

## A ICT Infrastructure

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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 or legal entity, 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.
- **Domain (internet domain and/or domain name)** shall mean a definite identifier of a computer or a computer network connected to the internet. The domains shall be registered by domain name registrars, which are authorised to administer Top Level Domains.
- **Fixed wired access** to the internet includes connections over following technologies and networks: i) digital subscriber line xDSL (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) and non-licensed (fixed Wi-Fi) frequency bands. The end-point device is at a fixed place, located in a building, dwelling etc. Sometimes this alternative is also called Wireless Local Loop (WLL).
- **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, except for the number of registered domains (source: cz.nic). Further information: [www.ctu.cz](http://www.ctu.cz) and [www.nic.cz](http://www.nic.cz).

**International comparisons** were worked out by the CZSO using data from the International Telecommunication Union (ITU World Telecommunication/ICT Indicators Database, December 2021), European Commission and OECD (from data source available in February 2022).

**Further information on this theme can be found at** (in Czech language only): [https://www.czso.cz/csu/czso/telekomunikacni\\_a\\_internetova\\_infrastruktura](https://www.czso.cz/csu/czso/telekomunikacni_a_internetova_infrastruktura)

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Tab. A1 Fixed telephone voice subscriptions in Czechia

	Thousand		
	2010	2015	2020
<b>Total</b>	<b>2 334</b>	<b>1 896</b>	<b>1 334</b>
<b>Subscriber type</b>			
Household - residential subscriptions	1 289	831	459
Organization - business subscriptions	1 044	1 065	875
<b>Network technology and subscriber type</b>			
<b>Switched network - PSTN lines</b>	<b>1 871</b>	<b>994</b>	<b>530</b>
Household - residential PSTN lines	989	523	244
Organization - business PSTN lines	882	471	286
<b>Internet network - VoIP lines</b>	<b>462</b>	<b>902</b>	<b>804</b>
Household - residential VoIP lines	300	309	216
Organization - business VoIP lines	162	594	588

Figure A1 Fixed PSTN telephone voice subscriptions

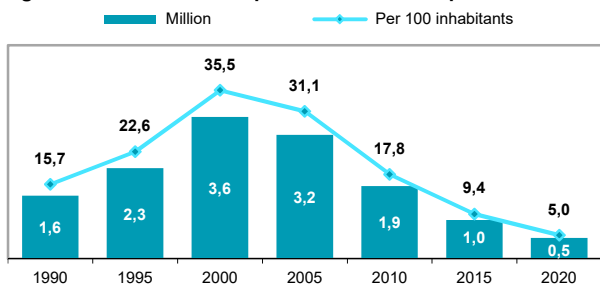


Figure A2 PSTN lines by subscriber type (million)

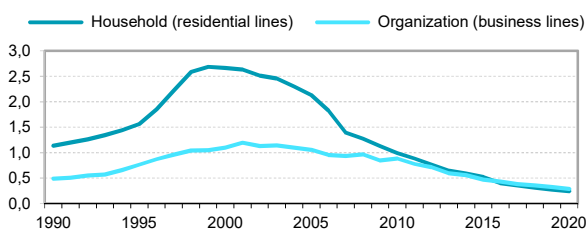
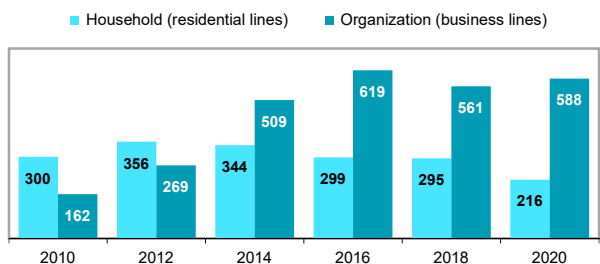


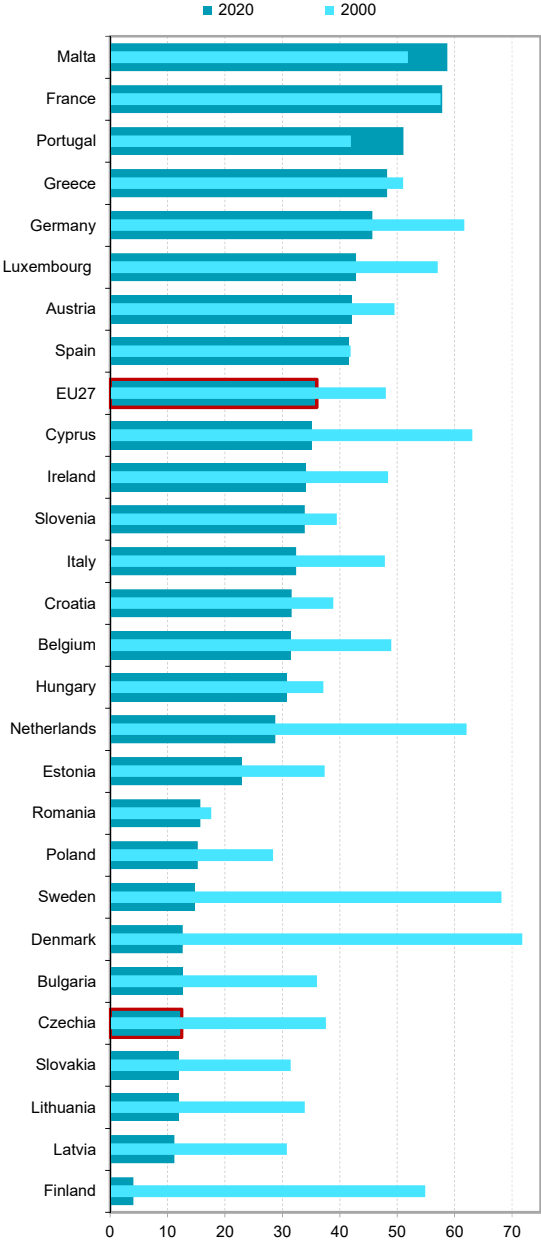
Figure A3 VoIP lines by subscriber type (thousand)



