

A ICT Infrastructure

The **telecommunications and internet infrastructure** is the cornerstone of majority of information technologies and thus the information society as a whole, as well. Data on the state and trends in the infrastructure of electronic communications in Czechia and the Member States of the European Union in the chapter have been collected from the **telecommunication and internet services providers**, on the contrary to majority of other chapters.

The **Reference Period** is as at 31 December of the reference year, unless otherwise stated.

Information in the chapter applies to services provided in retail only that means services provided to **end users**.

Definitions (sorted alphabetically)

- A **subscriber** (or customer) to publicly accessible services of electronic communications shall mean individual (household) or legal entity (e.g. enterprise or public institution), which has concluded a contract on the use of such services with a provider and has an access to the public switched telephone network or public mobile telephone network within the contracted services.
- **Fixed wired access** to the internet includes connections over following technologies and networks: i) digital subscriber line DSL (ADSL, VDSL, FTTC) using fixed telephone networks, ii) cable modem using coaxial cable television networks (CATV) and iii) optical fibre networks (FTTH/B).
- **Fixed wireless access (FWA)** to the internet is the description of fixed wireless access by means of a radio connection both in licensed (including fixed LTE/5G) and non-licensed (fixed Wi-Fi) frequency bands. The end-point device is at a fixed place, located in a building, dwelling etc.
- **SIM cards** are **prepaid** ones, in which case the customer does not conclude any contract with the provider and buys a credit, which the provider deducts payments for services provided from; and **post-paid** ones in which case customers have a contract concluded with the provider and pay for contracted services by monthly invoice.
- The **number of fixed broadband subscriptions** is measured on the basis of so-called access points (**active connections**) at which services are provided in a fixed point via **fixed wired** or **wireless access**.
- The **number of mobile broadband subscriptions using cellular phone** is measured by the number of data SIM cards with activated voice and data services together, which are provided based on the contract allows the access to mobile broadband in cellular phone.
- The **number of subscriptions of voice services in a fixed telephone network** is measured as the number of the **public switched telephone network (PSTN) lines** and the number of **phone numbers** used for voice services by means of the **IP telephone** (VoIP technology).
- The **number of subscriptions of voice services in a mobile network** is measured by the number of **active SIM cards**, which were used at least once in the recent three months for voice services.

Data for the **Czechia** are taken from data sources of the Czech Telecommunication Office. Further information: www.ctu.cz.

International comparisons were worked out by the CZSO using data from the International Telecommunication Union (ITU World Telecommunication/ICT Indicators Database, December 2023), European Commission and OECD (from data source available in February 2024).

Further information on this theme can be found at (in Czech language only): https://www.czso.cz/csu/czso/telekomunikacni_a_internetova_infrastruktura

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Table A1 Fixed telephone voice subscriptions in Czechia*

	2015	2020	2022
	Thousand		
Total	1 896	1 334	1 241
Subscriber			
Household	831	459	356
Legal entity (e.g. enterprise or public inst.)	1 065	875	885
Technology and subscriber			
Switched network (PSTN stations)	994	530	427
Residential subscriber stations	523	244	181
Business subscriber stations	471	286	246
Internet network (VoIP stations)	902	804	814
Residential subscriber stations	309	216	175
Business subscriber stations	594	588	639

Figure A1 Fixed telephone voice subscriptions, total*

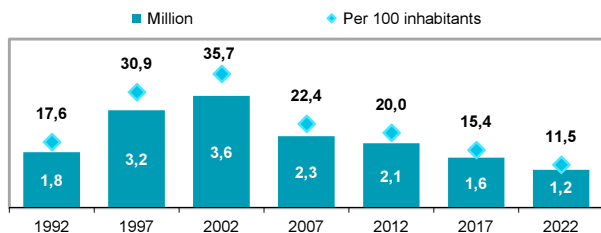


Figure A2 Fixed voice subscriptions* by subscriber (million)

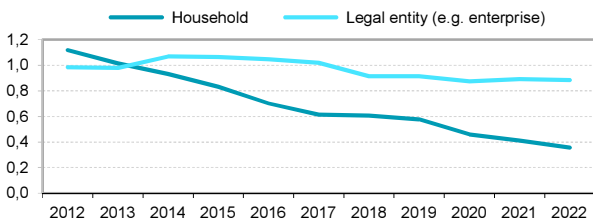
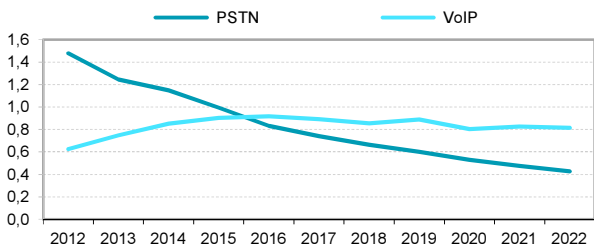


Figure A3 Fixed voice subscriptions* by technology (million)

