users are also at the forefront in terms of reading online publications. At the same time, the use of the Internet for travel services among Estonian Internet users is significantly less common than in the EU on average.

Besides wired Internet connections at home, the use of Internet on the move – that is, outside of home and work – has also become increasingly popular, especially among young people. In addition to location-bound wireless connections, such as WiFi, more and more people are using the Internet through a mobile phone network. In the 1st quarter of 2012, the share of persons who had used the Internet with a portable device (e.g. laptop, tablet computer, smartphone) outside of home or work was 37% in Estonia, which is slightly higher than the EU average (32% of 16–74-year-olds). The share of 16–74-year-olds who had used the Internet with a laptop, tablet computer or smartphone outside of home or work was the highest, i.e. over 50%, in Denmark, Ireland, Luxembourg, the Netherlands, Finland and Sweden. The value of this indicator was the lowest, i.e. below 20%, in Bulgaria, Italy, Hungary, Lithuania and Romania (Figure 4, p. 34).

In Estonia, the share of those who had used the Internet on a portable device outside of home or work was higher than the EU average in the age groups 16–24 and 25–54, but lower than the EU average in the age group 55–74. In the EU, 58% of 16–24-year-olds had used the Internet with a laptop, tablet computer or smartphone – in Estonia, this share was 65%. In the age group 25–54, the shares were 36% in the EU and 43% in Estonia. Among 55–74-year-olds, 12% in the EU and 10% in Estonia had used the Internet on a laptop, tablet computer or smartphone. In the European Union, 24% of 16–74-year-olds had used the Internet with a smartphone, compared to 18% in Estonia. In the EU, Internet use on smartphones is more common among young people than using the Internet on a laptop or tablet computer, whereas in Estonia the trend is the opposite.

In the 1st quarter of 2012, 16–74-year-old Estonian residents used handheld devices (e.g. smartphones) mainly for e-mailing (76% of those using the Internet with a handheld device), for reading online publications (63%) and for participating in social networks (59%). Men used positioning applications (e.g. GPS) twice as much as women (respectively 54% and 26% of those using the Internet on a handheld device). There were also slightly more men than women who used the Internet on a handheld device to play or download games, images, films, music etc. (50% and 45%, respectively) and to receive audio or video files via podcasting (27% and 20%, respectively). The impact of age was clear in case of several activities that were much more popular in younger age groups – such as using mobile Internet to participate in social networks, to play or download games, images, films, music etc., and to receive audio or video files via podcasting.

The most popular public sector e-service in Estonia was declaration of taxes – this had been used by nearly three quarters of Internet users. Nearly two thirds of Internet users had bought medicines with a digital prescription. The least popular public e-services were filing applications for a birth or marriage certificate or for a construction permit, and changing one's place of residence in the Population Register – at the same time, half of the residents were aware of these services. It should be mentioned that there is usually no need to apply for a birth or marriage certificate every year, while tax returns must be completed and submitted every year (although it is not obligatory for everyone). In 2012, 1.3% of Internet users were not aware of any public sector e-services. In general, Estonian people are satisfied with the e-services of public authorities: eight out of ten Internet users aware of these e-services were satisfied or very satisfied with the public sector e-services. Only less than 2% of the population was somewhat or very dissatisfied.

Among the Estonian population, e-commerce is significantly less popular than in the EU on average. Three out of ten 16–74-year-old Internet users in Estonia had bought goods and services over the Internet in the last year – in the EU, this rate was six out of ten. Goods and services were mainly bought from domestic sellers. Eight out of ten e-commerce users in Estonia had bought goods or services from domestic sellers (in the EU, nine out of ten e-commerce users had done so). Half of e-commerce users in Estonia and a quarter of e-commerce users in the EU had made online purchases from other EU Member States (from outside their country of residence). Online purchases from outside the EU had been made by a quarter of e-commerce users in Estonia and by an eighth of e-commerce users in the EU.

*In Estonia, men and women used e-commerce more or less equally (used by 22% of men and 24% of women residing in Estonia). E-commerce was more popular among the urban population (25%) than among the rural population (19%). The level of education had an even bigger influence on the use of e-commerce: among persons with higher, upper secondary and below upper secondary education the share of e-commerce users was 34%, 20% and 12%, respectively. The most popular online purchase was various tickets (e.g. concert, cinema, theatre tickets), as nearly half of e-commerce users had bought tickets online. Clothes, sports goods and travel and accommodation services were also popular items for online purchasing.*

## **Conclusion**

*Information and communication technology is a fast-developing and changing area of activity. Technological solutions that were completely unknown a few years ago have become common in our everyday life; and the technological solutions that were common only recently are now obsolete. For example, Internet connections through a mobile phone network have developed very fast and have become indispensable, while dial-up Internet connections have faded into oblivion. The statistics outlined in this article have been collected in the first half of 2012 – by now, the use of Internet through a mobile phone network is probably much more common already.*

*The Estonian public sector has made a great contribution to the development of e-services, in close cooperation with the private sector. As a result, the use of public sector e-services is widespread in Estonia. In some parts of the world, the use of digital signatures and electronic identification is still quite uncommon, while in Estonia both Internet banking and electronic identification (using Internet banks, ID cards or other methods) are widely used.*

*It is no longer possible to get things done without the means of information technology: even those who do not use information technology personally are indirectly benefitting from it through other people. There are many elderly people who have never used a computer or the Internet, and thus they are not among the users of public sector e-services. At the same time, very many of them have bought medicines at a pharmacy with a digital prescription and quite a few of them have voted online with someone's assistance.*