Source: Czech Telecommunication Office and CZSO own calculations

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



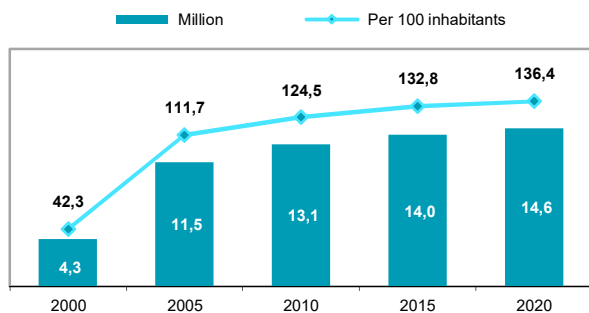
Source: International Telecommunication Union

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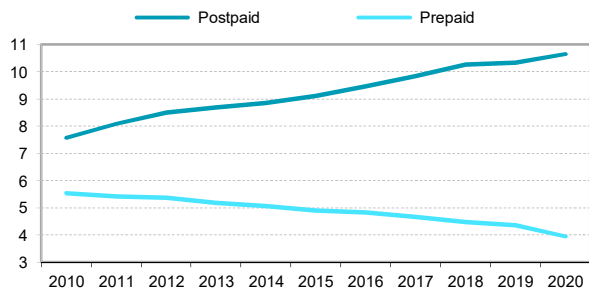
**Table A2 Mobile telephone voice subscriptions in Czechia**

	Thousand		
	2010	2015	2020
<b>Total</b>	<b>13 113</b>	<b>14 017</b>	<b>14 600</b>
<b>Subscriber type</b>			
Individual (citizen)	.	9 222	8 836
Organization (e.g. enterprise)	.	4 795	5 764
<b>Type of SIM card</b>			
Prepaid	5 538	4 893	3 947
Postpaid	7 575	9 124	10 653

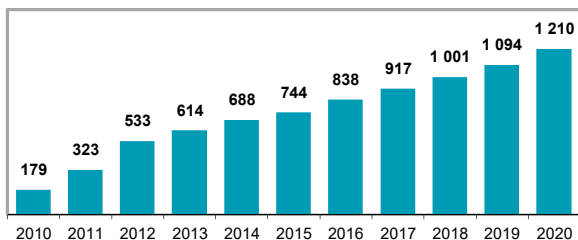
**Figure A5 Mobile telephone voice subscriptions**



**Figure A6 Active SIM cards by subscription type (million)**



**Figure A7 M2M subscriptions\* (thousand)**

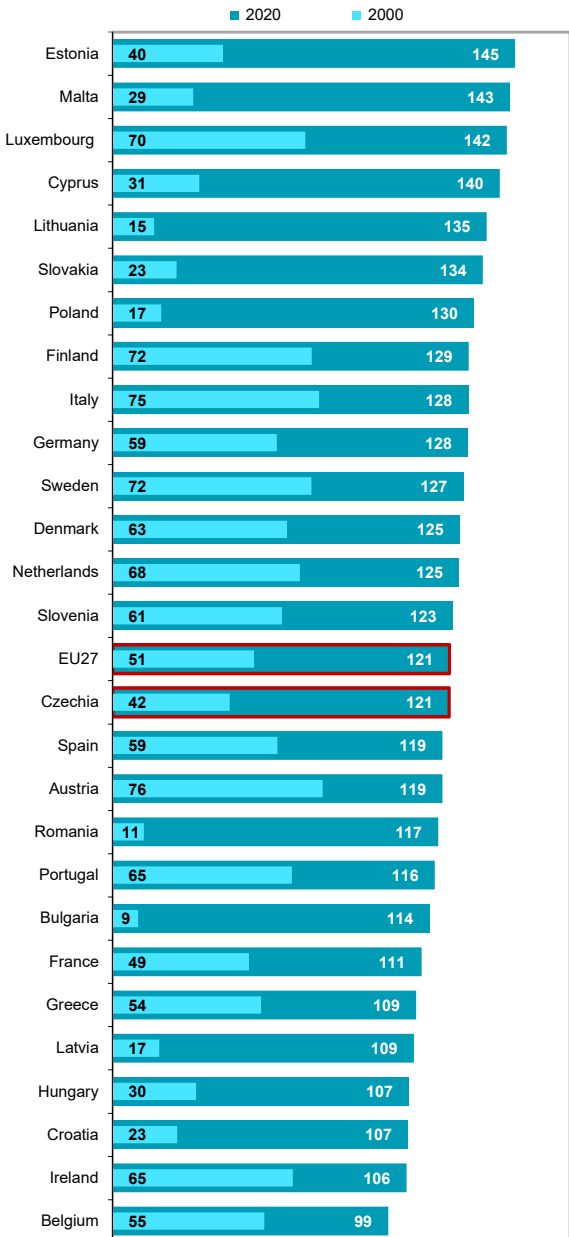


\* Machine-to-Machine (M2M) includes SIM cards designed exclusively for wireless communication among devices and systems without human intervention.