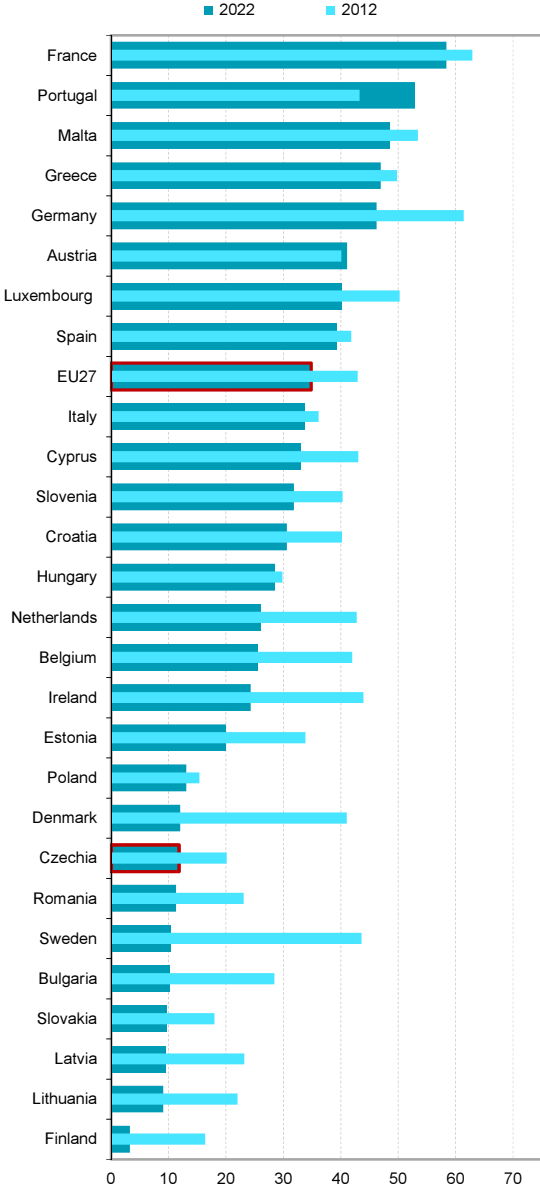


* The number of active residential and business subscriber stations with a contract for voice services over fixed networks.

Source: Czech Telecommunication Office and CZSO own calculations

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Figure A4 Fixed telephone voice subscriptions in EU countries (per 100 inhabitants)



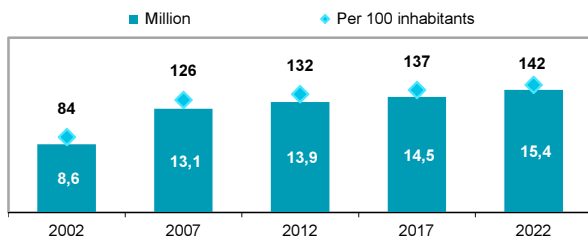
* The number of active residential and business subscriber stations with a contract for voice services over fixed networks.

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Table A2 Mobile telephone voice subscriptions in Czechia

	Active SIM cards (thousand)		
	2015	2020	2022
Total	14 017	14 600	15 408
Subscriber			
Individual (citizen)	9 222	8 836	9 417
Legal entity (e.g. enterprise or public inst.)	4 795	5 764	5 991
Type of service (contract modality)			
Prepaid subscriptions (prepayment)	4 893	3 947	4 059
Postpaid subscriptions (contract)	9 124	10 653	11 349

Figure A5 Mobile telephone voice subscriptions, total*



* The number of SIM cards in mobile phones that were used at least once in the last three months for voice operations.

Figure A6 Mobile telephone voice subscriptions by type of service (contract modality) (million)

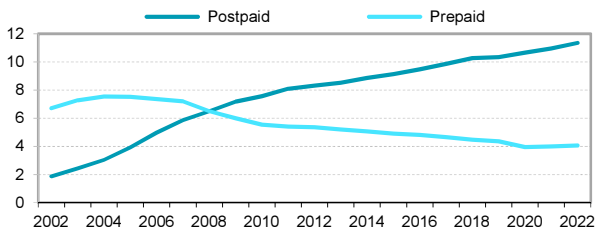
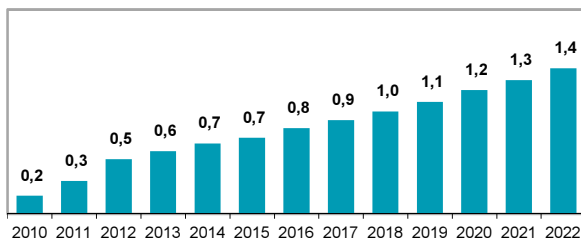


