

D Enterprises and ICT

Data given in this chapter are based on results of the **Annual Statistical Survey on the ICT Use in Enterprises (ICT 5-01)**, which has been carried out by the Czech Statistical Office (CZSO) since 2002 when the first pilot survey was performed to obtain data for the reference years 2000 and 2001.

Since 2006, the survey has been conducted in accord with the **Regulation (EC) No 808/2004** of the European Parliament and of the Council of 21 April 2004 concerning Community statistics on the information society. This allows obtaining of internationally comparable data within the EU28 Member States.

The survey is conducted every year in the first quarter of the reference year in the sample of approximately **8 000 enterprises having 10+ employees** in selected economic activities. The results are then grossed up to the whole population of the measured enterprises, which is around 40 000 enterprises with 10+ employees.

The data obtained are available **broken down** by prevailing economic activity (**CZ-NACE industry categories**) and **size classes** of enterprises measured.

The **reference period** is, in case of majority of data on equipment or ICT use in enterprises, **January of a given year** (in this issue it is January 2018) when the survey is carried out. In the case of indicators on e-commerce, use of Big Data analyses, and 3D printing the reference period is the **whole previous calendar year** (in this issue it is 2017).

The data obtained in 2008 and later are **not fully comparable** with the data of previous years. This difference is due to implementation of a new NACE classification.

The data for the Czech Republic presented by Eurostat **may slightly differ** until 2015 from data presented by the CZSO. This difference is because Eurostat does not include enterprises from the financial sector. Data are fully comparable since 2016.

Definitions (in alphabetical order)

- **3D printing** (additive manufacturing) is a process of making three-dimensional objects in a 3D printer. 3D objects are formed by laying down many thin layers of a material in succession from a three-dimensional digital model.
- **Big Data** shall mean extremely large data sets without any structure. They may be generated by people (e.g. by their activities in social networks) or by machines (from machine-to-machine communication, from production processes, etc.). The basic method of **the Big Data analysis** is data mining or using advanced analytic algorithms (e.g. predictive analyses).
- **Cloud computing** refers to **ICT services** that are used over the Internet to access software, computing power, storage capacity, etc. where the services have all of the following characteristics: are delivered from servers of service providers, can be easily scaled up or down, can be used on-demand by the user and are paid for (either per user, by capacity used, or they are pre-paid).
- The **digital data circuit (leased line)**, shall mean a data line leased from telecommunication operators and serving an enterprise needs to get connected to the Internet. The enterprise leases a transmission line with a guaranteed (contracted) transmission velocity and other parameters as transmission security and encrypting from the provider.
- The **electronic data interchange (EDI)** refers to the transmission of structured messages, as orders, invoices, etc., e.g. between two computer applications, information or database systems, implemented over the Internet or other network using in advance agreed format of the data messages based on standards enabling their automatic processing (EDI, EDIFACT, XML, cXML, etc.). That means the EDI is always implemented without any manual typing, retyping, or copying of the messages.

- **Electronic commerce, e-commerce (purchase or sale)** shall mean placing or accepting electronic orders via the Internet or other computer networks regardless of the method of payment or delivery. *Note: Purchases (sales) implemented on the basis of orders prepared from information obtained on the Internet but placed in a traditional way (by phone, fax, or a written order) or by e-mail are not included.*
Electronic orders are made through websites (Web e-commerce) or initiated by using the electronic data interchange (EDI e-commerce).
- **Web e-Commerce** are purchases or sales made via an online store (web shop), via web forms on a website or extranet, or “apps” regardless of how the web is accessed (computer, laptop, etc.)
- **EDI e-Commerce** are orders initiated with EDI-type messages - see definition of the electronic data interchange. *Note: “EDI e-Commerce” is limited to EDI messages placing an order.*
- An **extranet** shall mean a closed enterprise network used for secured information sharing. It usually has a form of a special web page or extension to the intranet and serves for communication with suppliers, sellers, partners, customers, and other enterprises, which are located out of the enterprise headquarters. Access to the extranet is allowed after logging in.
- An **ICT specialist** refers in the survey to an employee whose main job is to design, write, test, or develop software and applications. It includes also employees whose core activity is to install, operate, control, or maintain firm's ICT systems or to enable to use information and communication technologies to other persons (technical assistance to ICT users).
- An **internal computer network (LAN)** shall mean a local enterprise network connecting at least two computers or other IT devices and, most frequently, serving for data transmission and sharing (files, internal emails, for instance) and, furthermore, for communication or sharing the connection to the Internet within the enterprise. End devices can be connected to the enterprise computer network also by a wireless technology (WLAN).
- An **intranet** shall mean internal web pages and their applications revealing their contents and services exclusively to authorised users within the enterprise, as employees, management, etc.
- The **RFID** (radio frequency identification) refers to a next generation of contactless object identifiers, following the barcodes. The RFID technology is based on storing required data into RFID chips, content of which can be remotely read by RFID readers.
- An **industrial robot** shall mean an automatically controlled, re-programmable, multipurpose manipulator for action in three or more axes, which can either be fixed in place or mobile for use in industrial automation applications (e.g. object manipulation, robotic welding, spray painting, pressing, laser cutting, etc.).
- **Social media** shall mean on-line communication tools enabling the enterprises to create their own user profiles by means of which they can communicate with other users and share information or multimedia content with them. *Note: The most famous and most used type of social media is online **social networks** (e.g. Facebook or LinkedIn), furthermore, these are **enterprise blogs or microblogs** (e.g. Twitter). Other type of social media is **multimedia content sharing websites** (e.g. YouTube, Instagram) and also **Wiki based knowledge-sharing tools**.*
- An **enterprise website** shall mean a web page(s) presenting the enterprise on the Internet. The enterprise is expected to have control over the contents - it may be changed or modified by authorised persons only. Information on only enterprises' contacts published in Internet databases or catalogues of enterprises are excluded.

Data for **international comparisons** are taken from the Eurostat database for digital economy and society. Detailed information can be found at: <https://ec.europa.eu/eurostat/web/digital-economy-and-society/overview> and https://ec.europa.eu/eurostat/cache/metadata/en/isoc_e_esms.htm.

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Tab. D1 Enterprises in Czechia using computer networks; 2018

	Percentage		
	LAN	Intranet	Extranet
Total (10+ employees)	77,2	32,3	14,4
Small enterprises (10-49)	72,8	26,4	10,6
Medium enterprises (50-249)	91,6	47,9	24,7
Large enterprises (250+)	98,8	80,2	43,9
Industry (NACE category)			
Manufacturing	79,6	32,8	12,4
Electricity, gas and water supply	80,3	37,9	23,9
Construction	70,2	28,5	5,7
Sale and repair of motor vehicles	87,1	32,9	23,3
Wholesale trade	88,2	36,7	19,1
Retail trade	65,5	26,7	10,3
Transport and storage	67,8	23,0	9,7
Accommodation	80,3	28,3	20,8
Food and beverage service activities	56,2	16,4	4,5
Travel agency and related activities	92,1	37,9	29,0
Media industries incl. publishing activities	98,2	62,3	37,3
Telecommunications	96,5	68,2	43,6
Computer programming and related activities	97,0	74,7	49,4
Real estate activities	86,3	29,5	16,4
Professional, scientific and technical activities	88,6	40,4	20,9
Administrative and support service activities	62,6	25,1	11,2

as a percentage of all enterprises in a given group

Figure D1 Enterprises using computer networks; 2018

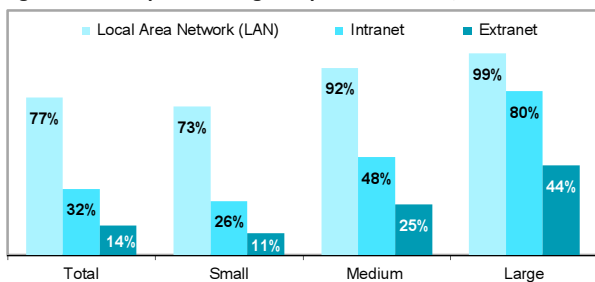
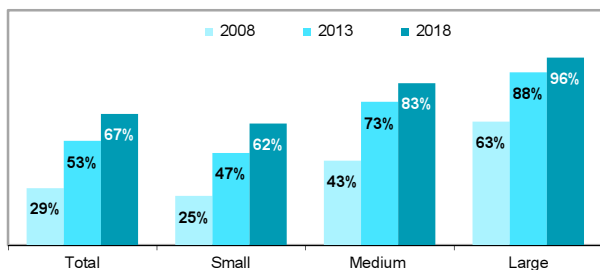


Figure D2 Enterprises with wireless Local Area Network



as a percentage of all enterprises in a given size class

Source: Czech Statistical Office, Survey on the ICT Use in Enterprises, 2019

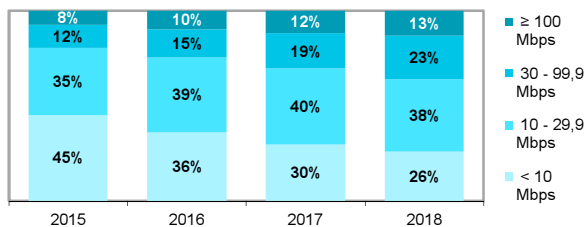
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Tab. D2 Enterprises in Czechia with the Internet; 2018

	Percentage		
	Total	connection speed*	
		at least 30 Mbps	at least 100 Mbps
Total (10+ employees)	97,9	35,4	13,2
Small enterprises (10-49)	97,6	30,2	10,6
Medium enterprises (50-249)	98,7	50,6	19,1
Large enterprises (250+)	99,8	69,6	37,6
Industry (NACE category)			
Manufacturing	98,6	29,8	10,1
Electricity, gas and water supply	98,2	50,5	18,0
Construction	97,5	32,3	7,7
Sale and repair of motor vehicles	98,8	32,7	9,0
Wholesale trade	98,5	39,8	16,0
Retail trade	97,5	25,6	8,1
Transport and storage	97,0	31,1	9,4
Accommodation	98,3	50,8	22,4
Food and beverage service activities	97,0	19,8	5,4
Travel agency and related activities	99,1	38,9	19,9
Media industries incl. publishing activities	100,0	61,2	38,8
Telecommunications	99,3	87,8	72,7
Computer programming and related activities	100,0	70,0	36,3
Real estate activities	99,5	43,3	16,3
Professional, scientific and technical activities	98,4	52,6	23,8
Administrative and support service activities	92,4	34,7	15,8

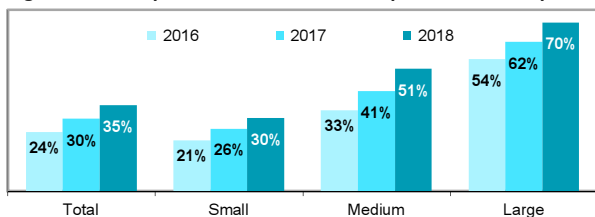
as a percentage of all enterprises in a given group