Source: Czech Telecommunication Office and CZSO own calculations

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



Source: International Telecommunication Union

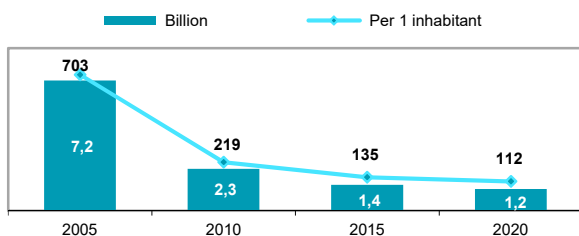
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**Table A3 Fixed telephone traffic in Czechia**

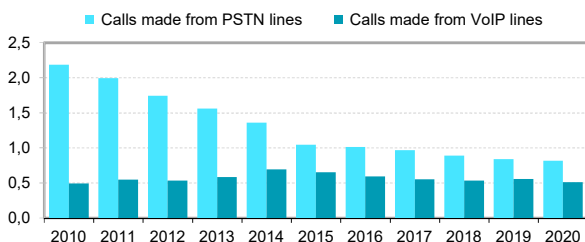
Outgoing calls from the fixed network in million minutes

	2010	2015	2020
<b>Total</b>	<b>2 676</b>	<b>1 689</b>	<b>1 318</b>
<b>Subscriber type</b>			
Household - calls from residential lines	.	.	632
Organization - calls from business lines	.	.	686
<b>Technology</b>			
Switched network - calls from PSTN lines	2 185	1 041	812
Internet network - calls from VoIP lines	490	648	506
<b>Destination</b>			
<b>Domestic calls, total</b>	<b>2 310</b>	<b>1 422</b>	<b>1 202</b>
Fixed-to-Fixed calls	1 898	1 007	503
Fixed-to-Mobile calls	412	415	699
<b>International calls</b>	<b>160</b>	<b>110</b>	<b>72</b>

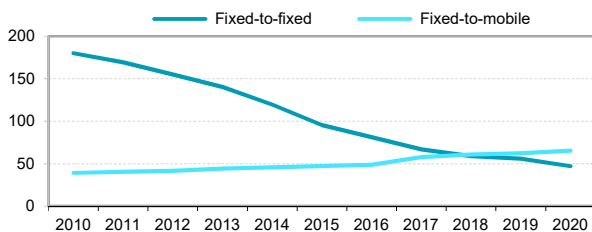
**Figure A9 Domestic fixed telephone traffic (minutes)**



**Figure A10 Fixed telephone traffic by technology**  
(outgoing calls in billion minutes)



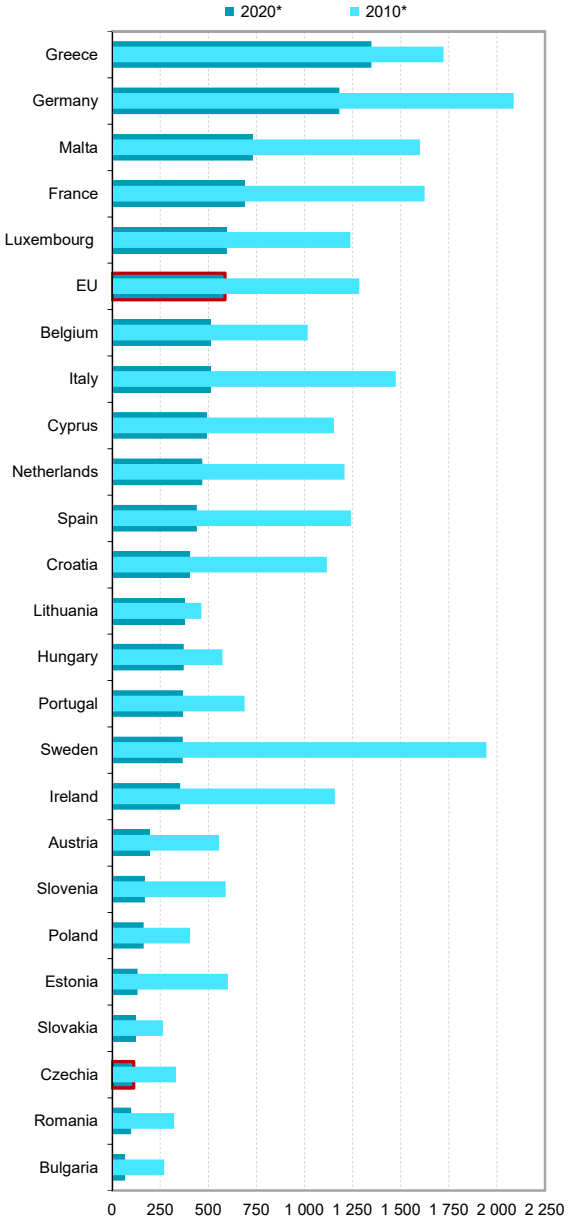
**Figure A11 Domestic fixed telephone traffic by network**  
(outgoing called minutes per one inhabitant)



Source: Czech Telecommunication Office and CZSO own calculations

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



\* or last available year

Source: International Telecommunication Union

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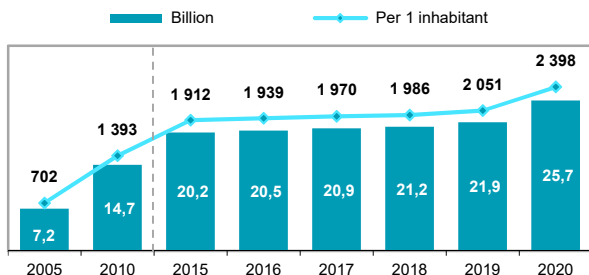
**Table A4 Mobile telephone traffic in Czechia**