Figure A7 Machine-to-Machine mobile subscriptions (million)**

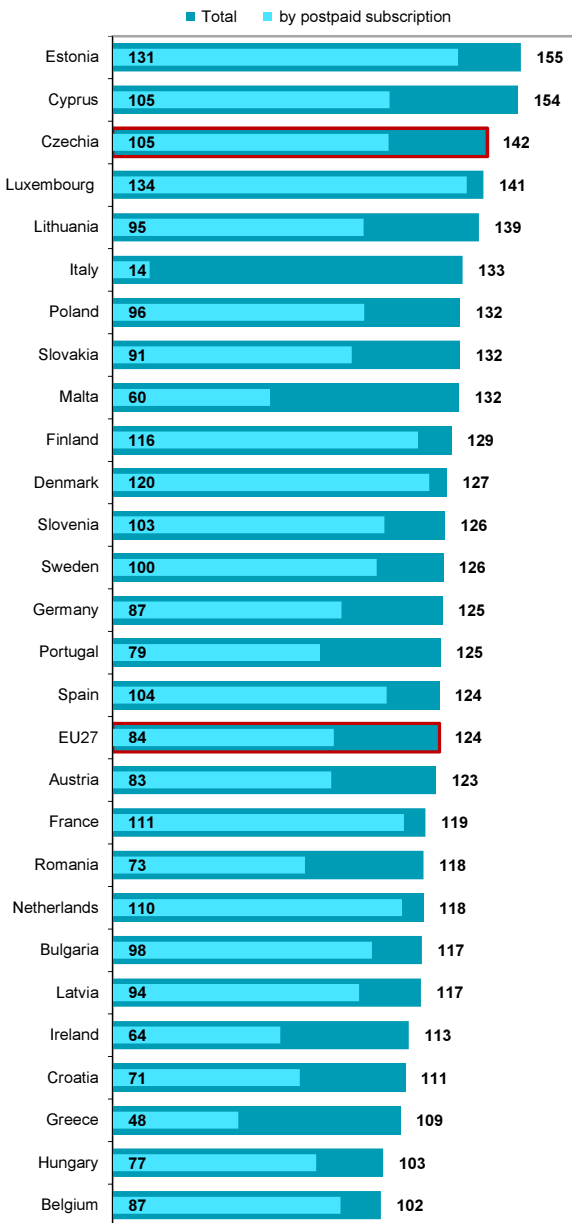


** The number of active SIM cards that are assigned for use in machines and devices (cars, smart meters, consumer electronics) for the exchange of data between networked devices.

Source: Czech Telecommunication Office and CZSO own calculations

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Figure A8 Mobile telephone voice subscriptions in EU countries; 2022 (per 100 inhabitants)



Source: International Telecommunication Union, Czech Telecommunication Office

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Table A3 Fixed voice telephone traffic in Czechia

Outgoing calls from the fixed network (millions of minutes)

	2020	2021	2022
Total	1 318	1 243	1 058
Subscriber			
Household	632	534	434
Legal entity (e.g. enterprise or public inst.)	686	709	624
Technology			
Switched network (PSTN stations)	812	700	577
Internet network (VoIP stations)	506	544	481
Destination and network			
Domestic calls, total	1 202	1 156	976
Fixed-to-Fixed	503	472	400
Fixed-to-Mobile	699	685	575
International calls	72	51	48

Figure A9 Fixed voice telephone traffic, total (minutes)

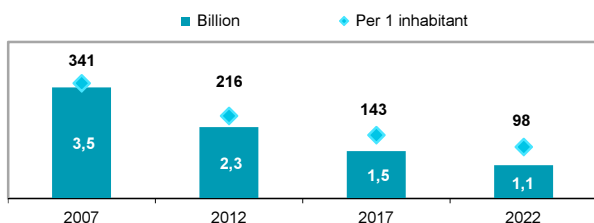


Figure A10 Fixed voice traffic by technology (billion minutes)

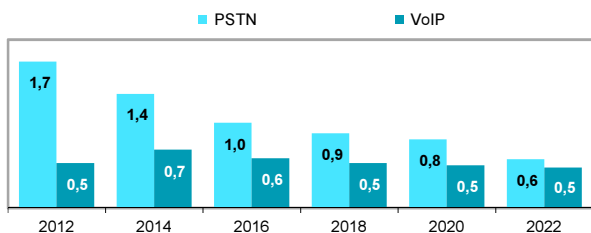
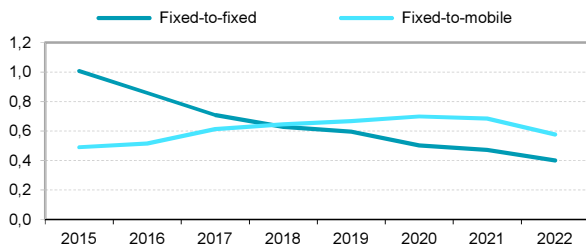


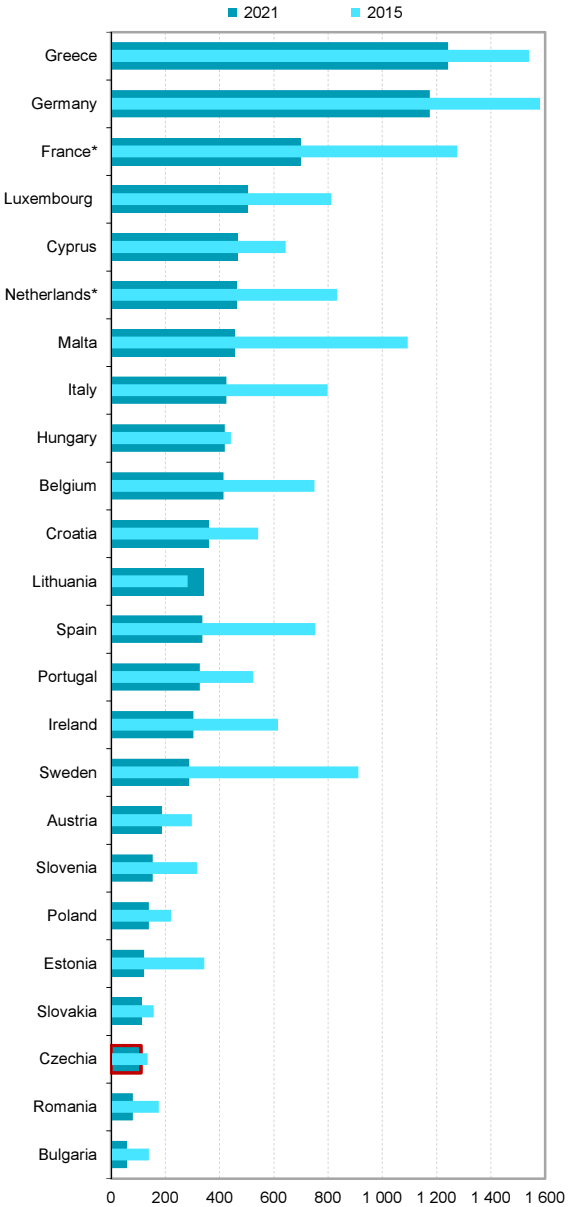
Figure A11 Domestic fixed voice traffic by network (outgoing called minutes per one inhabitant)



Source: Czech Telecommunication Office and CZSO own calculations

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Figure A12 Domestic fixed voice telephone traffic in EU countries (outgoing called minutes per one inhabitant)



* France: data for 2014 and 2019, Netherlands: data for 2015 and 2019.