Figure D3 Internet connection speed* used by enterprises



as a percentage of all enterprises with 10+ employees with the Internet

Figure D4 Enterprises with at least 30 Mbps connection speed*



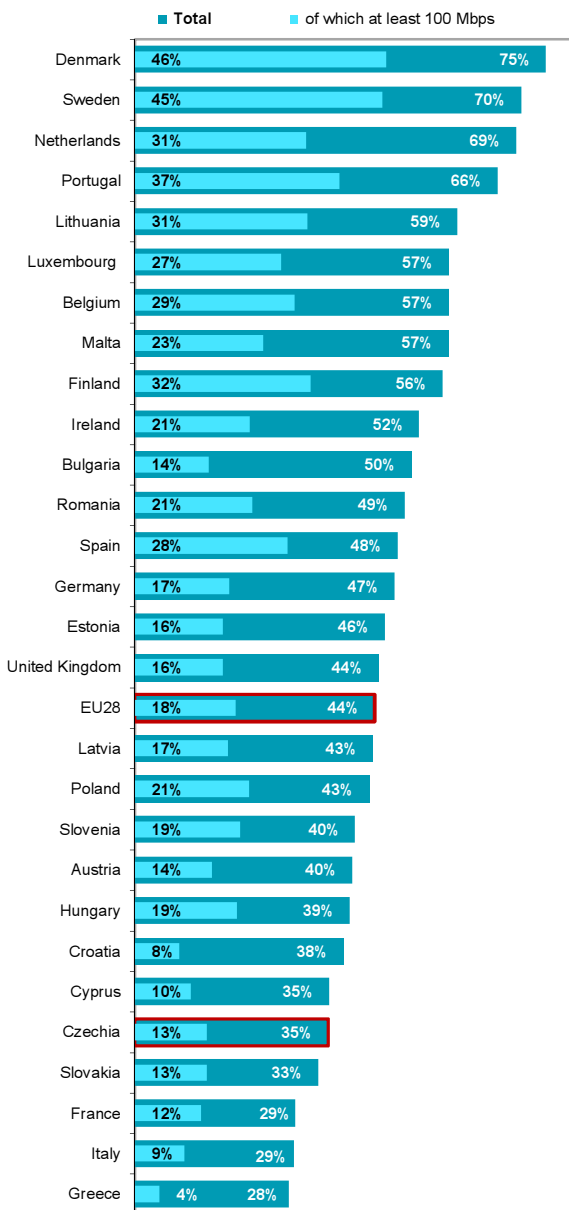
as a percentage of all enterprises in a given size class

* maximum contracted download speed of the fastest fixed Internet connection

Source: Czech Statistical Office, Survey on the ICT Use in Enterprises, 2019

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Figure D5 Enterprises in EU countries with Internet connection speed at least 30 Mbps; 2018



as a percentage of all enterprises with 10+ employees in a given country

Source: Eurostat, 2019

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Tab. D3 Enterprises in Czechia using selected types of fixed broadband Internet connection; 2018

	Percentage		
	xDSL	Fibre (FTTx)	Leased line
Total (10+ employees)	54,3	22,9	21,2
Small enterprises (10-49)	54,4	18,3	16,9
Medium enterprises (50-249)	51,4	35,4	31,5
Large enterprises (250+)	64,5	57,5	59,6
Industry (NACE category)			
Manufacturing	53,4	18,9	20,7
Electricity, gas and water supply	59,3	35,0	24,1
Construction	44,4	17,2	12,3
Sale and repair of motor vehicles	55,7	29,2	26,2
Wholesale trade	55,3	25,6	28,4
Retail trade	77,6	17,4	15,9
Transport and storage	50,3	17,0	19,0
Accommodation	59,4	25,8	20,0
Food and beverage service activities	59,3	11,2	13,2
Travel agency and related activities	68,8	29,5	30,5
Media industries incl. publishing activities	53,3	42,6	32,6
Telecommunications	30,5	75,3	49,8
Computer programming and related activities	49,1	47,3	38,2
Real estate activities	53,8	32,5	19,1
Professional, scientific and technical activities	51,5	38,5	28,6
Administrative and support service activities	51,1	23,2	19,5

as a percentage of all enterprises in a given group

Figure D6 Enterprises using xDSL Internet connection

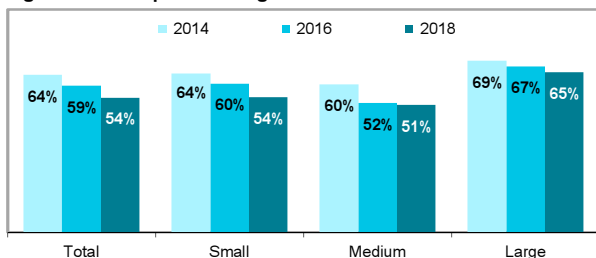
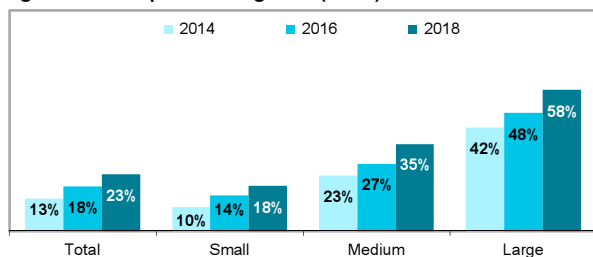


Figure D7 Enterprises using fibre (FTTx) Internet connection

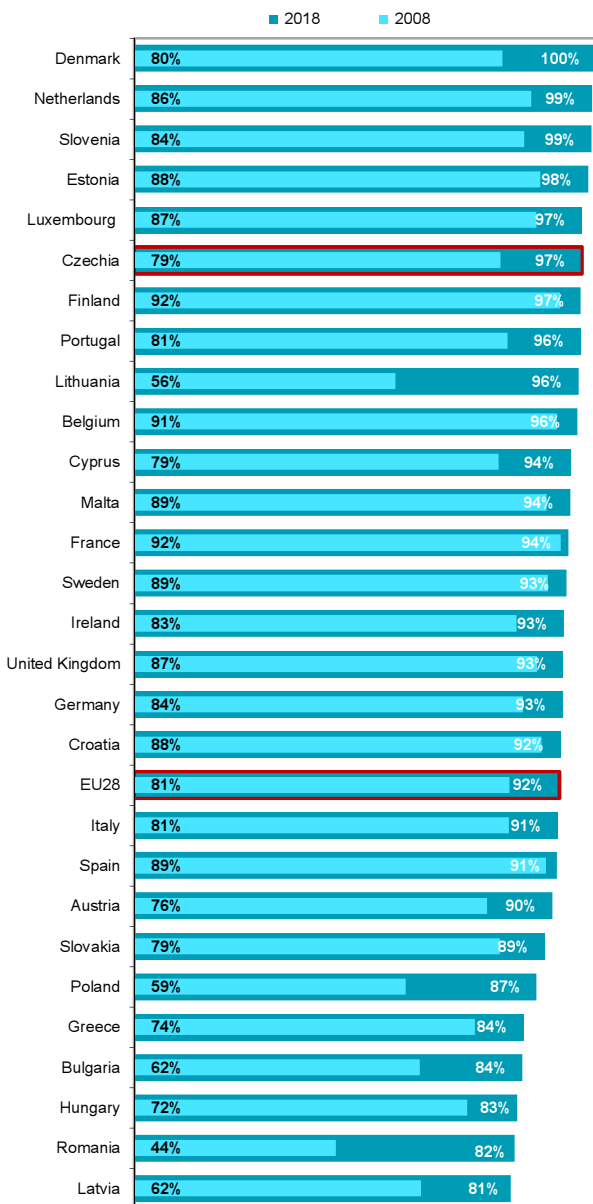


as a percentage of all enterprises in a given size class

Source: Czech Statistical Office, Survey on the ICT Use in Enterprises, 2019

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Figure D8 Enterprises in EU countries with a fixed broadband Internet connection



as a percentage of all enterprises with 10+ employees in a given country

Source: Eurostat, 2019

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Tab. D4 Enterprises in Czechia with a website; 2018

	Percentage	
	Total	of which customized for mobiles
Total (10+ employees)	82,8	47,5
Small enterprises (10-49)	80,3	44,6
Medium enterprises (50-249)	91,3	56,7
Large enterprises (250+)	93,7	64,2
Industry (NACE category)		
Manufacturing	84,4	44,6
Electricity, gas and water supply	86,3	43,6
Construction	82,9	38,4
Sale and repair of motor vehicles	92,6	68,1
Wholesale trade	88,4	50,1
Retail trade	63,5	41,8
Transport and storage	68,3	37,3
Accommodation	95,0	68,8
Food and beverage service activities	83,8	56,1
Travel agency and related activities	95,9	71,6
Media industries incl. publishing activities	98,8	70,9
Telecommunications	95,1	68,6
Computer programming and related activities	96,2	74,0
Real estate activities	85,6	45,4
Professional, scientific and technical activities	88,0	51,3
Administrative and support service activities	76,0	48,8

as a percentage of all enterprises in a given group

Figure D9 Enterprises with a website

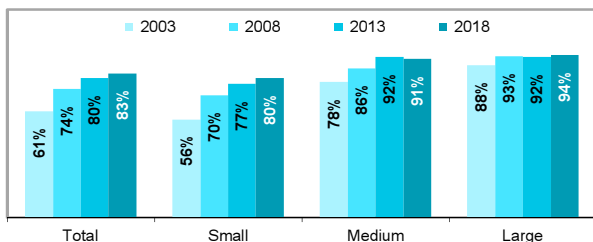
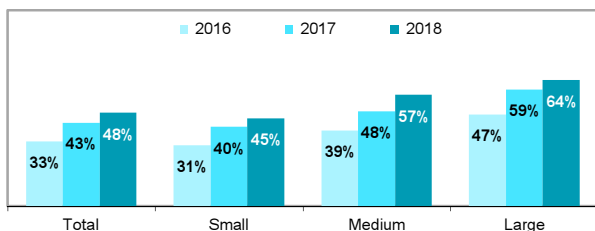


