# INFORMATION AND COMMUNICATION TECHNOLOGIES (ICT) USAGE IN ENTERPRISES IN 2022

In 2022, 96.1% of the **non-financial enterprises with 10 or more persons employed** had internet access. Fixed internet connection was available in 89.1% of the enterprises and the maximum download speed in 45.7% was more than 100 Mbps. Two thirds (66.1%) of the enterprises with 250 or more persons employed had download speed more than 100 Mbps.

Figure 1. Enterprises with fixed internet connection by maximum download speed and size class in 2022
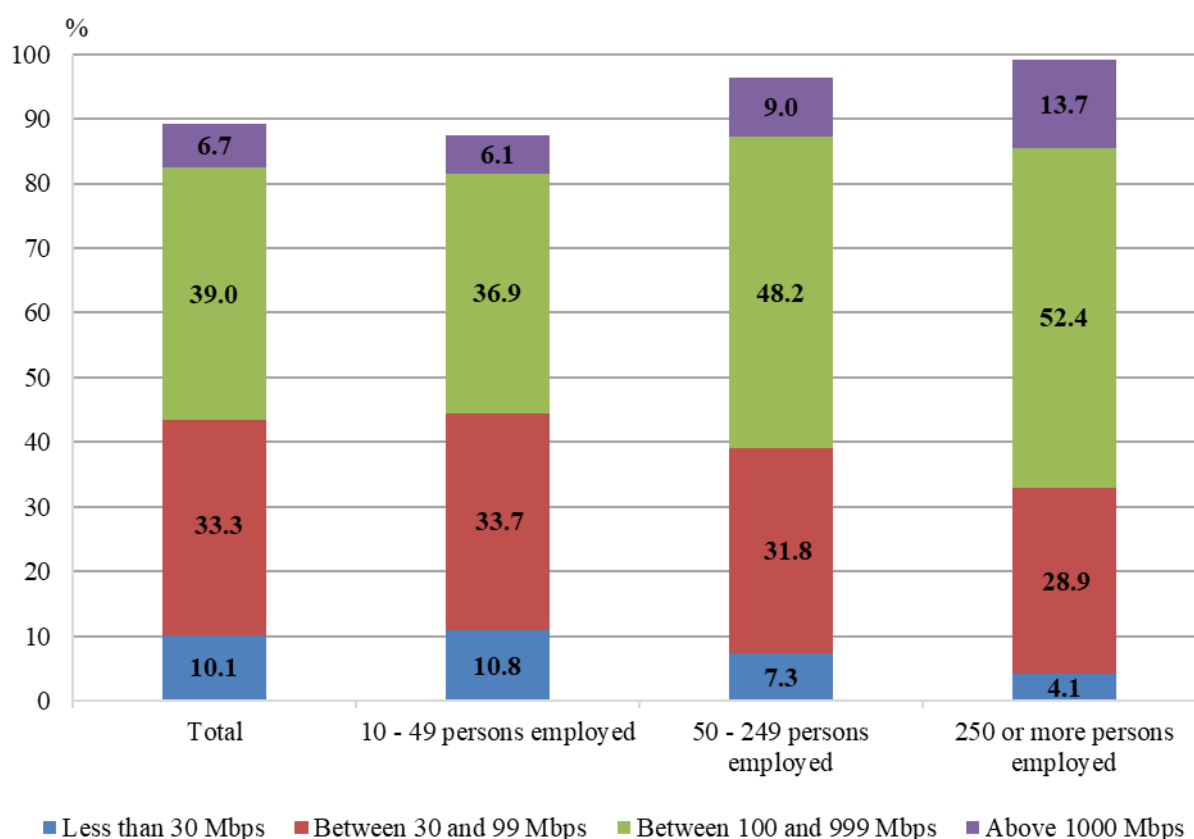
In 2022, 78.1% of the enterprises provided their staff with portable devices that allow a mobile connection to the internet using mobile telephone networks.

The relative share of the persons employed who had access to the internet was 40.2%. Portable devices that allow a mobile connection to the internet for business purposes used by 22.2% and for a five-year period the relative share has increased more than two times (Figure 2). The biggest relative share of the persons employed who used the internet and portable devices with mobile connection was observed among the enterprises in sector 'Information and communication' - respectively 94.5% and 65.1%.