Outgoing calls from the mobile network in million minutes

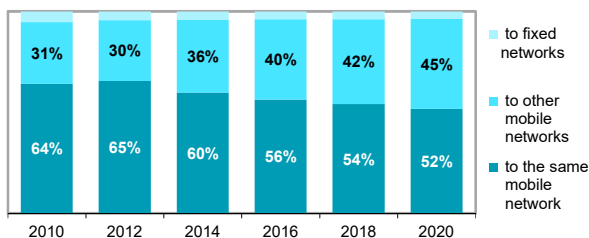
	2018	2019	2020
<b>Total</b>	<b>22 705</b>	<b>23 553</b>	<b>27 091</b>
<b>Subscriber type</b>			
Individual (citizen)	11 685	12 293	14 372
Organization (e.g. enterprise)	9 870	9 991	11 651
<b>Destination</b>			
<b>Domestic calls, total</b>	<b>21 152</b>	<b>21 931</b>	<b>25 660</b>
to the same mobile network	11 443	11 595	13 244
to other mobile networks	8 889	9 501	11 451
to fixed networks	821	836	965
<b>International calls*</b>	<b>1 553</b>	<b>1 622</b>	<b>1 430</b>

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

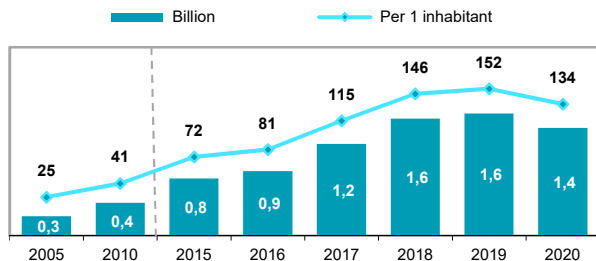
**Figure A13 Domestic mobile telephone traffic (minutes)**



**Figure A14 Domestic mobile telephone traffic by destination**



**Figure A15 International mobile telephone traffic (minutes)**

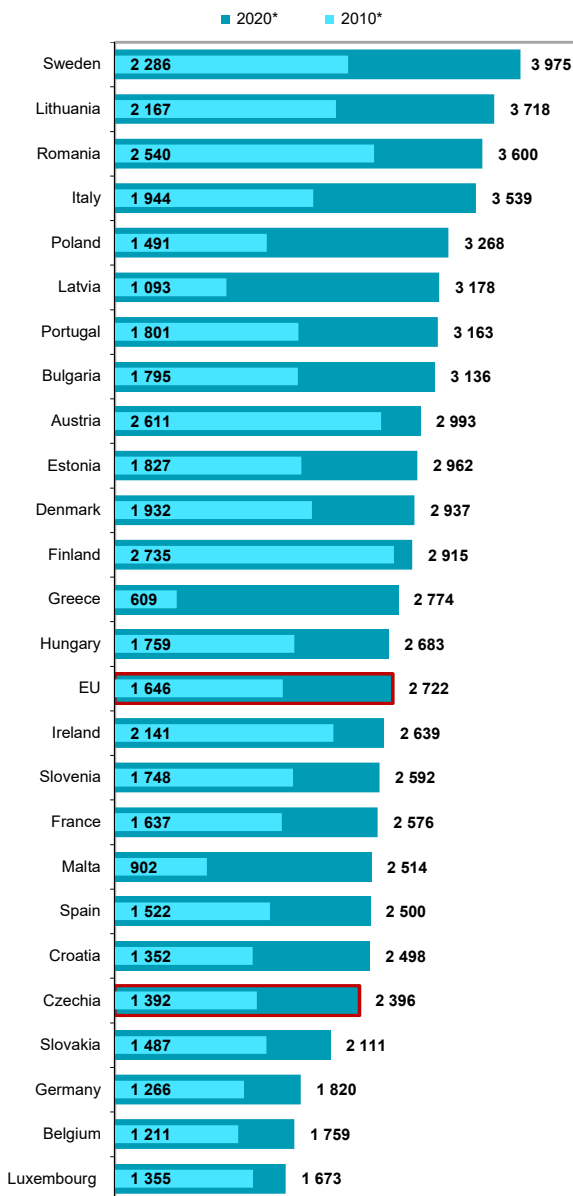


Source: Czech Telecommunication Office and CZSO own calculations



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



\* or last available year

Source: International Telecommunication Union

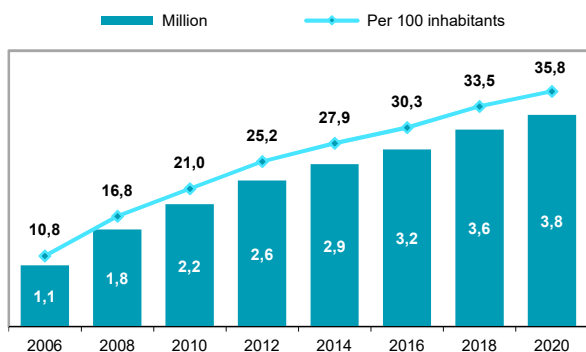
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**Table A5 Fixed broadband subscriptions in Czechia**