Figure D10 Enterprises with a website customized for mobiles

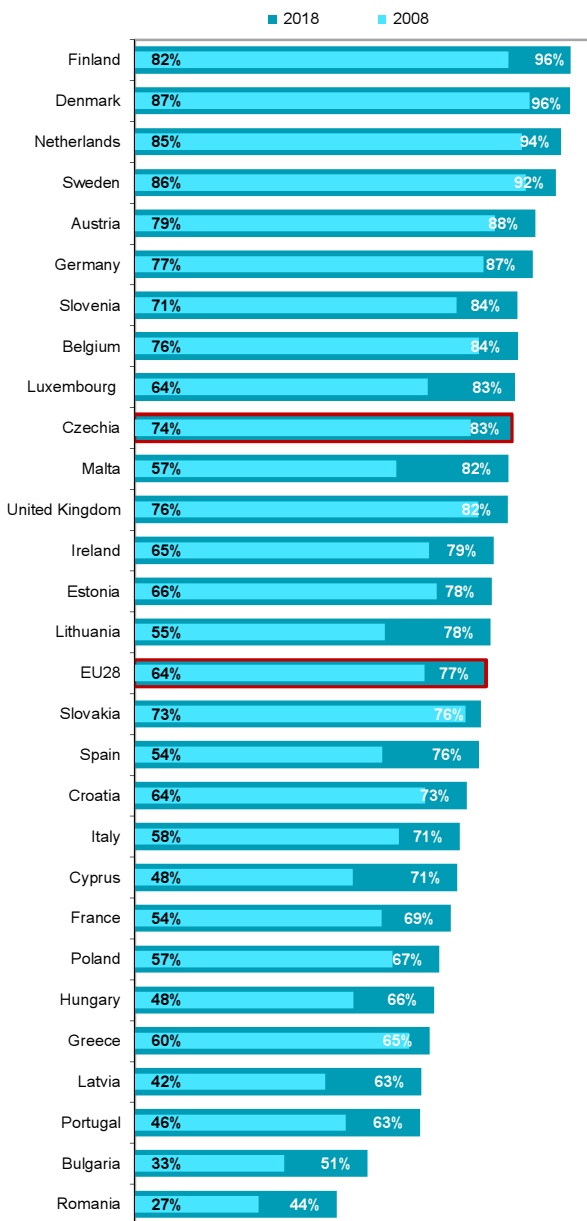


as a percentage of all enterprises in a given size class

Source: Czech Statistical Office, Survey on the ICT Use in Enterprises, 2019

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Figure D11 Enterprises in EU countries with a website



as a percentage of all enterprises with 10+ employees in a given country

Source: Eurostat, 2019

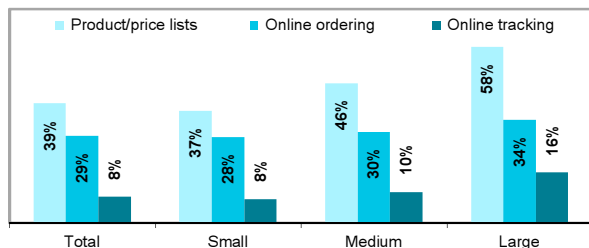
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Tab. D5 Enterprises in Czechia with website facilities; 2018

	Percentage		
	Product/ price lists	Online ordering	Online tracking
Total (10+ employees)	39,1	28,5	8,4
Small enterprises (10-49)	36,7	28,0	7,7
Medium enterprises (50-249)	45,7	29,8	10,0
Large enterprises (250+)	57,7	33,6	16,4
Industry (NACE category)			
Manufacturing	39,3	21,4	4,8
Electricity, gas and water supply	35,0	26,9	2,4
Construction	19,7	16,3	1,0
Sale and repair of motor vehicles	67,1	56,1	11,1
Wholesale trade	54,9	42,4	17,6
Retail trade	39,6	34,5	21,1
Transport and storage	21,3	21,5	9,4
Accommodation	76,3	82,8	21,3
Food and beverage service activities	51,7	43,4	7,5
Travel agency and related activities	82,8	78,2	23,7
Media industries incl. publishing activities	78,1	67,1	24,9
Telecommunications	80,5	61,8	13,4
Computer programming and related activities	40,0	32,0	12,0
Real estate activities	37,6	18,9	3,7
Professional, scientific and technical activities	30,5	19,2	5,6
Administrative and support service activities	33,1	26,1	6,8

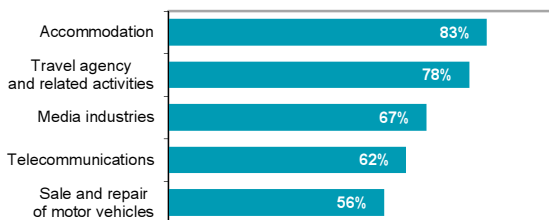
as a percentage of all enterprises in a given group

Figure D12 Enterprises with selected website facilities; 2018



as a percentage of all enterprises in a given size class

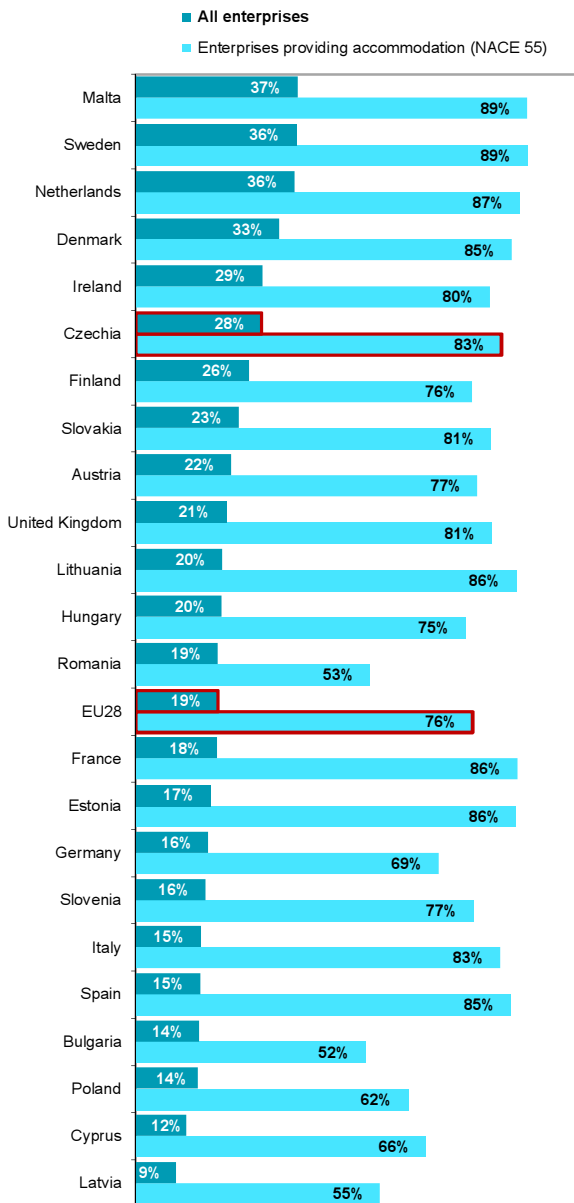
Figure D13 Top 5 industries with the highest share of enterprises with a website enabling online ordering; 2018



as a percentage of all enterprises with 10+ employees in a given industry

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Figure D14 Enterprises in EU countries with a website enabling online ordering; 2018



as a percentage of all (or in a given industry) enterprises with 10+ employees

Source: Eurostat, 2019

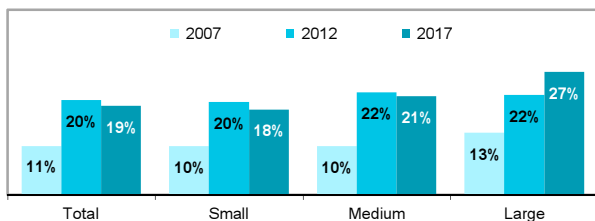
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Tab. D6 Enterprises in Czechia selling via websites; 2017

	Percentage	
	Total	with web sales making over 10% of total turnover
Total (10+ employees)	19,2	12,1
Small enterprises (10-49)	18,4	12,0
Medium enterprises (50-249)	21,3	11,8
Large enterprises (250+)	26,5	14,6
Industry (NACE category):		
Manufacturing	14,5	7,8
Electricity, gas and water supply	4,3	1,4
Construction	4,2	2,3
Sale and repair of motor vehicles	35,5	22,2
Wholesale trade	39,2	24,8
Retail trade	32,2	19,9
Transport and storage	11,1	7,1
Accommodation	63,0	51,1
Food and beverage service activities	18,0	12,1
Travel agency and related activities	65,9	60,4
Media industries incl. publishing activities	56,8	38,1
Telecommunications	46,4	29,8
Computer programming and related activities	25,4	18,6
Real estate activities	13,1	9,6
Professional, scientific and technical activities	11,3	7,2
Administrative and support service activities	15,6	12,2

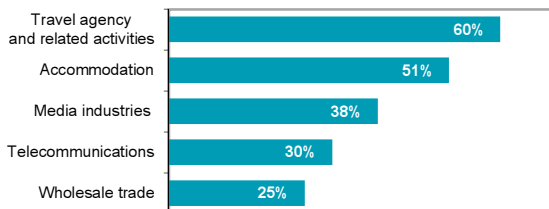
as a percentage of all enterprises in a given group

Figure D15 Enterprises selling via websites or apps



as a percentage of all enterprises in a given size class

Figure D16 Top 5 industries with the highest share of firms with web sales higher than 10% of their total turnover; 2017

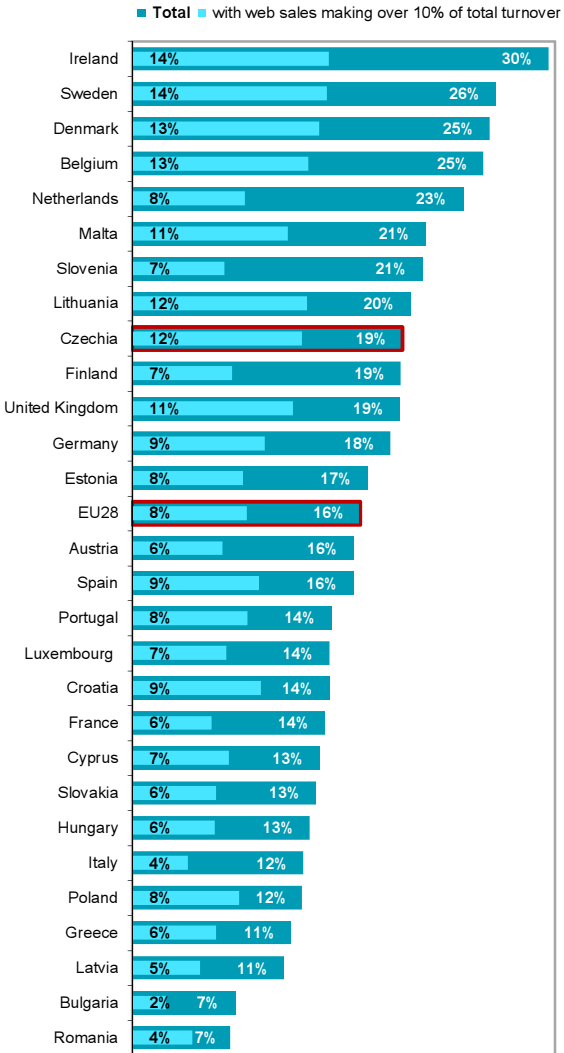


as a percentage of all enterprises with 10+ employees in a given industry

Source: Czech Statistical Office, Survey on the ICT Use in Enterprises, 2019

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Figure D17 Enterprises in EU countries selling via a websites or apps; 2017



* Includes any enterprise that during the reference year received at least one electronic order placed by their customers both via enterprises's websites or 'apps' such as online store (webshop), web form, booking/reservation application for services or apps for mobile devices or via an e-commerce marketplace websites or 'apps' used by several enterprises for trading products.

as a percentage of all enterprises with 10+ employees in a given country

Source: Eurostat, 2019

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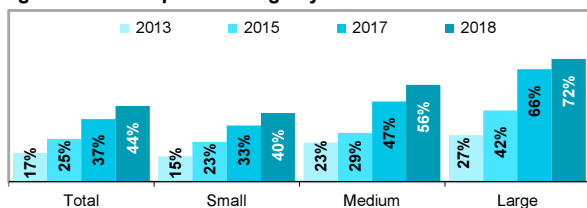
Tab. D7 Enterprises in Czechia using online social media; 2018

	Percentage		
	Total*	of which:	
		Social networks	other social media
Total (10+ employees)	44,2	42,3	19,9
Small enterprises (10-49)	40,0	38,4	16,4
Medium enterprises (50-249)	56,4	54,0	29,0
Large enterprises (250+)	71,7	68,4	47,6
Industry (NACE category)			
Manufacturing	39,6	36,9	16,0
Electricity, gas and water supply	29,1	26,8	14,9
Construction	26,1	23,9	9,0
Sale and repair of motor vehicles	62,2	61,7	23,7
Wholesale trade	49,4	48,0	23,2
Retail trade	46,9	46,6	26,9
Transport and storage	33,0	31,6	10,6
Accommodation	78,6	77,3	32,9
Food and beverage service activities	64,2	63,8	22,8
Travel agency and related activities	82,3	80,8	44,6
Media industries incl. publishing activities	84,5	82,8	60,1
Telecommunications	74,1	69,9	42,3
Computer programming and related activ.	74,8	68,6	55,5
Real estate activities	30,0	29,0	13,8
Professional, scientific and technical activ.	52,3	50,9	28,2
Administrative and support service activ.	41,3	40,3	17,0

as a percentage of all enterprises in a given group

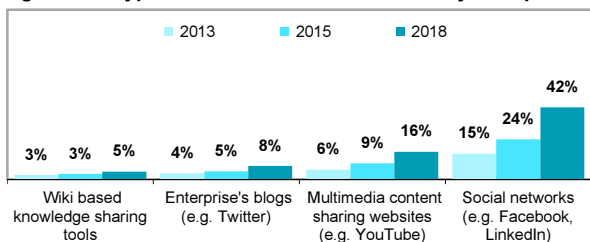
* It includes firms that used their profile, account or licence on at least one type of social media (e.g. social networks, blogs, content-sharing sites or wikis).