Figure 2. Share of persons employed having internet access and using portable devices with mobile internet connection
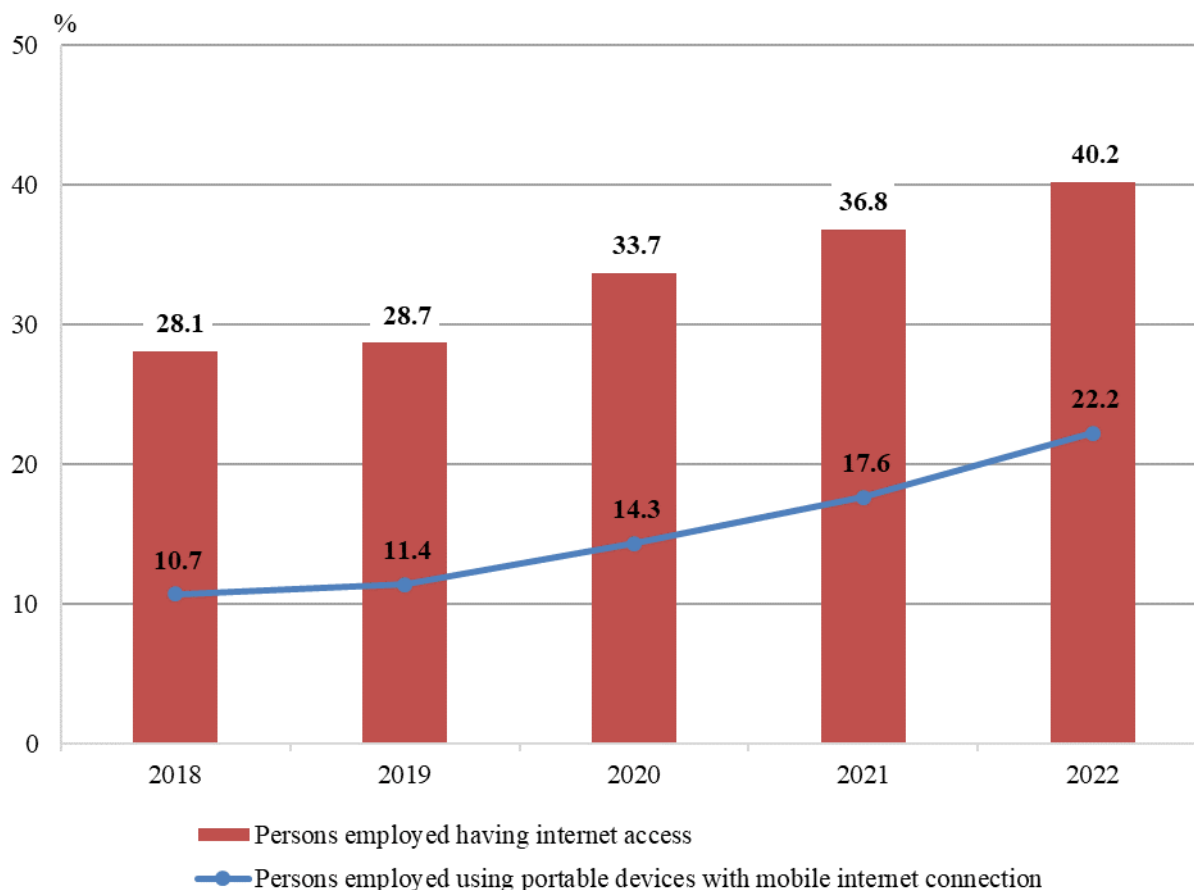
In 2022, more than two-thirds of the enterprises (67.5%) provided the persons employed with remote access, and the highest relative share was observed among the enterprises with 250 or more persons employed - 89.0%. Enterprises provided remote access to the following information resources:

- e-mail - 64.8%;
- documents of the enterprise (files, spreadsheets, presentations, charts, photos) - 47.2%;
- business applications or software of the enterprise - 39.4%.

Remote meetings via the internet conducted 28.2% of the enterprises. This practice was most widespread in sectors 'Information and communication' and 'Professional, scientific and technical activities' - respectively 84.3% and 67.2%, and it was least often applied in sector 'Accomodation and food service activities' (8.7%).