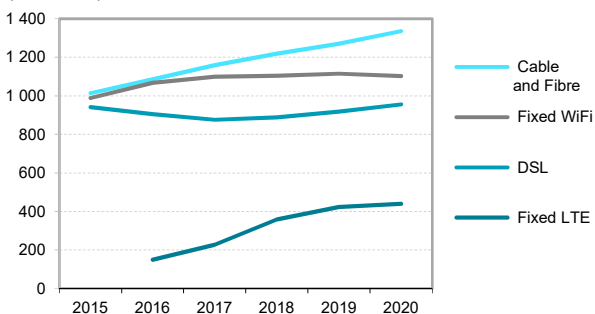
	2018	2019	2020
	Thousand		
<b>Total</b>	<b>3 570</b>	<b>3 726</b>	<b>3 833</b>
<b>Connection speed*</b>			
< 30 Mbit/s	1 472	1 550	1 353
≥ 30 < 100 Mbit/s	916	1 101	1 253
≥ 100 Mbit/s	823	1 075	1 227
<b>Subscriber type*</b>			
Household	2 727	3 094	3 182
Organization (e.g. enterprise)	485	632	651
<b>Access and technology type</b>			
<b>Wired fixed access, total</b>	<b>2 107</b>	<b>2 188</b>	<b>2 291</b>
DSL	888	918	956
Cable and Fibre	1 219	1 270	1 335
<b>Wireless fixed access, total</b>	<b>1 463</b>	<b>1 538</b>	<b>1 542</b>
Fixed WiFi	1 105	1 115	1 103
Fixed LTE	358	423	440

\* excludes fixed LTE for the year 2018

**Figure A17 Fixed broadband subscriptions**



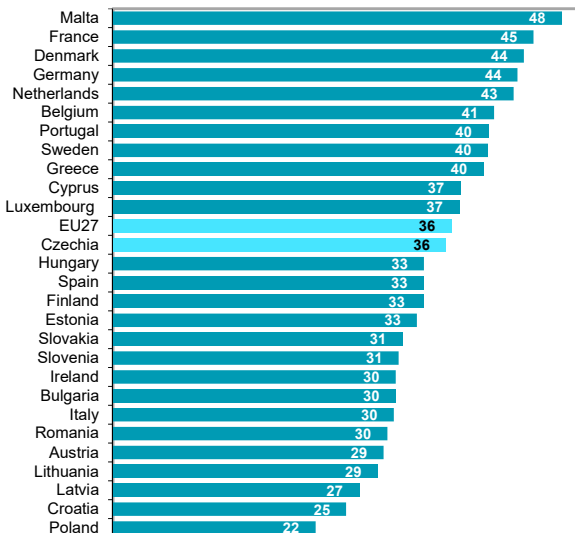
**Figure A18 Fixed broadband subscriptions by technology (thousand)**



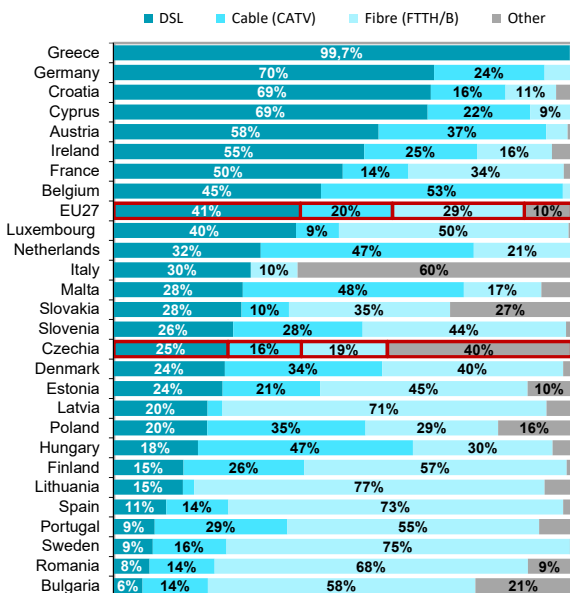
Source: Czech Telecommunication Office and CZSO own calculations

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**Figure A19 Fixed broadband subscriptions in EU countries; 2020 (per 100 inhabitants)**



**Figure A20 Fixed broadband subscriptions in EU countries by technology; 2020**



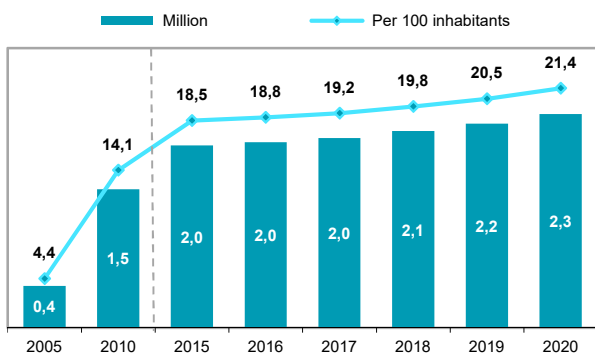
Source: International Telecommunication Union and OECD

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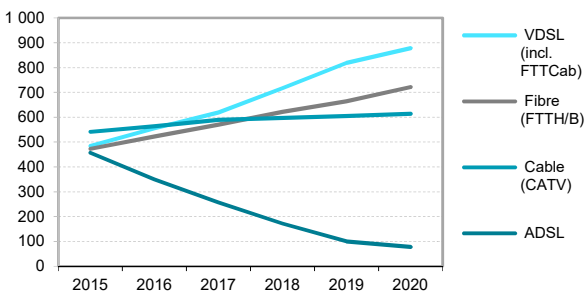
**Table A6 Wired fixed broadband subscriptions in Czechia**