Figure D18 Enterprises using any online social media



as a percentage of all enterprises in a given size class

Figure D19 Types of online social media used by enterprises

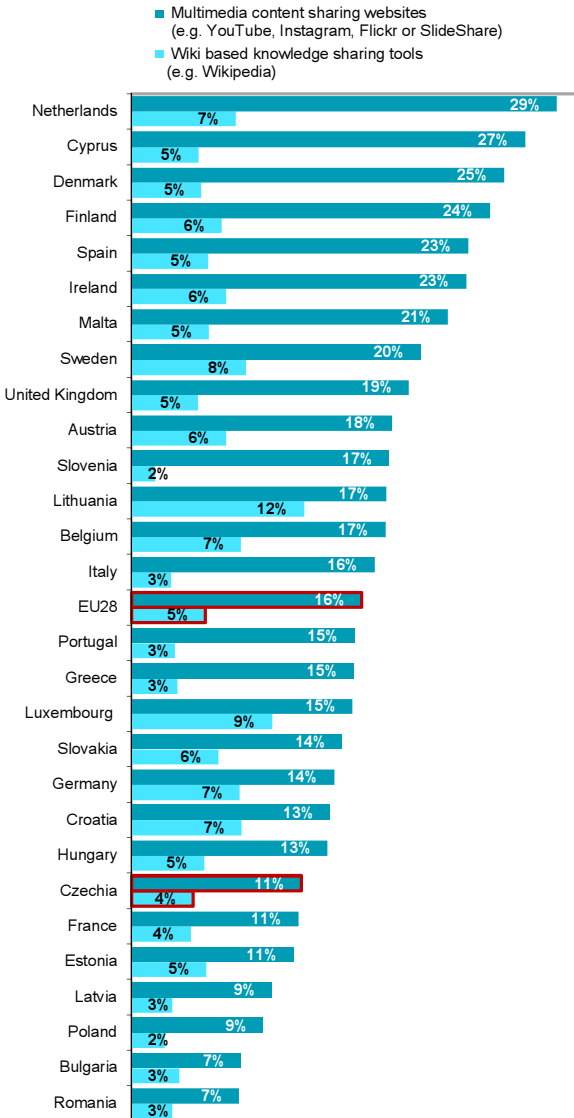


as a percentage of all enterprises with 10+ employees in a given year

Source: Czech Statistical Office, Survey on the ICT Use in Enterprises, 2019

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Figure D20 Enterprises in EU countries using selected types of online social media; 2017



Note: Enterprises using social media are those that have a user profile, an account, or a user licence depending on the requirements and the type of the online social media.

as a percentage of all enterprises with 10+ employees in a given country

Source: Eurostat, 2019

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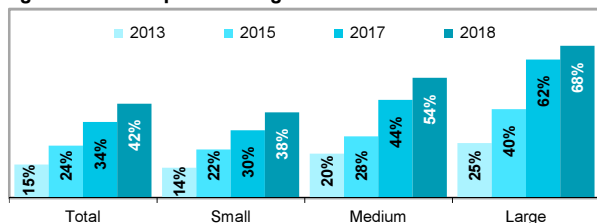
Tab. D8 Enterprises in Czechia using online social networks*

	Percentage		
	2016	2017	2018
Total (10+ employees)	30,3	34,1	42,3
Small enterprises (10-49)	27,7	30,4	38,4
Medium enterprises (50-249)	37,5	44,1	54,0
Large enterprises (250+)	53,2	62,3	68,4
Industry (NACE category)			
Manufacturing	22,8	26,5	36,9
Electricity, gas and water supply	16,0	22,5	26,8
Construction	17,3	17,8	23,9
Sale and repair of motor vehicles	51,7	51,1	61,7
Wholesale trade	35,3	43,2	48,0
Retail trade	37,0	45,1	46,6
Transport and storage	20,6	23,9	31,6
Accommodation	78,2	78,5	77,3
Food and beverage service activities	48,6	52,3	63,8
Travel agency and related activities	78,4	84,2	80,8
Media industries incl. publishing activities	75,8	78,9	82,8
Telecommunications	67,8	69,4	69,9
Computer programming and related activities	55,3	62,1	68,6
Real estate activities	25,9	22,3	29,0
Professional, scientific and technical activities	35,0	37,7	50,9
Administrative and support service activities	27,6	28,5	40,3

as a percentage of all enterprises in a given group

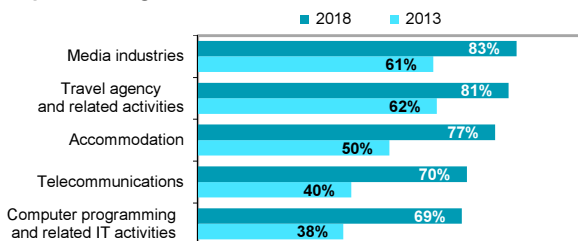
* Firms with a user profile on social networks such as Facebook or LinkedIn.

Figure D21 Enterprises using online social networks



as a percentage of all enterprises in a given size class

Figure D22 Top 5 industries with the highest share of enterprises using online social networks

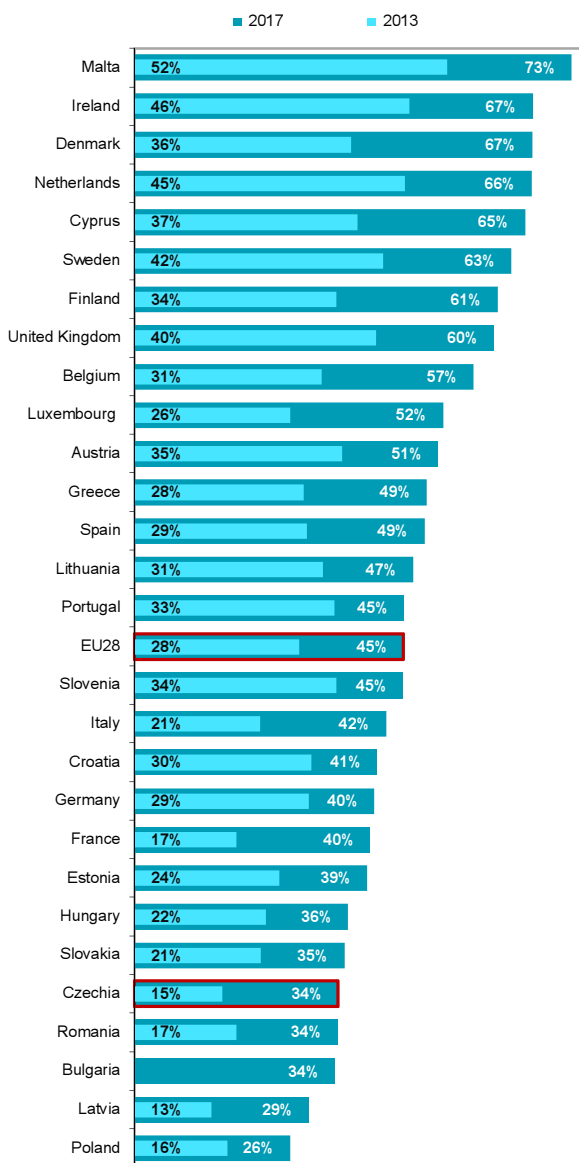


as a percentage of all enterprises with 10+ employees in a given industry

Source: Czech Statistical Office, Survey on the ICT Use in Enterprises, 2019

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Figure D23 Enterprises in EU countries using online social networks



Note: Enterprises using online social networks are those that have an active user profile on websites such as Facebook or LinkedIn.

as a percentage of all enterprises with 10+ employees in a given country

Source: Eurostat, 2019

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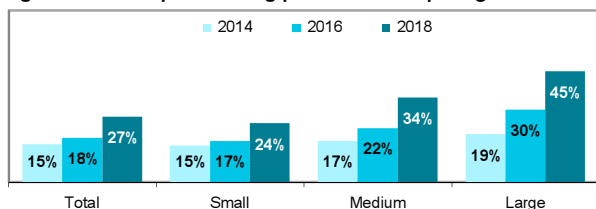
Tab. D9 Enterprises in Czechia using paid cloud computing

Percentage

	2016	2017	2018
Total (10+ employees)	18,0	22,0	26,5
Small enterprises (10-49)	16,6	20,0	23,8
Medium enterprises (50-249)	21,9	27,5	34,3
Large enterprises (250+)	29,5	38,7	44,9
Industry (NACE category)			
Manufacturing	14,7	19,1	23,4
Electricity, gas and water supply	13,5	24,6	23,2
Construction	16,9	17,0	21,0
Sale and repair of motor vehicles	18,3	22,9	19,9
Wholesale trade	25,6	28,4	29,4
Retail trade	15,9	23,1	26,2
Transport and storage	13,6	12,6	20,5
Accommodation	13,9	24,3	26,7
Food and beverage service activities	9,1	9,6	18,2
Travel agency and related activities	34,2	33,6	41,0
Media industries incl. publishing activities	34,1	44,0	45,7
Telecommunications	24,5	30,4	31,1
Computer programming and related activities	45,4	56,4	60,1
Real estate activities	17,0	18,3	24,0
Professional, scientific and technical activities	23,8	30,9	44,4
Administrative and support service activities	19,6	24,4	26,1

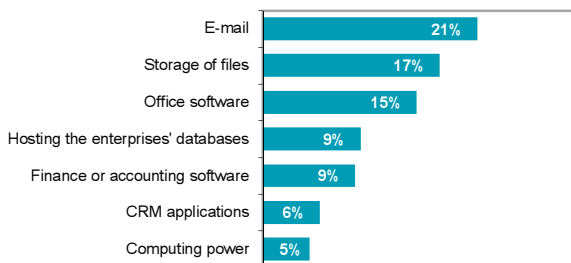
as a percentage of all enterprises in a given group