Electronic commerce (e-commerce)

E-commerce is the sale or purchase of goods or services conducted via the internet and includes sales or purchases made via website or apps, or via automated data exchange (EDI-type messages).

In 2021, 14.9% of the enterprises sold goods or services online and the turnover of e-commerce was 6.9% of the total turnover of the enterprises. The relative share of the enterprises, which had web sales via their own website or app, was 10.7% and of those using e-commerce marketplaces for trading

goods or services such as eBay, Booking.com, Amazon, Alibaba, eMAG, TimoCom, Glovo, Takeaway, etc. - 6.1%. EDI-type sales of goods or services had 2.2% of the enterprises.

From the enterprises that had web sales, 96.7% sold goods and services to customers in Bulgaria, 34.1% to customers in EU countries and 19.8% to other countries.

Over a five-year period, the relative share of the enterprises that had e-commerce sales of goods or services increased nearly two times.

Figure 3. Share of enterprises having online sales of goods or services by size class
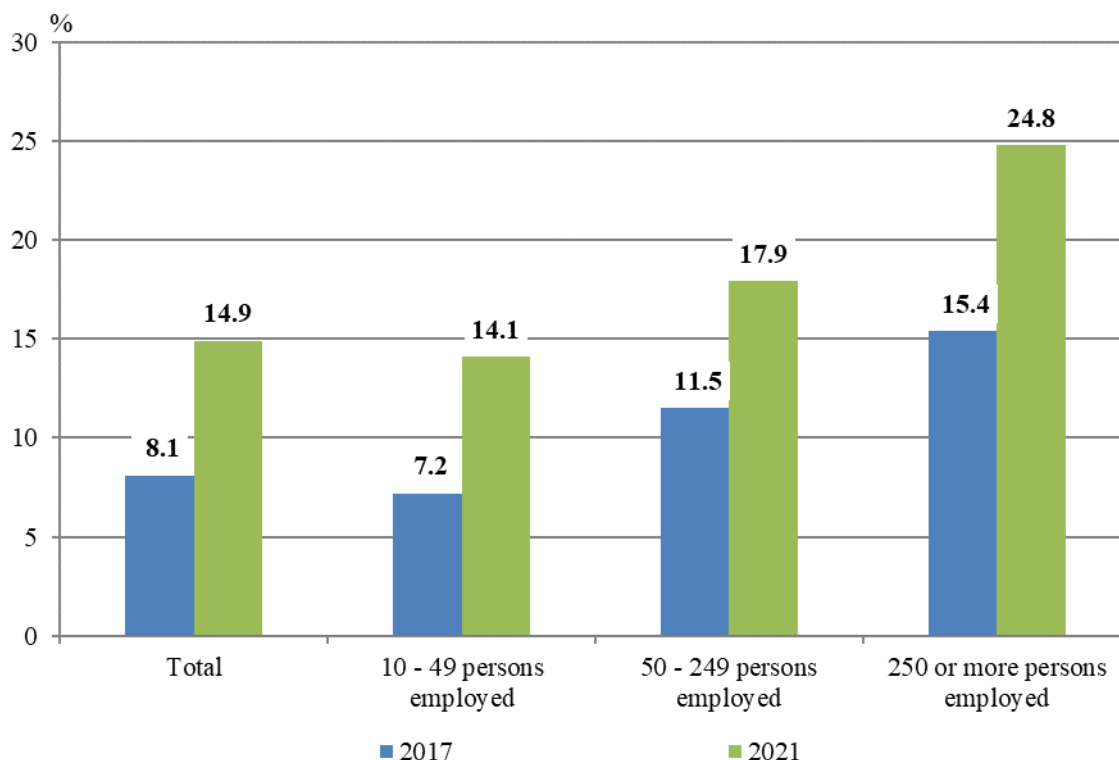
ICT specialists and skills

In 2022, 15.9% of the enterprises had persons employed for whom the main job was to develop, operate or maintain ICT systems or applications. The biggest relative share was observed among the enterprises in sector 'Information and communication' (69.0%) and the smallest in sector 'Construction' - 5.4% (Table 1).

In 2021, 8.2% of the enterprises recruited or tried to recruit ICT specialists and 3.8% had difficulties to fill the vacancies.