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Table A4 Mobile telephone voice traffic in Czechia

Outgoing calls from the mobile network (millions of minutes)

	2020	2021	2022
Total	27 091	28 096	27 585
Subscriber			
Individual (citizen)	14 372	15 156	14 755
Legal entity (e.g. enterprise or public inst.)	11 651	11 813	11 558
Destination and network			
Domestic calls, total	25 660	26 628	25 884
to the same mobile network	13 244	13 537	13 433
to other mobile networks	11 451	12 125	11 613
to fixed networks	965	966	838
International calls*	1 430	1 468	1 701

Figure A13 Domestic mobile voice telephone traffic (minutes)

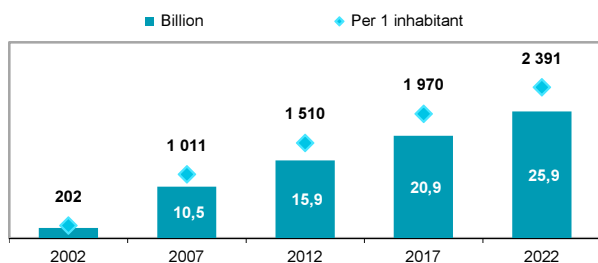


Figure A14 Domestic mobile voice traffic by destination

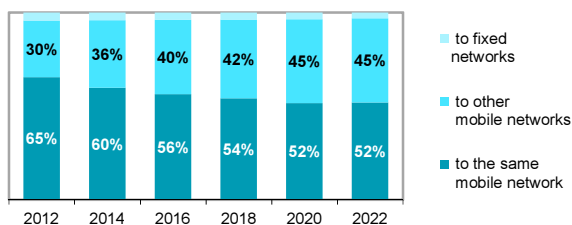
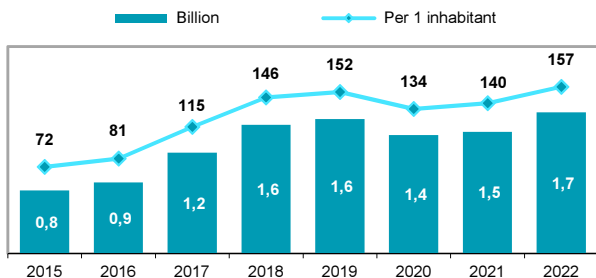


Figure A15 International* mobile voice traffic (minutes)

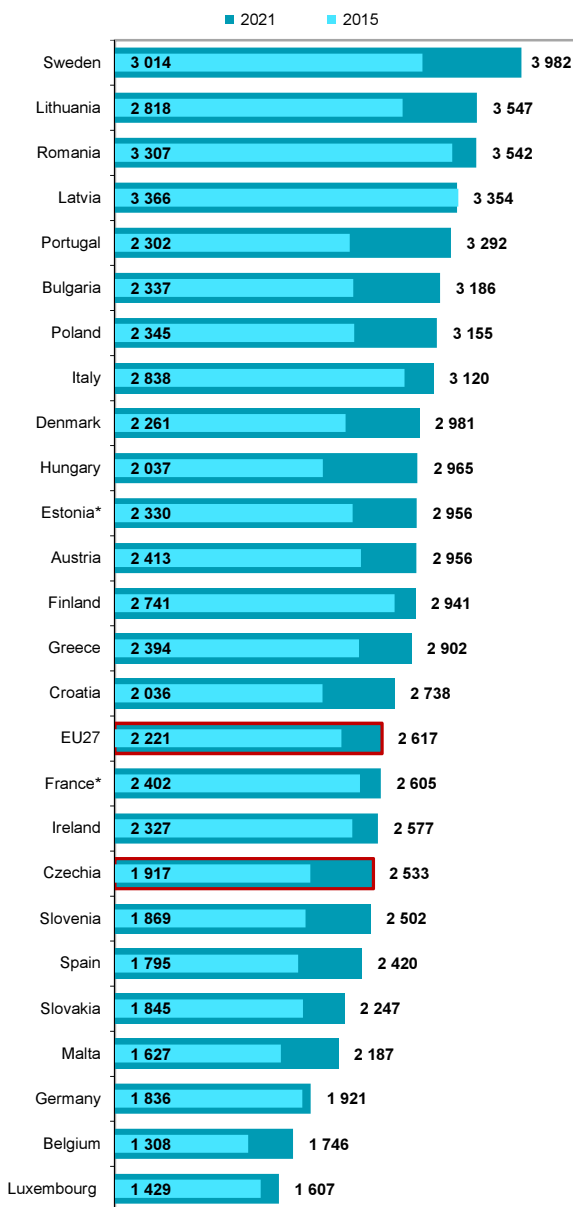


* Incl. outbound roaming, which is not included in the breakdown by subscriber type.