Figure D24 Enterprises using paid cloud computing services



as a percentage of all enterprises in a given size class

Figure D25 Enterprises using selected paid cloud computing services; 2018

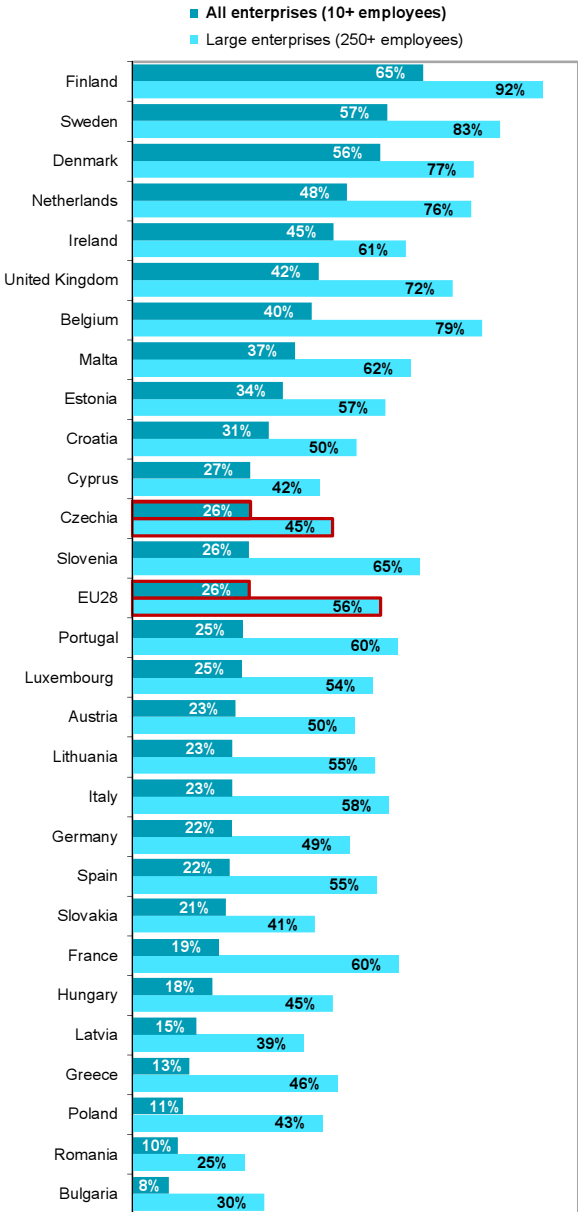


as a percentage of all enterprises with 10+ employees

Source: Czech Statistical Office, Survey on the ICT Use in Enterprises, 2019

D Enterprises and ICT

Figure D26 Enterprises in EU countries using paid cloud computing services; 2018



as a percentage of all enterprises in a given size group and country

Source: Eurostat, 2019

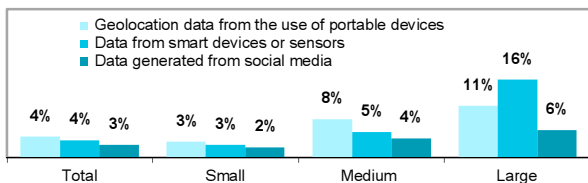
D Enterprises and ICT

Tab. D10 Enterprises in Czechia performing Big Data analysis; 2017

	Percentage		
	Total	of which based on the following data sources:	
		geolocation data	data from social media
Total (10+ employees)	8,1	4,4	2,6
Small enterprises (10-49)	6,2	3,3	2,1
Medium enterprises (50-249)	12,6	7,8	4,0
Large enterprises (250+)	24,2	10,6	5,6
Industry (NACE category)			
Manufacturing	6,4	3,4	1,0
Electricity, gas and water supply	6,4	3,5	1,3
Construction	6,0	5,0	0,3
Sale and repair of motor vehicles	8,2	3,9	3,8
Wholesale trade	10,3	5,6	4,2
Retail trade	4,9	1,3	2,3
Transport and storage	13,5	12,9	0,4
Accommodation	6,3	1,1	5,2
Food and beverage service activities	7,7	3,5	6,2
Travel agency and related activities	7,0	1,5	4,7
Media industries incl. publishing act.	17,3	5,9	10,6
Telecommunications	18,4	8,4	4,3
Computer programming and related act.	19,9	8,2	8,3
Real estate activities	3,6	2,1	1,6
Professional, scientific and technical act.	9,5	2,5	5,0
Administrative and support service activ.	7,9	3,3	3,6

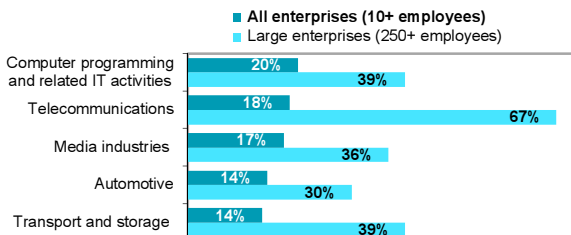
as a percentage of all enterprises in a given group

Figure D27 Data sources used by enterprises for performing Big Data analysis; 2017



as a percentage of all enterprises in a given size class

Figure D28 Top 5 industries with the highest share of enterprises performing Big Data analysis; 2017

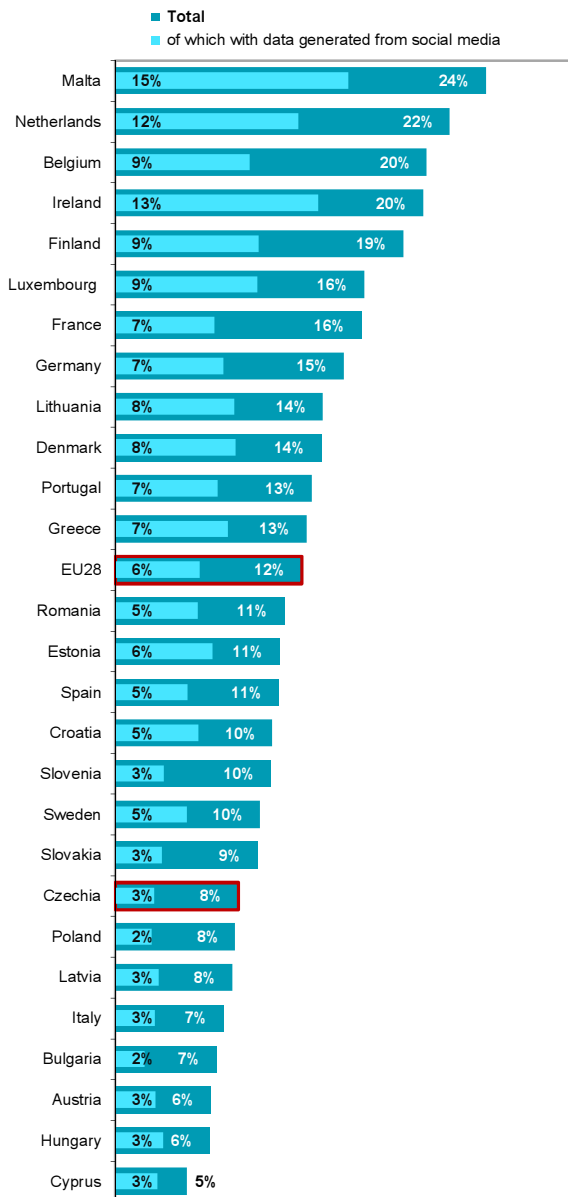


as a percentage of all enterprises in a given size and industry group

Source: Czech Statistical Office, Survey on the ICT Use in Enterprises, 2019

D Enterprises and ICT

Figure D29 Enterprises in EU countries performing Big Data analysis; 2017



as a percentage of all enterprises with 10+ employees in a given country

Source: Eurostat, 2019

D Enterprises and ICT

Tab. D11 Enterprises in Czechia using RFID technology; 2017

Percentage

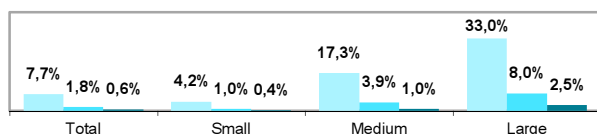
	Total	for purpose of RFID use:	
		person identification or access control	production monitoring and control, SCM*
Total (10+ employees)	8,6	7,7	1,8
Small enterprises (10-49)	5,0	4,2	1,0
Medium enterprises (50-249)	18,4	17,3	3,9
Large enterprises (250+)	35,4	33,0	8,0
Industry (NACE category)			
Manufacturing	10,9	10,4	2,0
Electricity, gas and water supply	8,1	7,2	3,2
Construction	3,7	3,7	1,1
Sale and repair of motor vehicles	7,2	5,9	2,2
Wholesale trade	9,1	7,8	1,9
Retail trade	5,6	2,9	1,3
Transport and storage	7,2	4,8	3,3
Accommodation	9,9	8,5	0,9
Food and beverage service activities	4,0	1,9	1,4
Travel agency and related activities	3,3	3,3	0,0
Media industries incl. publishing activities	8,2	8,2	0,4
Telecommunications	23,6	23,0	1,2
Computer programming and related activ.	15,1	14,1	0,8
Real estate activities	4,7	4,7	0,6
Professional, scientific and technical act.	10,7	10,6	1,0
Administrative and support service activ.	9,1	8,8	2,7

as a percentage of all enterprises in a given group

* SCM = supply chain management

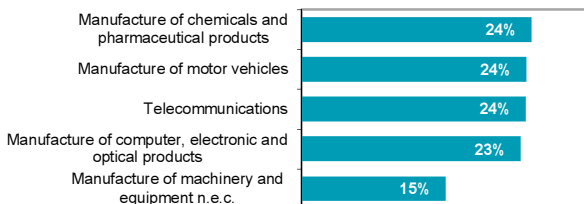
Figure D30 Purposes of RFID technology usage; 2017

- Person identification or access control
- Monitoring and control of industrial production and service delivery
- Product identification after the production process



as a percentage of all enterprises in a given size class

Figure D31 Top 5 industries with the highest share of enterprises using RFID technology; 2017