	Thousand		
	2018	2019	2020
<b>Total</b>	<b>2 107</b>	<b>2 188</b>	<b>2 291</b>
<b>Speed</b> (advertised download speed)			
< 30 Mbit/s	772	662	547
≥ 30 < 100 Mbit/s	541	583	692
≥ 100 Mbit/s	794	943	1 053
<b>Subscriber type</b>			
Household	1 777	1 849	1 936
Organization (e.g. enterprise)	330	340	356
<b>Network and technology type</b>			
<b>Fixed telephone network, total</b>	<b>888</b>	<b>918</b>	<b>956</b>
ADSL	172	100	78
VDSL incl. FTTCab	717	818	878
<b>Fibre network, total</b>	<b>622</b>	<b>664</b>	<b>721</b>
FTTH	154	188	244
FTTB	469	476	478
<b>Cable network (CATV)</b>	<b>597</b>	<b>606</b>	<b>614</b>

**Figure A21 Wired fixed broadband subscriptions**



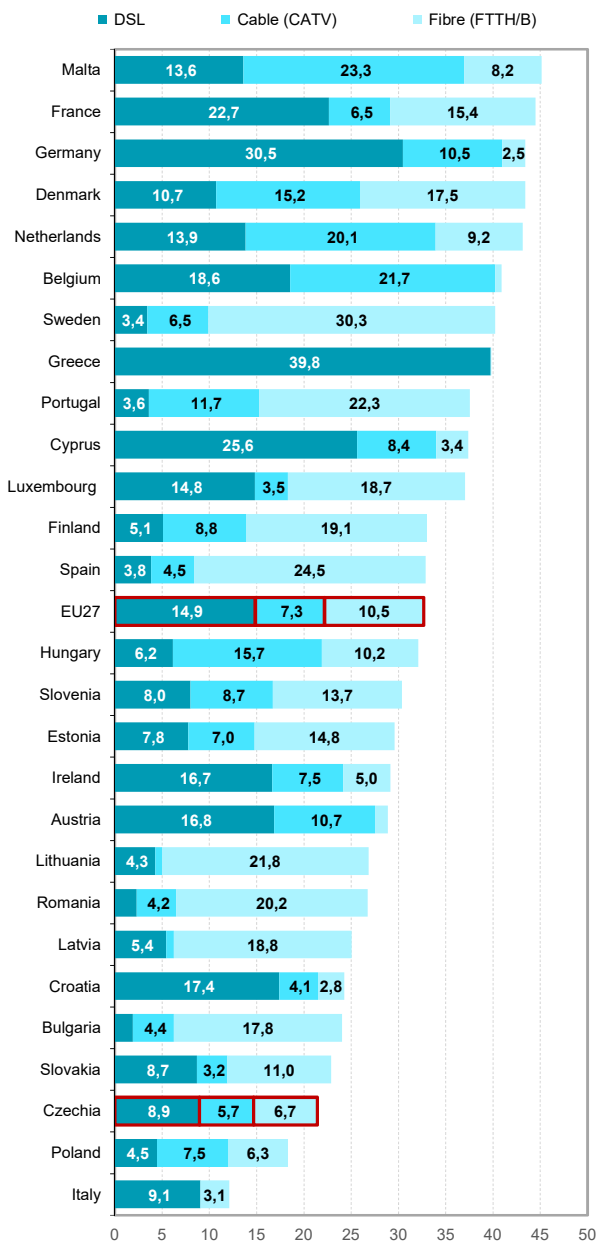
**Figure A22 Wired fixed broadband subscriptions by technology (thousand)**



Source: Czech Telecommunication Office and CZSO own calculations

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**Figure A23 Wired fixed broadband subscriptions in EU countries by technology; 2020 (per 100 inhabitants)**



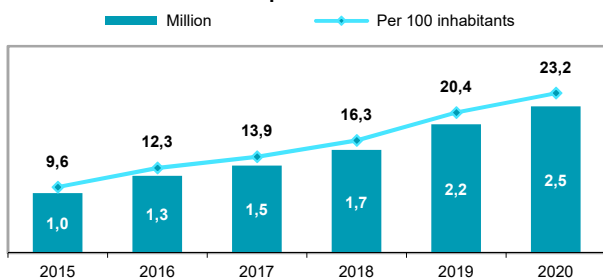
Source: International Telecommunication Union and OECD

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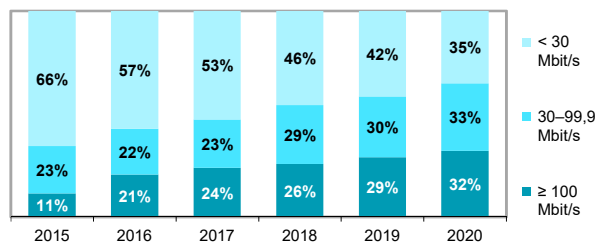
**Table A7 Fixed broadband by speed in Czechia; 2020**

	Thousand subscriptions		
	< 30 Mbit/s	30–99,9 Mbit/s	≥ 100 Mbit/s
<b>Total</b>	<b>1 353</b>	<b>1 253</b>	<b>1 227</b>
<b>Wired fixed access, total</b>	<b>547</b>	<b>692</b>	<b>1 053</b>
DSL	481	369	107
Cable (CATV)	13	95	506
Fibre (FTTH/B)	53	228	440
<b>Wireless fixed access, total</b>	<b>806</b>	<b>562</b>	<b>174</b>
Fixed WiFi	464	476	162
Fixed LTE	342	85	12