Source: Czech Telecommunication Office and CZSO own calculations

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Figure A16 Domestic mobile voice telephone traffic in EU countries (outgoing called minutes per one inhabitant)



* Estonia: data for 2015 and 2020, France: data for 2015 and 2019

Source: International Telecommunication Union and CZSO own calculations

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Table A5 Fixed broadband subscriptions in Czechia

	Thousand		
	2020	2021	2022
Total	3 833	3 936	4 004
Speed			
< 30 Mbit/s	1 353	1 161	1 037
≥ 30 < 100 Mbit/s	1 253	1 517	1 448
≥ 100 Mbit/s	1 227	1 258	1 519
Subscriber			
Household	3 182	3 260	3 317
Legal entity (e.g. enterprise or public inst.)	651	677	687
Technology			
Fixed wired access, total	2 291	2 355	2 426
DSL incl. FTTCab	956	990	1 004
Fibre (FTTH/B)	721	740	809
Cable modem	614	625	613
Fixed wireless access (FWA), total	1 542	1 582	1 578
WiFi in a fixed location	1 103	1 130	1 126
LTE/5G in a fixed location	440	452	452

Figure A17 Fixed broadband subscriptions, total

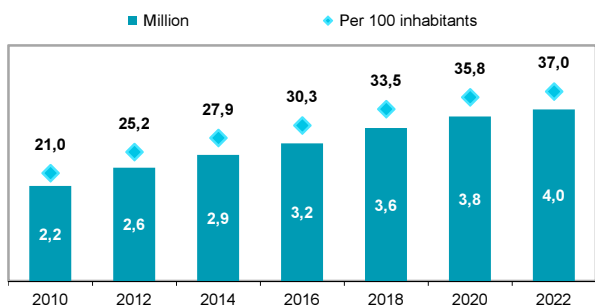
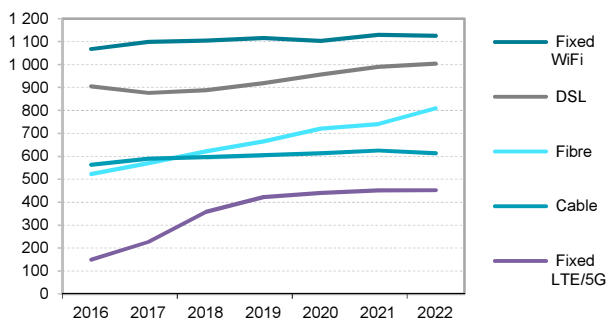


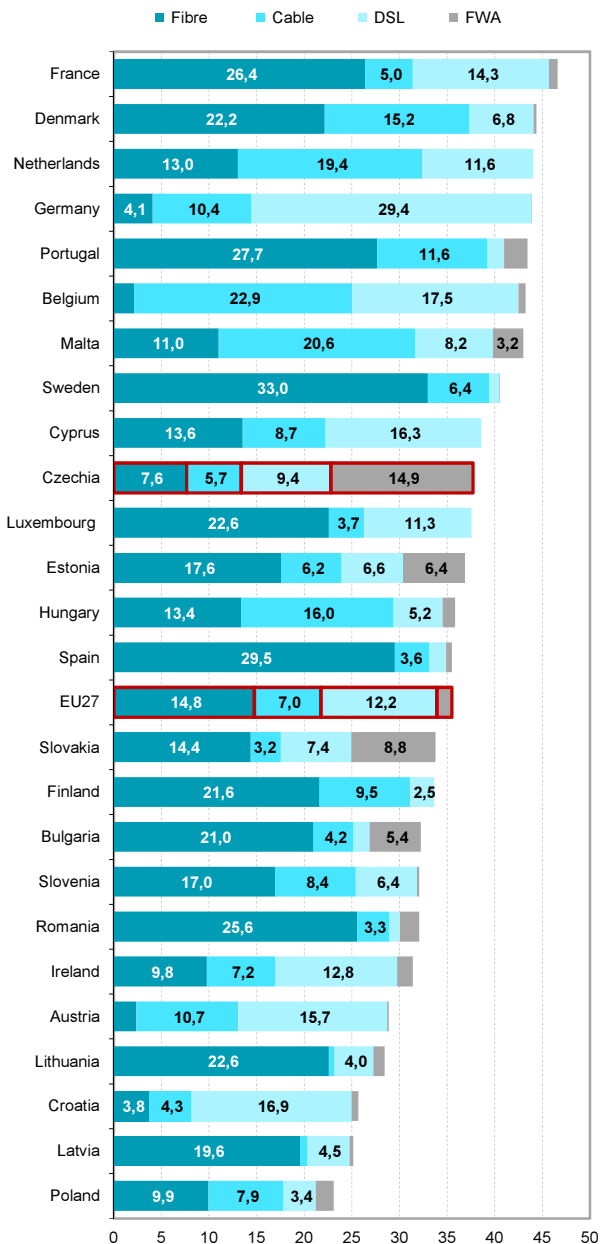
Figure A18 Fixed broadband subscriptions by technology (thousand)



Source: Czech Telecommunication Office and CZSO own calculations

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Figure A19 Fixed broadband subscriptions in EU countries by technology; 2022 (per 100 inhabitants)



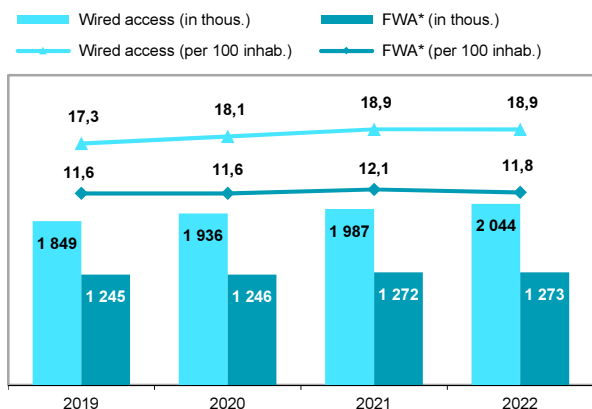
Source: International Telecommunication Union and OECD