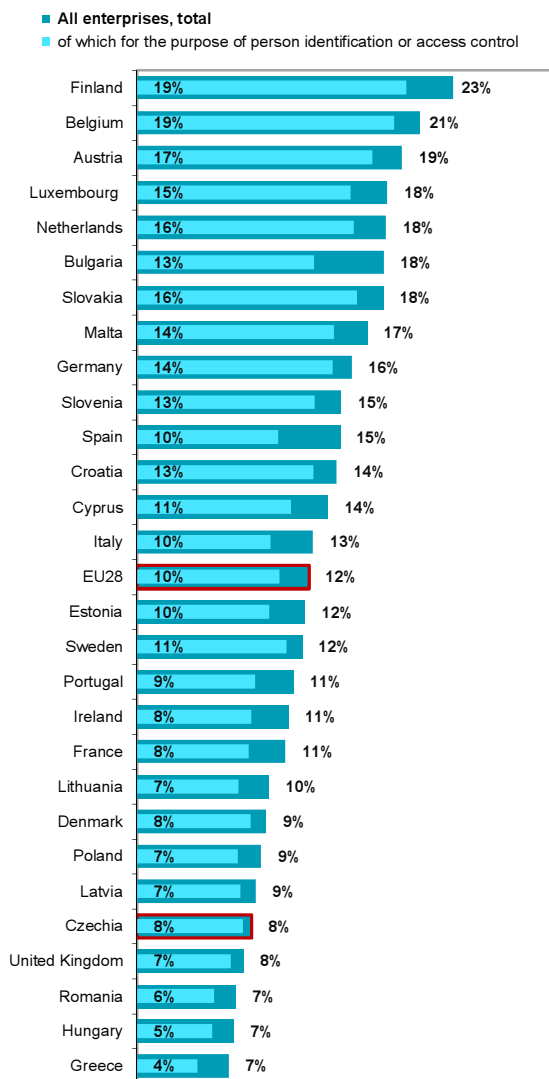


as a percentage of all enterprises with 10+ employees in a given industry

Source: Czech Statistical Office, Survey on the ICT Use in Enterprises, 2019

D Enterprises and ICT

Figure D32 Enterprises in EU countries that used Radio Frequency Identification (RFID) technology; 2017



The use of Radio Frequency identification technologies (RFID):

- refers to an automated identification method to store and remotely retrieve data using RFID tags or transponders,

- includes the use of Near Field Communication (NFC) connectivity standard as a percentage of all enterprises with 10+ employees in a given country

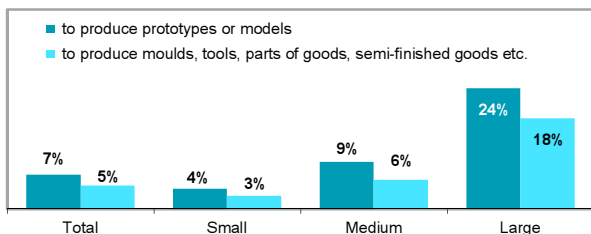
D Enterprises and ICT

Tab. D12 Enterprises in Manufacturing in Czechia using industrial robots or 3D printing

	Percentage	
	Industrial robots (2018)	3D printing (2017)
Manufacturing, total (10+ employees)	15,6	7,6
Small enterprises (10-49)	6,0	4,5
Medium enterprises (50-249)	30,5	10,5
Large enterprises (250+)	52,8	27,0
Manufacture of (NACE category)		
food or beverages	7,3	1,3
wood and manufacture of paper	8,1	3,4
chemicals & pharmaceutical products	10,8	3,6
rubber and plastic products	30,9	11,1
other non-metallic mineral products	12,2	7,8
basic metals	32,2	6,3
fabricated metal products	20,2	5,6
computer, electronic & optical products	11,7	25,6
electrical equipment	18,5	16,6
machinery and equipment n.e.c.	15,6	11,3
motor vehicles	43,3	21,6
other transport equipment	19,4	14,6

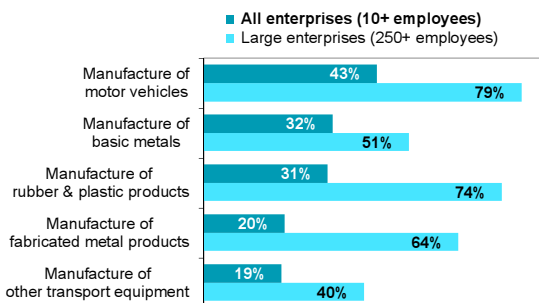
as a percentage of all enterprises in a given group

Figure D33 Purposes of 3D printing use in Manufacturing; 2017



as a percentage of all enterprises in a given size class

Figure D34 Top 5 industries in Manufacturing with the highest share of enterprises using industrial robots; 2018

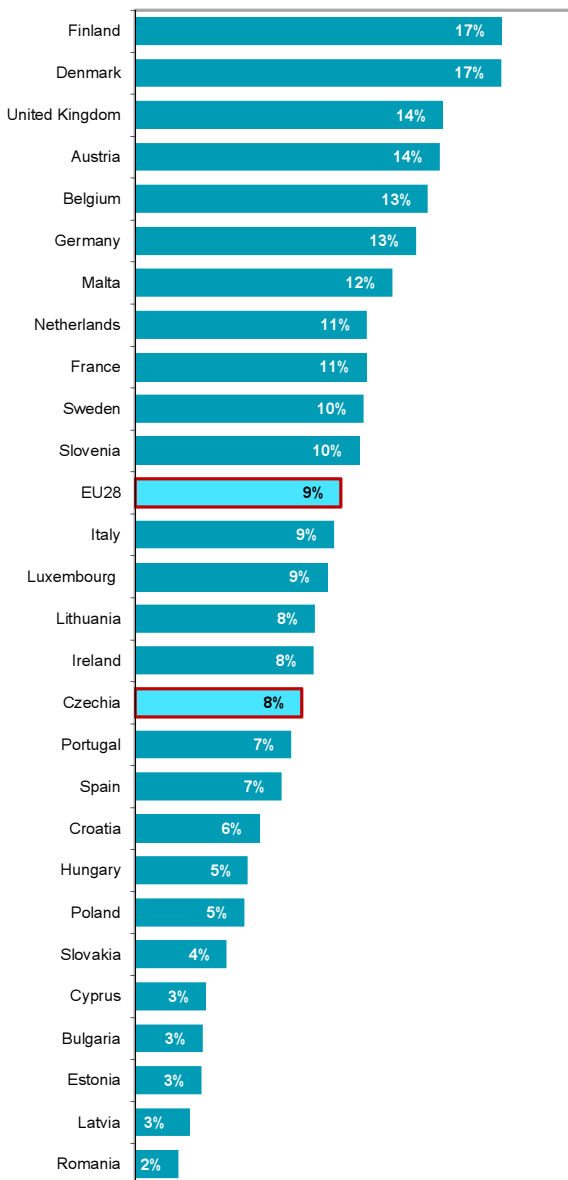


as a percentage of all enterprises in a given size class and NACE category

Source: Czech Statistical Office, Survey on the ICT Use in Enterprises, 2019

D Enterprises and ICT

Figure D35 Enterprises in Manufacturing in EU countries using 3D printing; 2017



as a percentage of all enterprises with 10+ employees in Manufacturing (NACE section C) in a given country

D Enterprises and ICT

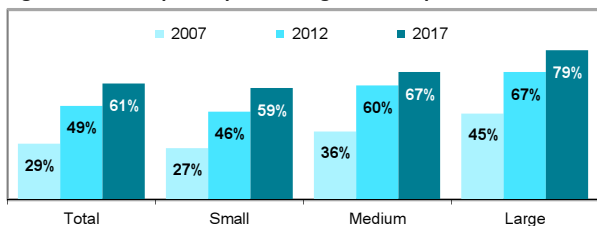
Tab. D13 Value of enterprises' e-purchases in Czechia; 2017

	Percentage		
	Total	EDI purchases*	Web purchases
Total (10+ employees)	39,3	21,0	18,4
Small enterprises (10-49)	25,9	8,3	17,6
Medium enterprises (50-249)	29,5	11,9	17,6
Large enterprises (250+)	48,3	29,4	19,0
Industry (NACE category)			
Manufacturing	41,6	22,5	19,1
Electricity, gas and water supply	45,4	31,3	14,1
Construction	13,0	4,7	8,3
Sale and repair of motor vehicles	57,5	32,4	25,1
Wholesale trade	33,1	13,2	19,9
Retail trade	49,6	31,9	17,7
Transport and storage	20,7	7,7	13,0
Accommodation	25,7	4,3	21,4
Food and beverage service activities	26,4	10,3	16,1
Travel agency and related activities	28,0	6,1	21,9
Media industries	38,6	10,7	27,9
Telecommunications	78,4	57,7	20,7
IT programming and related activities	52,8	13,4	39,5
Real estate activities	34,0	2,6	31,3
Professional, scientific & techn. activ.	20,0	4,7	15,3
Administrative and support service act.	26,3	5,6	20,7

as a percentage of the total purchases' value of enterprises in a given group

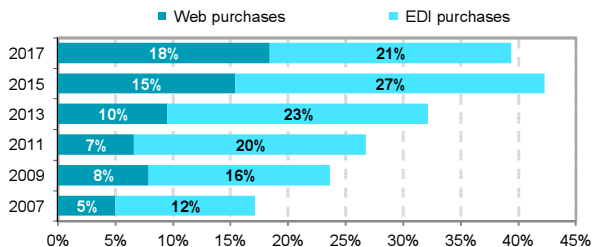
* Orders initiated with EDI (Electronic Data Interchange) type messages suitable for automated processing (e.g. EDIFACT or XML)

Figure D36 Enterprises purchasing over computer networks



as a percentage of all enterprises in a given size class

Figure D37 Value of enterprises' e-purchases

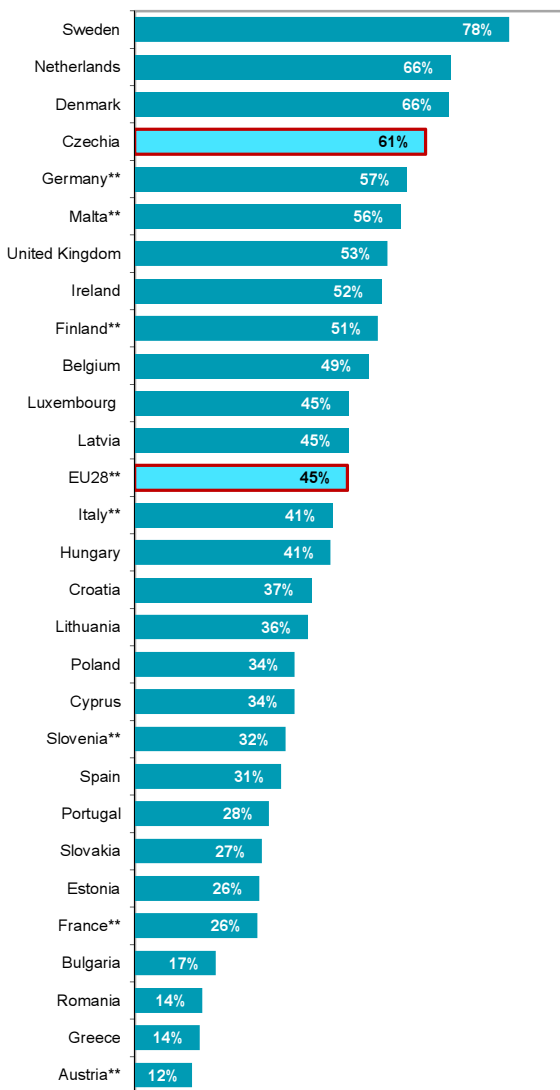


as a percentage of the total value of purchases of enterprises with 10+ empl.

Source: Czech Statistical Office, Survey on the ICT Use in Enterprises, 2019

D Enterprises and ICT

Figure D38 Enterprises in EU countries that purchased over computer networks*; 2017



* Includes any enterprises that during the reference year placed at least one electronic order over the Internet or other computer network via a website (on-line store/web form/apps) or by using EDI-type message.