1. Share of enterprises employing ICT specialists by size class and economic activities in 2022

(Per cent)

	Enterprises with ICT specialists
Total	**15.9**
By size class	
10 - 49 persons employed	11.9
50 - 249 persons employed	30.5
250 or more persons employed	60.9
By economic activitiy	
Manufactoring	14.7
Electricity, gas and steam, water supply, sewerage and waste management	30.1
Construction	5.4
Wholesale and retail trade; repair of motor vehicles and motorcycles	13.9
Transportation and storage	7.9
Real estate activities	9.5
Information and communication	69.0
Real estate activities	17.7
Professional, scientific and technical activities	27.3
Administrative and support activities	13.5

In order to improve the qualification of the employees, 9.1% of the employers provided training in the field of ICT.
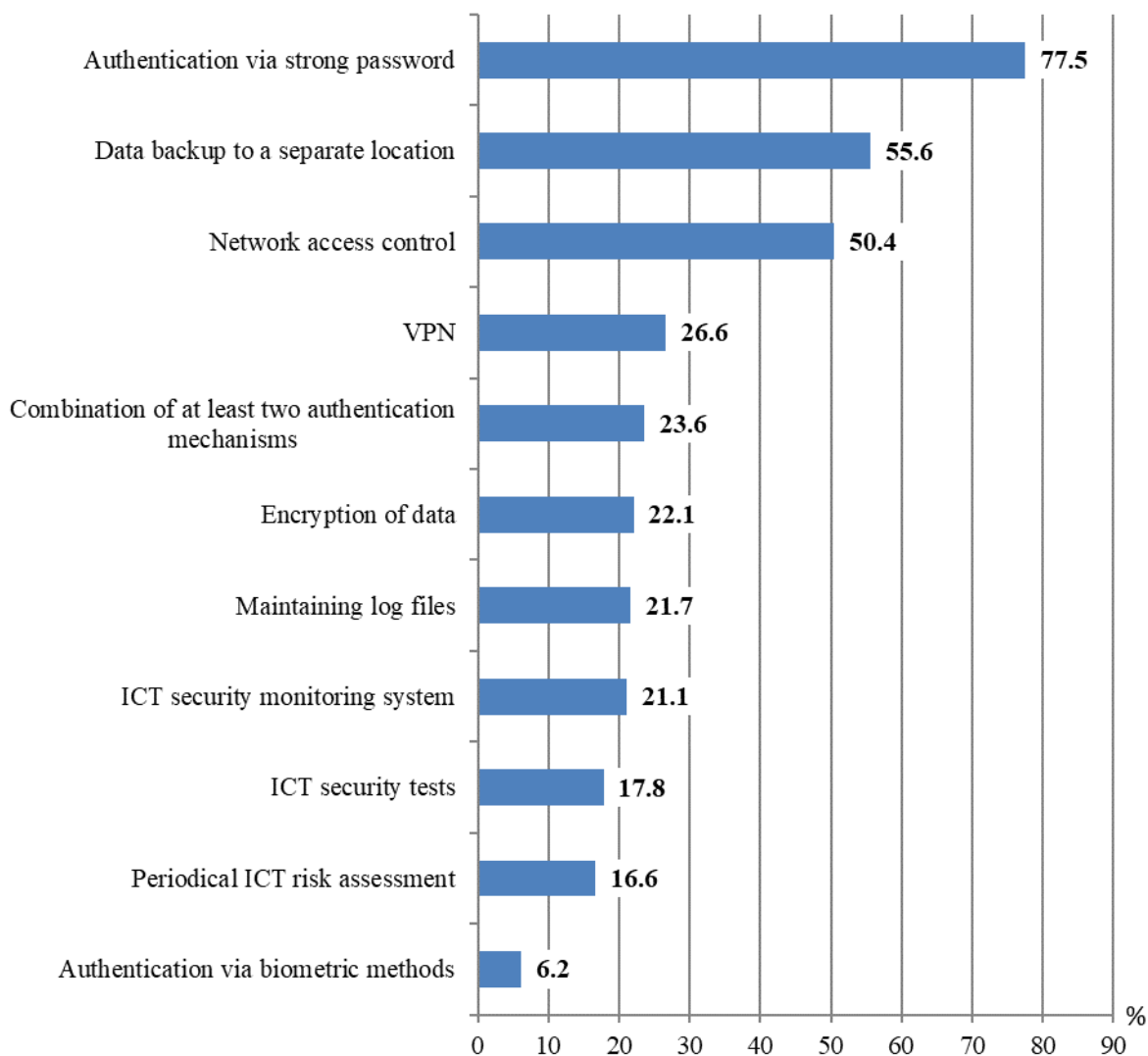
ICT security