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Table A6 Fixed broadband household subscriptions in Czechia

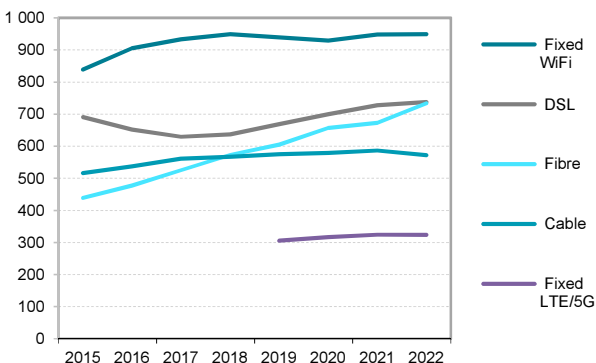
	Thousand		
	2020	2021	2022
Total	3 182	3 260	3 317
Fixed wired access, total	1 936	1 987	2 044
DSL incl. FTTCab	699	728	738
Fibre (FTTH/B)	657	673	734
Cable modem	579	587	572
Fixed wireless access (FWA), total	1 246	1 272	1 273
WiFi in a fixed location	929	948	949
LTE/5G in a fixed location	317	324	324

Figure A20 Fixed broadband household subscriptions



* FWA (Fixed Wireless Access) includes internet connection provided by Internet Service Providers (ISP) as a commercial Wi-Fi or LTE/5G service in a fixed location (building, apartment).

Figure A21 Fixed broadband household subscriptions by technology (thousand)



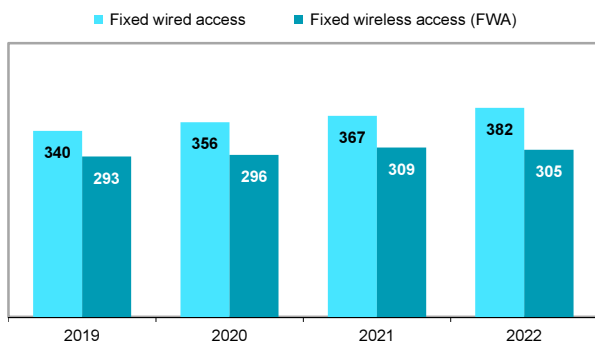
Source: Czech Telecommunication Office and CZSO own calculations

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Table A7 Fixed broadband business subscriptions* in Czechia

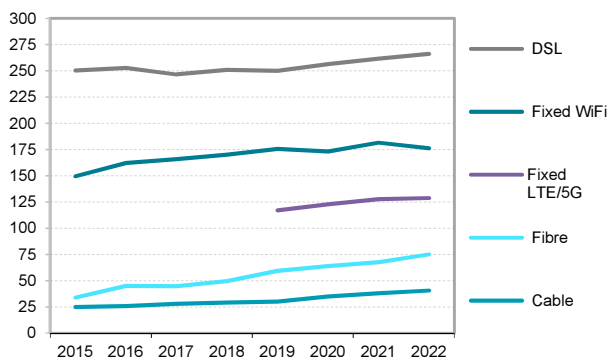
	Thousand		
	2020	2021	2022
Total	651	677	687
Fixed wired access, total	356	367	382
DSL incl. FTTCab	257	262	266
Fibre (FTTH/B)	64	68	75
Cable modem	35	38	41
Fixed wireless access (FWA), total	296	309	305
WiFi in a fixed location	173	182	176
LTE/5G in a fixed location	123	128	129

Figure A22 Fixed broadband business subscriptions* (thous.)



Note: FWA includes internet connection provided by Internet Service Providers (ISP) as a commercial Wi-Fi or LTE/5G service in a fixed location (building).

Figure A23 Fixed broadband business subscriptions* by technology (thousand)



* It includes fixed broadband subscriptions contracted by legal entities such as enterprises, public organizations or institutions.

Source: Czech Telecommunication Office and CZSO own calculations

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Table A8 Fixed wired broadband in Czechia by speed*; 2022

	Thousand subscriptions		
	< 30 Mbit/s	30–99,9 Mbit/s	≥ 100 Mbit/s
Total (only wired access)	351	724	1 351
DSL, total	292	456	256
ADSL	31	.	.
VDSL (FTTCab incl.)	261	456	256
Fibre, total	48	184	577
FTTHome	16	60	336
FTTBuilding	32	124	241
Cable modem	11	84	518

Figure A24 Fixed wired broadband subscriptions with contracted speed faster than 100 Mbit/s