** data for year 2016

as a percentage of all enterprises with 10+ employees in a given country

Source: Eurostat, 2019

D Enterprises and ICT

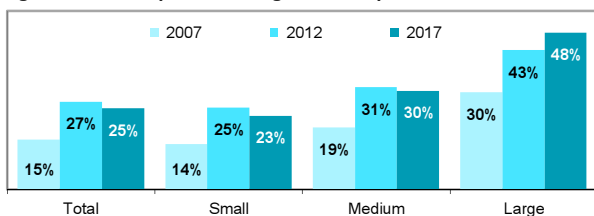
Tab. D14 Turnover from e-sales of enterprises in Czechia; 2017

	Percentage		
	Total	EDI sales*	Web sales
Total (10+ employees)	28,6	21,4	7,2
Small enterprises (10-49)	14,8	7,8	7,0
Medium enterprises (50-249)	20,8	12,8	7,9
Large enterprises (250+)	36,7	29,8	6,9
Industry (NACE category)			
Manufacturing	34,8	31,3	3,5
Electricity, gas and water supply	31,6	28,1	3,6
Construction	2,5	1,8	0,7
Sale and repair of motor vehicles	36,5	20,2	16,3
Wholesale trade	28,2	15,5	12,6
Retail trade	17,3	4,5	12,8
Transport and storage	21,8	12,2	9,6
Accommodation	33,4	7,2	26,2
Food and beverage service activities	5,5	1,5	4,1
Travel agency and related activities	47,3	8,7	38,6
Media industries incl. publishing activities	36,1	6,9	29,2
Telecommunications	27,2	12,0	15,3
Computer programming and related activit.	22,2	10,3	11,9
Real estate activities	4,7	1,3	3,4
Professional, scientific and technical activit.	4,4	2,4	2,1
Administrative and support service activities	31,9	11,9	20,0

as a percentage of total enterprises' turnover in a given group

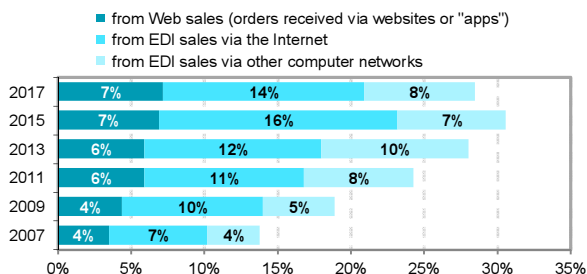
* Orders initiated with EDI (Electronic Data Interchange) type messages suitable for automated processing (e.g. EDIFACT or XML).

Figure D39 Enterprises selling over computer networks



as a percentage of all enterprises in a given size class

Figure D40 Turnover from e-sales of enterprises

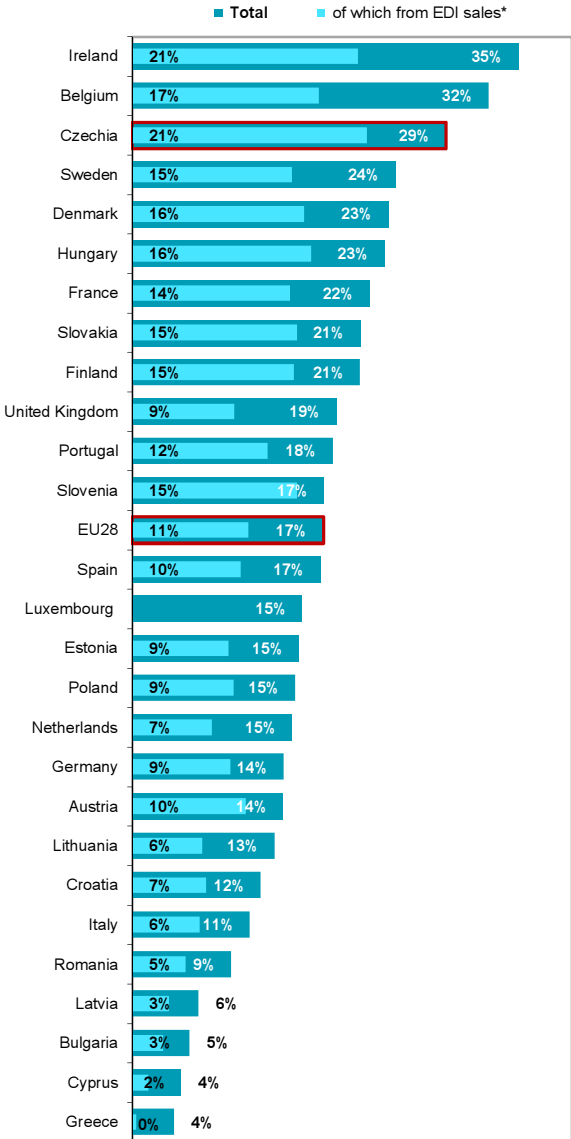


as a percentage of total enterprises' turnover in a given year

Source: Czech Statistical Office, Survey on the ICT Use in Enterprises, 2019

D Enterprises and ICT

Figure D41 Turnover from e-sales of enterprises in EU countries; 2017



* Orders initiated with EDI (Electronic Data Interchange) type messages suitable for automated processing (e.g. EDIFACT or XML).

as a percentage of total turnover of enterprises with 10+ employees

D Enterprises and ICT

Tab. D15 Enterprises in Czechia providing portable devices for mobile connection to the Internet; 2018

	Percentage		
	Total*	Mobile phones	Portable computers (incl. tablets)
Total (10+ employees)	82,7	78,6	67,5
Small enterprises (10-49)	79,5	75,0	62,0
Medium enterprises (50-249)	93,3	90,0	85,1
Large enterprises (250+)	98,8	97,0	97,4
Industry (NACE category)			
Manufacturing	82,1	77,5	68,1
Electricity, gas and water supply	85,9	82,1	67,8
Construction	86,9	86,5	66,9
Sale and repair of motor vehicles	92,0	86,1	72,8
Wholesale trade	93,8	90,6	83,0
Retail trade	66,3	58,3	51,1
Transport and storage	82,0	80,5	61,4
Accommodation	78,2	69,9	62,4
Food and beverage service activities	57,6	48,5	36,0
Travel agency and related activities	88,9	84,7	81,9
Media industries	94,6	90,4	89,8
Telecommunications	96,6	96,0	92,4
IT programming and related activities	98,1	95,3	95,6
Real estate activities	86,0	83,2	65,1
Professional, scientific & techn. activ.	90,4	86,3	78,6
Administrative and support service act.	76,7	71,9	61,5

as a percentage of all enterprises in a given group

* Enterprises providing portable devices with the connection to the Internet through mobile telephone networks for business purposes and pay for all or at least up to a limit, the subscription and the use costs.

Figure D42 Enterprises providing employees with mobile connection to the Internet by type of device; 2018

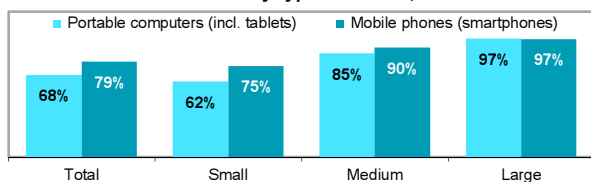
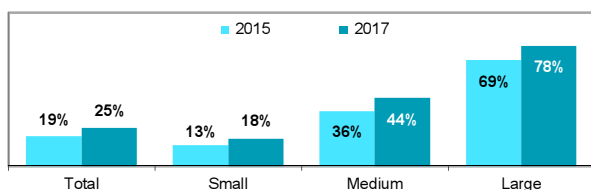


Figure D43 Enterprises which provide any type of training to develop ICT related skills of their employees

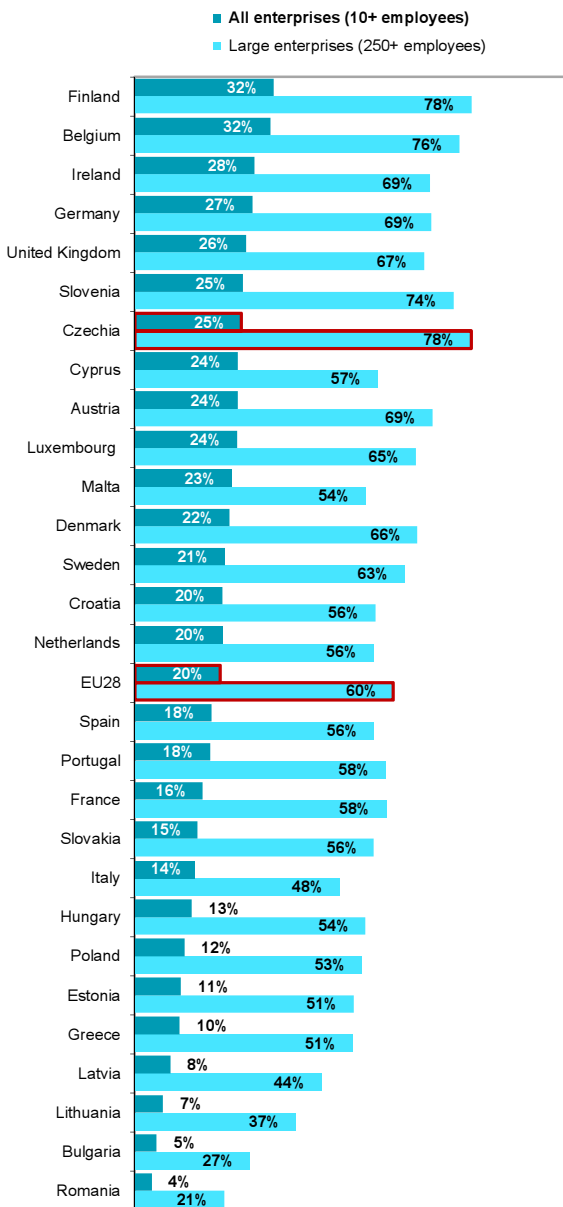


as a percentage of all enterprises in a given size class

Source: Czech Statistical Office, Survey on the ICT Use in Enterprises, 2019

D Enterprises and ICT

Figure D44 Enterprises in EU countries providing training to develop ICT related skills of their employees; 2017



as a percentage of all enterprises in a given size group and country

Source: Eurostat, 2019

D Enterprises and ICT

Tab. D16 Employees in Czech enterprises using at work selected ICT devices for business purposes; 2018

	Percentage		
	Computer, total	with access to the Internet	Portable device*
Total (10+ employees)	50,2	42,9	26,7
Small enterprises (10-49)	46,8	44,3	30,0
Medium enterprises (50-249)	48,5	43,3	27,4
Large enterprises (250+)	52,9	41,9	24,7
Industry (NACE category)			
Manufacturing	44,7	35,3	19,8
Electricity, gas and water supply	64,4	53,3	34,5
Construction	44,5	43,5	34,1
Sale and repair of motor vehicles	69,4	67,1	38,7
Wholesale trade	72,7	67,5	45,2
Retail trade	53,3	40,5	16,1
Transport and storage	43,6	33,1	21,6
Accommodation	43,9	41,5	19,6
Food and beverage service activities	27,7	24,4	13,1
Travel agency and related activities	82,7	82,6	28,3
Media industries	91,3	89,8	59,5
Telecommunications	95,0	94,7	85,2
IT programming and related activities	95,1	94,6	79,8
Real estate activities	60,1	58,4	35,8
Professional, scientific & techn. act.	81,3	80,4	60,4
Administrative and support service act.	25,6	23,9	13,3