ICT security means measures, controls and procedures applied on enterprise's ICT systems to ensure integrity, authenticity, availability and confidentiality of data and systems. Results of the survey showed that 81.9% of the enterprises applied various ICT security measures. The most common measures were: strong password authentication (77.5%); data backup to a separate location (55.6%) and network access control - 50.4% (Figure 4).

Every second enterprise (48.0%) made persons employed aware of their obligations in ICT security related issues in the following ways:
- voluntary training or internally available information - 39.5%;
- compulsory training courses or viewing compulsory material - 18.4%;
- by contract of employment - 16.7%.

Figure 4. Share of enterprises by type of ICT security measures applied in 2022

In half of the enterprises (50.0%), the ICT security related activities were carried out by external suppliers, and in 33.4% - by own employees, incl. those employed in parent or affiliate enterprises.

In 2021, 11.0% of the enterprises experienced ICT related security incidents, and 8.8% of the enterprises encountered unavailability of ICT services and 4.1% were affected by destruction or corruption of data.

The relative share of enterprises which had insurance against ICT security incidents (cyber insurance) was 4.0%.

2 "P. Volov" Str., 1038 Sofia, Bulgaria, +359 2 9857 111, info@nsi.bg, www.nsi.bg

ICT and the environment

In 2022, 61.6% of the enterprises applied measures to save the amount of paper used for printing and copying, and 33.8% - to reduce the energy consumprion of the ICT equipment. 41.1% of the enterprises consider environmental impact of ICT equipment and ICT services when selecting them (e.g. energy efficiency, a take-back program, products made from recyclable material, easily repairable, durable and sustainable, etc.).

Enterprises usually proceed with the ICT equipment (computers, monitors, printers, mobile phones) that they no longer used in some of the following ways:

- 54.5% disposed it of or recycle it (in electronic waste collection or leaving it to the retailer to dispose of);
- 49.8% kept it in the enterprise to be used as spare parts or because of concerns about disclosure of sensitive information;
- 21.8% sold it, returned it to a leasing enterprise or donated it.

Methodological notes

The survey on Information and Communication Technologies (ICT) usage and e-commerce in enterprises is a part of the European statistical programme and has been carried out in Bulgaria according to the Commission implementing Regulation (EU) 2020/1030. The survey was jointly financed by the NSI and by the European Commission under a signed agreement between the two institutions. The main purpose of the survey was to obtain reliable and comparable data, which reflect the dissemination and usage of ICT at national and European level. The survey was representative as a stratified random sample of enterprises from **the non-financial sector with 10 or more persons employed** was used. The survey was conducted by means of online questionnaire, sent to the respondents by e-mail. The 2022 questionnaire comprised several topics like availability of access to the internet in the enterprises, e-commerce, ICT specialists and skills, ICT security, ICT and the environment, etc.

Fixed internet connection includes ADSL, SDSL, VDSL, fibre optics technology (FTTH), cable technology, LAN, high capacity leased lines, fixed wireless access connections (e.g. satellite connection, public Wi-Fi connection, WiMax), etc.

A **mobile internet connection** to the internet means the usage of portable devices (portable computers, tablets or other portable devices such as smartphones) connecting to the internet through mobile telephone networks (at least 3G).

EDI-type e-commerce are sales or purchases made via **EDI-type messages** in agreed or standard format suitable for automated processing (e.g. EDIFACT, XML, UBL). Usually EDI-type e-commerce is operated between enterprises.

More information and data from surveys on Information and Communications Technologies usage in enterprises can be found on the NSI's website (https://nsi.bg/en/content/2841/ict-usage-enterprises) and in Information System 'Infostat' (https://infostat.nsi.bg/infostat/pages/module .jsf?x_2=241).