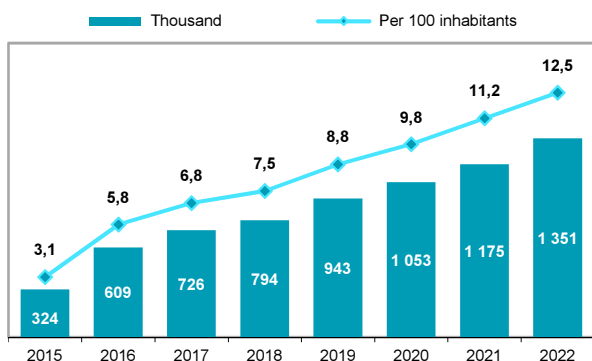
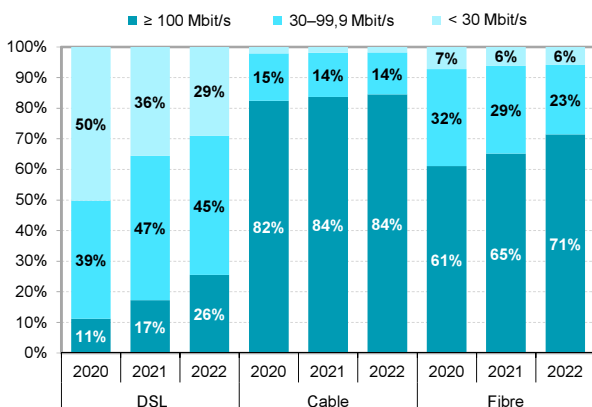


Figure A25 Fixed broadband subscriptions by speed tiers

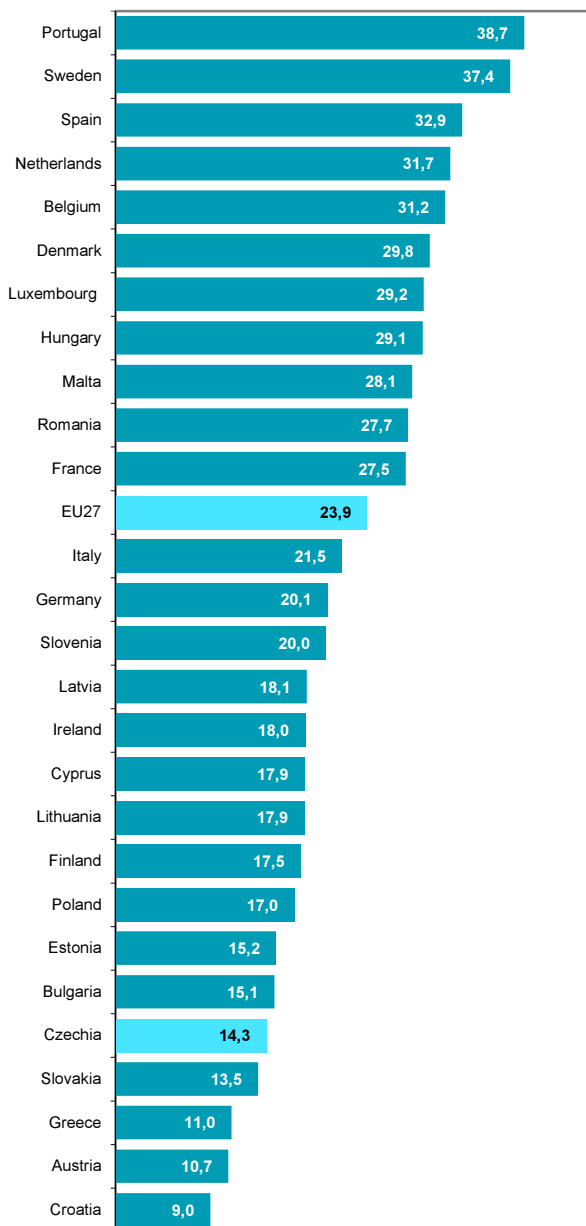


* The number of active residential and business fixed broadband subscriptions with a contract on the use of internet access at a fixed location by given technology and advertised downstream speed.

Source: Czech Telecommunication Office and CZSO own calculations

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Figure A26 Fixed broadband in EU countries with contracted speed faster than 100 Mbit/s; 2022
(subscriptions per 100 inhabitants)



Source: European Commission, OECD and CZSO own calculations

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Table A9 Mobile broadband subscriptions in Czechia

Active data SIM cards and USB modems (thousand)

	2020	2021	2022
Total	10 109	10 434	11 022
Data and voice subscriptions, total*	9 718	10 085	10 709
Temporary access w/o monthly plans	1 980	1 845	1 959
Postpaid monthly data plans	7 739	8 239	8 750
Data-only subscriptions**	390	349	313

* These are typically smartphone based subscriptions with voice and data services used in the same terminal.

** It refers to subscriptions that offer mobile broadband as a stand-alone service, such as mobile-broadband subscriptions for datacards, USB modem/dongle used in tablets or any computer based device.

Figure A27 Mobile broadband subscriptions, total

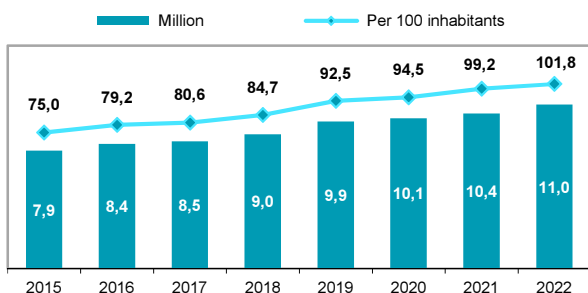


Figure A28 Data and voice mobile broadband subscriptions for smartphones with monthly data plans