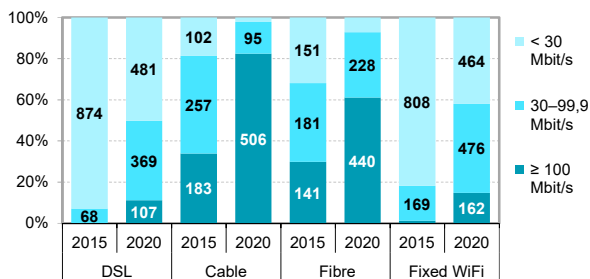
**Figure A24 Fixed broadband subscriptions with advertised download speed 30 Mbit/s or more**



**Figure A25 Fixed broadband subscriptions by speed**



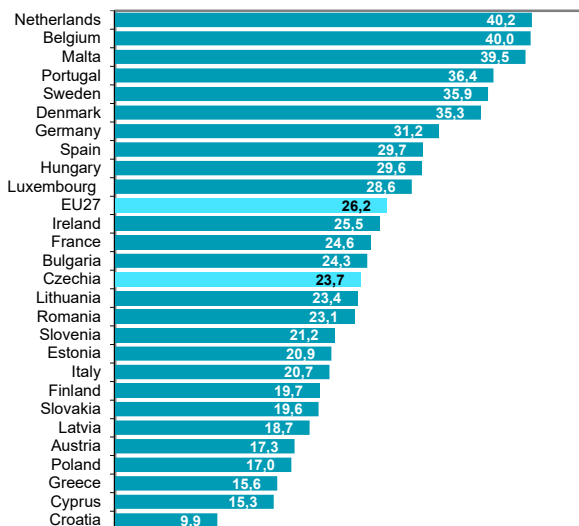
**Figure A26 Speed of fixed broadband technologies (thousand subscriptions; percentage)**



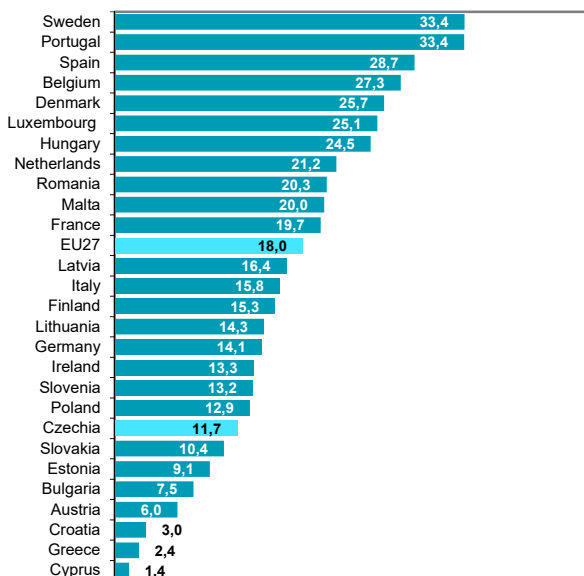
Source: Czech Telecommunication Office and CZSO own calculations

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**Figure A27 Fixed broadband subscriptions in EU countries with download speed 30 Mbit/s and more; 2020**  
(per 100 inhabitants)



**Figure A28 Fixed broadband subscriptions in EU countries with download speed 100 Mbit/s and more; 2020**  
(per 100 inhabitants)



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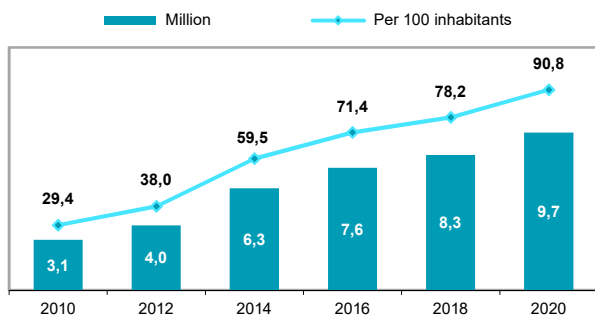
**Table A8 Mobile broadband subscriptions in Czechia**

	2018	2019	2020
<b>Total data and voice subscriptions*</b>	<b>8 333</b>	<b>9 372</b>	<b>9 718</b>
Prepaid monthly plans	1 494	1 981	1 980
Postpaid monthly plans/tariffs	6 839	7 391	7 739

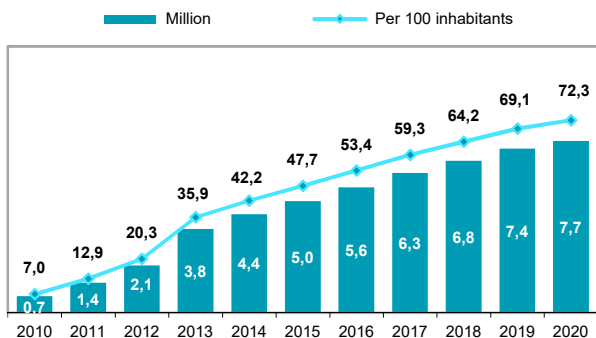
Thousand

\* Includes active SIM cards for both voice&data services, installed in telephones