* laptops, tablets, or smartphones with the Internet access as a percentage of all employees of enterprises of a given group

Figure D45 Employees of enterprises using at work a computer

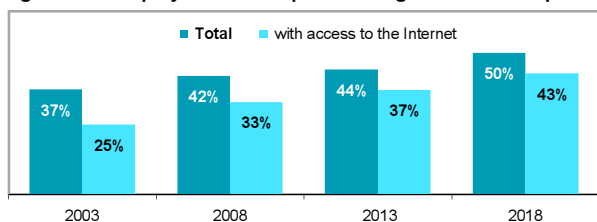
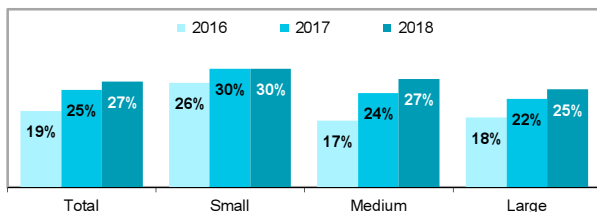


Figure D46 Employees of enterprises using at work portable devices with the Internet access for business purposes

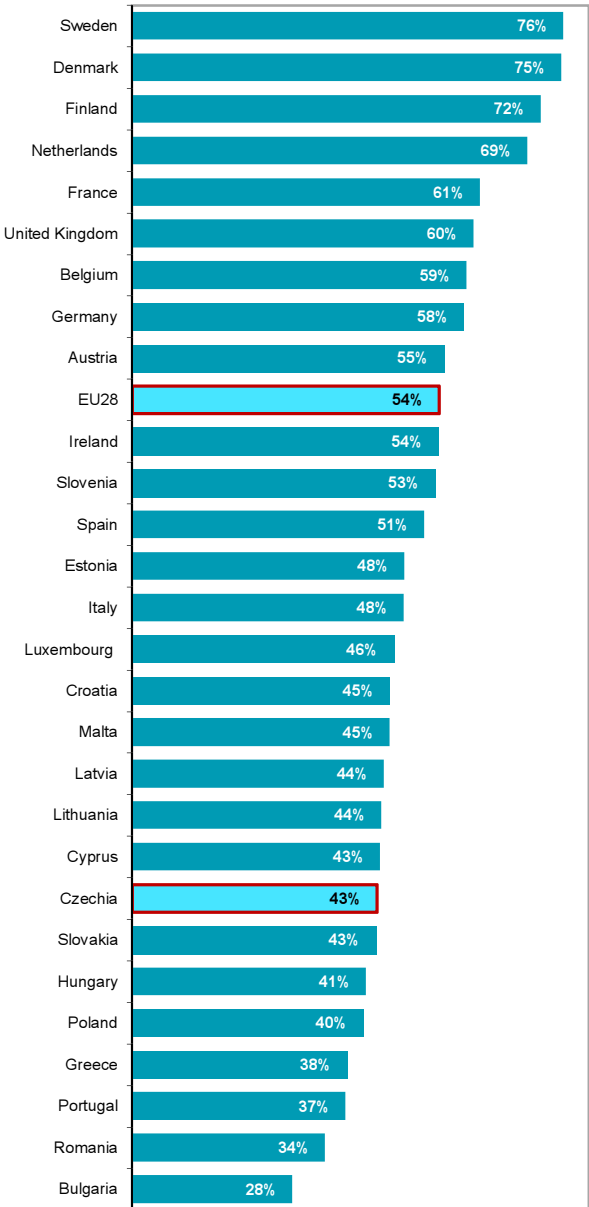


as a percentage of all employees of enterprises in a given size group

Source: Czech Statistical Office, Survey on the ICT Use in Enterprises, 2019

D Enterprises and ICT

Figure D47 Employees of enterprises in EU countries with access to the Internet for business purposes; 2018



as a percentage of all employees in enterprises with 10+ employees

Source: Eurostat, 2019

D Enterprises and ICT

Tab. D17 Enterprises in Czechia that employ ICT specialists; 2018

Percentage

	Total	of which during the year 2017:	
		recruited or tried to recruit new ICT spec.	had vacancies for ICT spec. difficult to fill
Total (10+ employees)	19,4	8,1	6,4
Small enterprises (10-49)	11,8	5,0	4,1
Medium enterprises (50-249)	39,0	14,3	11,0
Large enterprises (250+)	81,4	41,0	31,5
Industry (NACE category)			
Manufacturing	22,4	6,5	4,7
Electricity, gas and water supply	28,9	11,1	9,4
Construction	8,5	2,3	1,6
Sale and repair of motor vehicles	15,5	2,7	2,1
Wholesale trade	17,0	6,8	4,5
Retail trade	13,3	6,4	3,6
Transport and storage	11,1	4,4	3,3
Accommodation	9,0	0,7	0,7
Food and beverage service activities	2,4	0,5	0,3
Travel agency and related activities	25,4	10,3	9,4
Media industries	54,2	32,5	27,4
Telecommunications	84,5	50,7	47,3
IT programming and related activ.	90,3	77,0	69,1
Real estate activities	17,6	3,4	2,5
Professional, scientific & techn. act.	24,6	9,3	8,3
Administrative and support serv. act.	14,8	7,3	6,2

Note: An ICT specialist refers here to an employee for whom the main job is to design, write, test or develop software and apps or to instalate, operate, control or maintain firm's ICT systems incl. technical assistance to users.

as a percentage of all enterprises in a given group

Figure D48 Enterprises having vacancies for ICT specialists that were difficult to fill

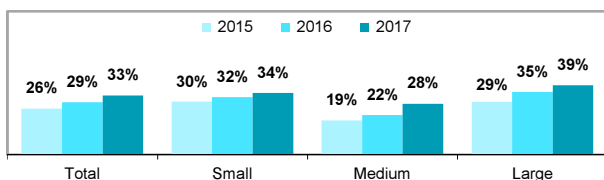
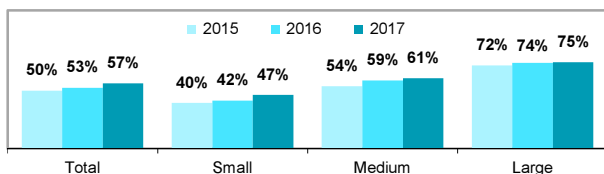


Figure D49 Enterprises providing training for ICT specialists to develop their ICT related skills

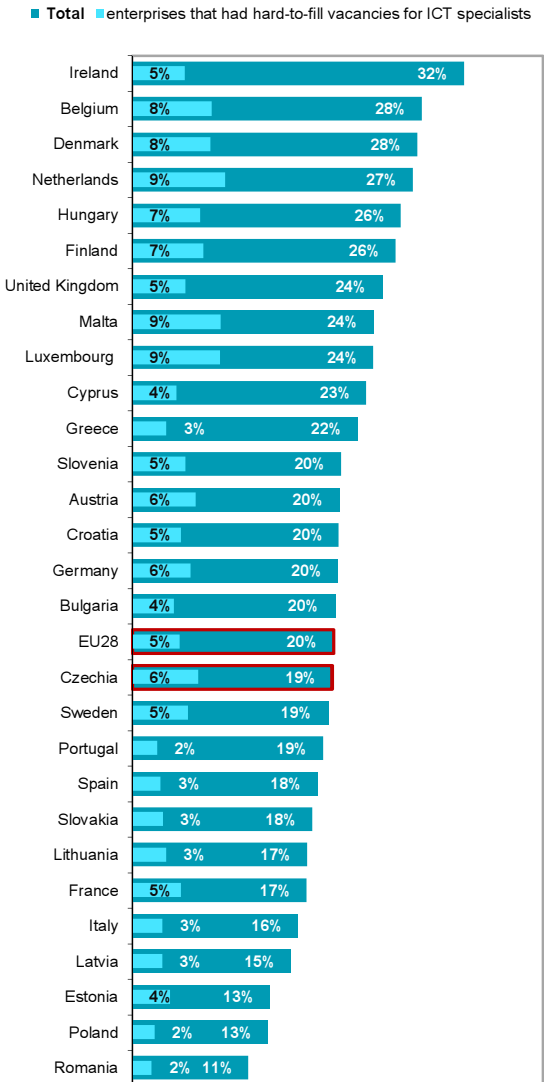


as a percentage of all enterprises employing ICT specialists in a given size class

Source: Czech Statistical Office, Survey on the ICT Use in Enterprises, 2019

D Enterprises and ICT

Figure D50 Enterprises in EU countries that employ ICT specialists; 2018



Note: An ICT specialist refers here to an employee for whom the main job is to design, write, test or develop software and apps or to instalate, operate, control or maintain firm's ICT systems incl. technical assistance to users. as a percentage of all enterprises with 10+ employees in a given country

Source: Eurostat, 2019

D Enterprises and ICT

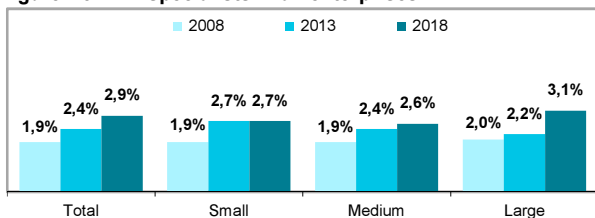
Tab. D18 ICT specialists in Czech enterprises; 2018

	Percentage	
	Total	of which programmers*
Total (10+ employees)	2,9	0,7
Small enterprises (10-49)	2,7	0,9
Medium enterprises (50-249)	2,6	0,7
Large enterprises (250+)	3,1	0,7
Industry (NACE category)		
Manufacturing	0,9	0,3
Electricity, gas and water supply	1,1	0,2
Construction	0,7	0,3
Sale and repair of motor vehicles	1,0	0,3
Wholesale trade	1,5	0,3
Retail trade	0,9	0,2
Transport and storage	0,8	0,1
Accommodation	0,3	0,1
Food and beverage service activities	0,2	0,1
Travel agency and related activities	3,0	1,5
Media industries incl. publishing activities	13,6	3,9
Telecommunications	19,2	5,5
Computer programming and related activ.	59,1	13,3
Real estate activities	1,4	0,3
Professional, scientific and technical activ.	4,0	1,4
Administrative and support service activ.	0,7	0,2

* Employees developing software, applications and information systems designed for the company's internal needs.

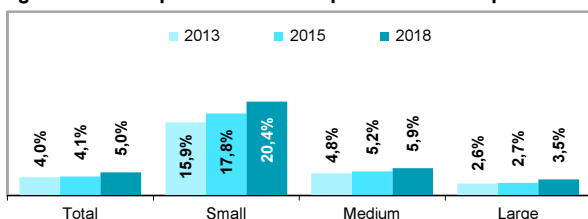
as a percentage of all employees in enterprises in a given group

Figure D51 ICT specialists in all enterprises



as a percentage of all employees in all enterprises in a given size group

Figure D52 ICT specialists in enterprises with ICT specialists



as a percentage of all employees in enterprises with ICT specialists in a given size group

Source: Czech Statistical Office, Survey on the ICT Use in Enterprises, 2019