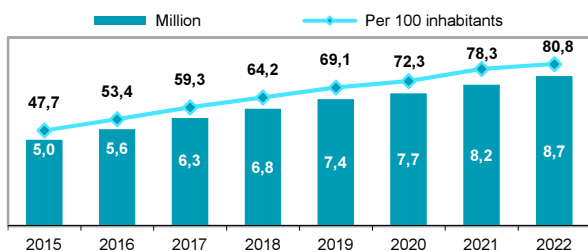
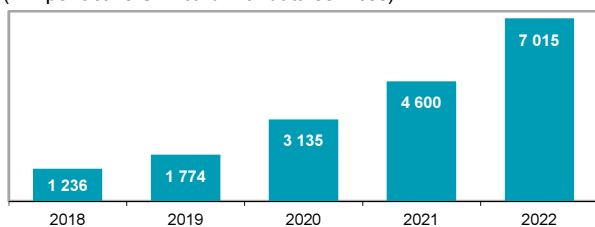


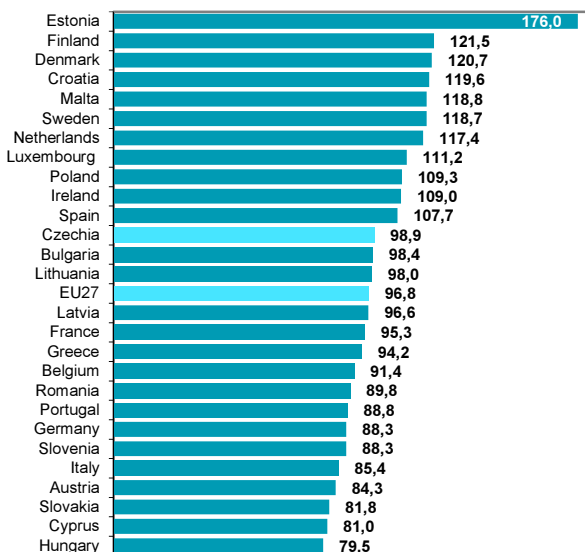
Figure A29 Average monthly mobile data consumption (MB per active SIM card with data services)



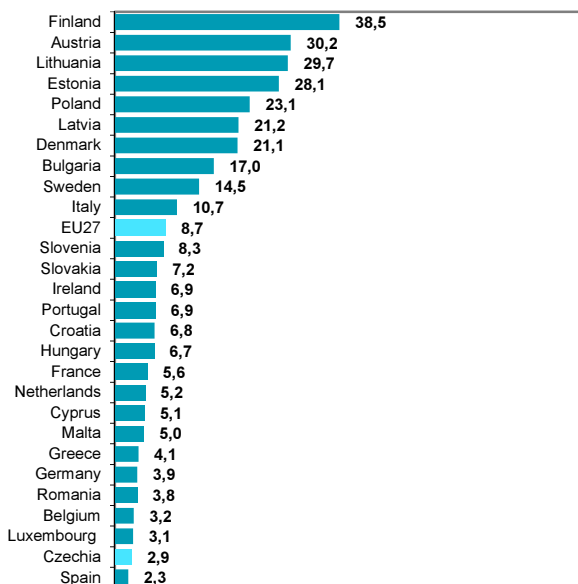
Source: Czech Telecommunication Office and CZSO own calculations

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Figure A30 Data and voice mobile broadband subscriptions for smartphones in EU countries; 2022 (per 100 inhabitants)



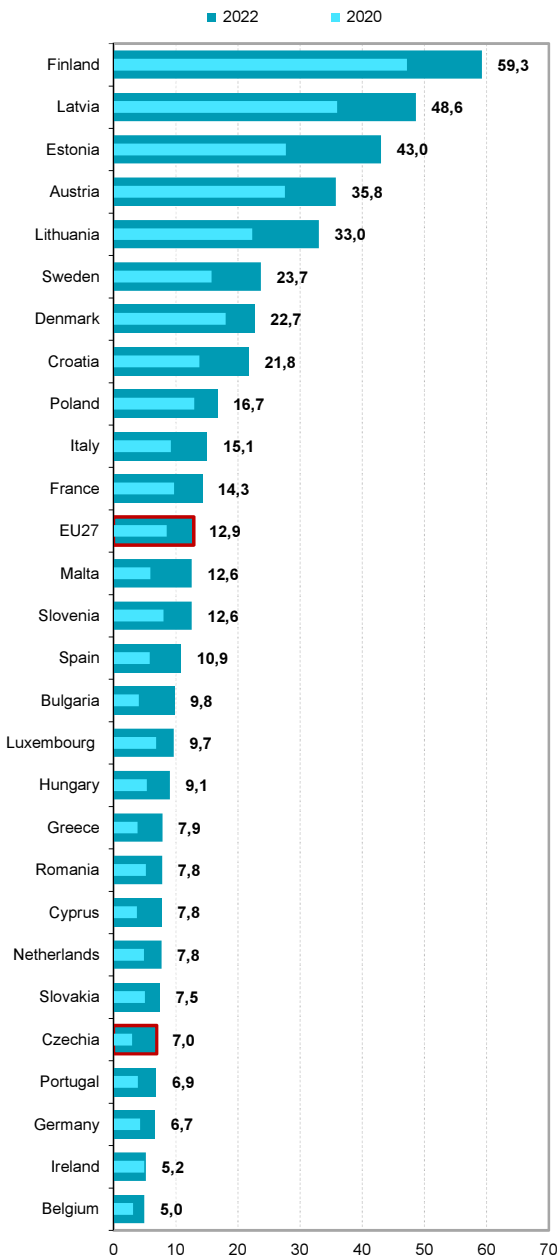
Graf A31 Data-only mobile broadband subscriptions for tablets or laptops in EU countries; 2022 (per 100 inhabitants)



Source: International Telecommunication Union and OECD

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Graf A32 Average monthly mobile data usage in EU countries (GB per 1 inhabitant)



Source: International Telecommunication Union