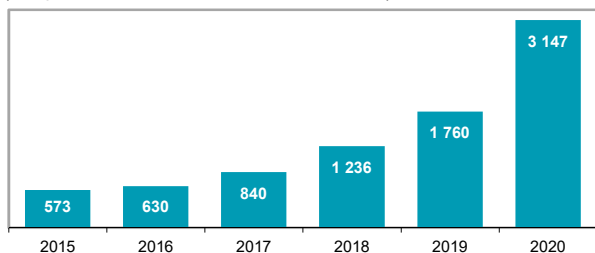
**Figure A29 Mobile broadband subscriptions**



**Figure A30 Mobile broadband subscriptions (postpaid plans)**



**Figure A31 Average monthly mobile data consumption**  
(MB per active SIM card with data services)

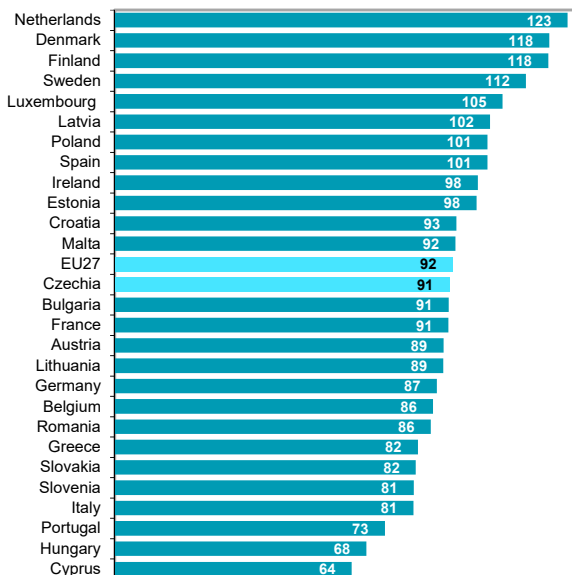


Source: Czech Telecommunication Office and CZSO own calculations

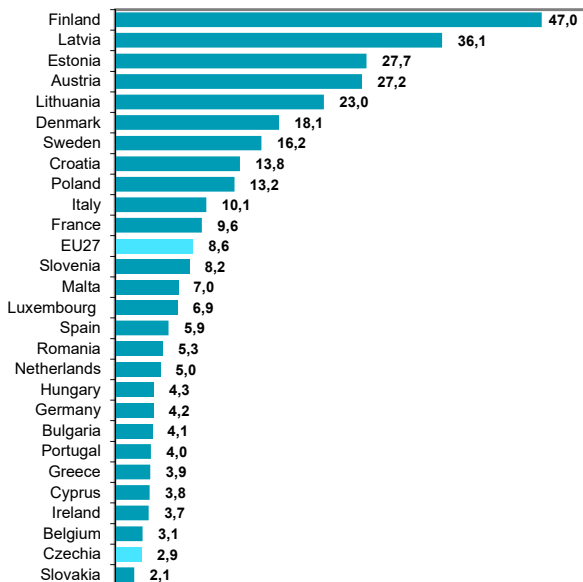


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**Figure A32 Mobile voice and data broadband subscriptions in EU countries; 2020 (per 100 inhabitants)**



**Figure A33 Monthly mobile broadband internet traffic in EU countries (GB per 1 inhabitant)**



Source: International Telecommunication Union

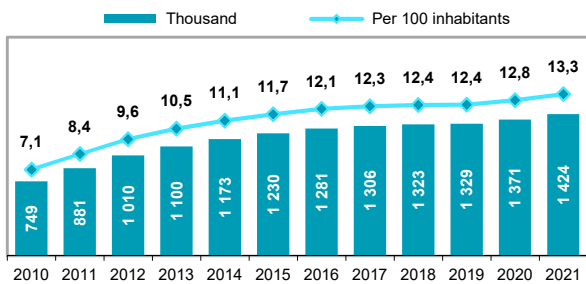
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**Table A9 Domains under Top Level Domain .CZ in Czechia**

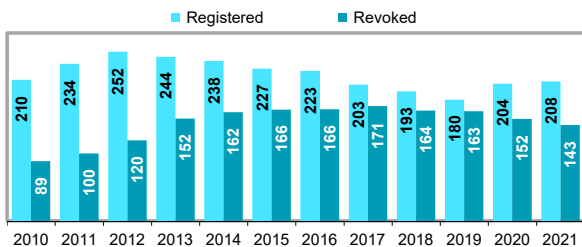
	Thousand		
	2019	2020	2021
<b>Total</b>	<b>1 329</b>	<b>1 371</b>	<b>1 424</b>
domains protected by DNSSEC*	787	829	848
<b>Registrant's country</b>			
Czechia	1 234	1 273	1 307
Slovakia	23	24	27
Germany	16	15	14
United States of America	9	10	13
other countries	46	49	63

\* Further information can be found at: [www.dnssec.cz](http://www.dnssec.cz).

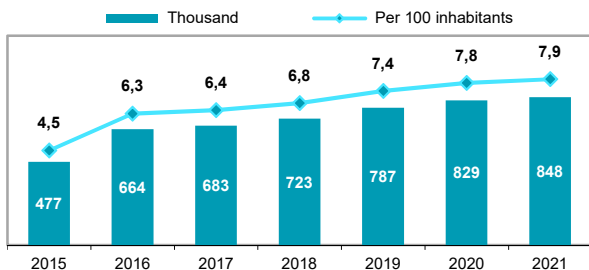
**Figure A34 Domains under Top Level Domain .CZ**



**Figure A35 Registered and revoked .CZ domains (thousand)**



**Figure A36 Domains .CZ protected by DNSSEC**



Source: CZ.NIC and CZSO own calculations