

The State of the Internet and Digital Rights in Czech Republic (2019–2025)

The Czech Republic, located in the heart of Europe, is an interesting example of a country with a high level of internet penetration and a developed digital economy. However, behind the facade of technological progress lie complex processes that determine the future of digital rights and freedoms. This report offers an in-depth analysis of the state of the internet environment in Czechia for the period from 2019 to 2025, examining not only technical aspects but also key legislative and social trends shaping citizens' digital lives.

The document explores in detail the structure of internet governance, from the national domain to the activities of key regulators. Particular attention is paid to legislation regulating online space: how authorities combat undesirable content, what blocking procedures exist, and how the law interprets freedom of speech on the internet. The report sheds light on data retention practices, the level of state surveillance, and the protection of personal information, creating a complete picture of the balance between security and privacy in the country.

This analysis will be useful for anyone interested not only in the technical side of network development but also in the complex interplay of technologies, law, and society. It helps understand the challenges facing a modern European state in the digital era and the precedents being set in Czechia that may influence the entire region. The report invites the reader to a detailed study of how digital rights are implemented and protected in practice in one of the most developed countries in Central Europe.

Disclaimer: This document was partially generated using several large language models (LLMs). The information presented is based on the analysis and synthesis of data from the specified sources; however, the process of structuring, summarising, and presenting it was carried out with the help of artificial intelligence technologies. It is recommended to use this text as a starting point for further research and to critically verify critically important data against primary sources.

The State of the Internet and Digital Rights in Czech Republic (2019–2025)	1
1. General Information	3
1.1. Geographical Location	3
1.2. Population	3
1.3. Gross Domestic Product (GDP)	4
1.4. Main Economic Characteristics	5
1.5. General Political Situation	6
2. Internet	7
2.1. National Domain	7
2.2. Number of Users	8
2.2.1. Fixed Internet	9
2.2.2. Mobile Internet	11
2.3. Internet Access Speed and Quality of Services Provided	13
2.4. Development of Providers and Autonomous Systems	14
2.5. IPv6 Penetration	18
3. Internet Legislation	23
3.1. Principles of Internet Governance	23
3.1.1. Regulation	23
3.1.2. Regulatory Authorities and Responsible Persons	24
3.2. Market Monopolisation	25
3.3. Internet Shutdowns on Government Orders	26
3.4. Legislation on "Words on the Internet"	26
3.5. Legislation on Internet Blocking	27
3.5.1. Legislation	27
3.5.2. Blocking Procedures	28
3.5.3. Registries of Blocked Internet Resources	29
3.5.4. Development of Blocking	30
4. Human Rights Violations on the Internet	32
4.1. Internet Shutdowns on Government Orders	32
4.2. Criminalization of Statements on the Internet	32
4.3. Persecution of Media and NGOs	33
5. Civil Society in the Field of Internet Governance	34
5.1. Organizations	34
5.2. VPN and Blocking Circumvention Tools	35
5.2.1. Status of VPN Services	36
5.2.2. Number of VPN Users	36
5.2.3. Cases of Persecution for VPN Use	38
5.2.4. Monitoring of Blocking	38
6. Conclusion	40
Sources	42

1. General Information

1.1. Geographical Location

The Czech Republic is a landlocked state located in Central Europe. It borders Germany to the west (810 km), Poland to the north (762 km), Austria to the south (466 km), and Slovakia to the east (265 km).¹ The total area of the country is 78,866 sq. km.¹ The terrain of Czechia is diverse and includes plains (4.5% of the territory), hills (50.1%), highlands (33.9%), and mountains (11.6%).¹ This Central European geographical position has historically played and continues to play a significant role in the country's political, economic, and cultural development. This position also influences the development of its transit telecommunication networks, and proximity to developed European Union countries such as Germany and Austria contributes to economic integration and technological exchange. The lack of direct access to the sea means that the country's international internet connectivity depends on overland cable systems passing through neighbouring states, which can affect the cost and resilience of international internet traffic.

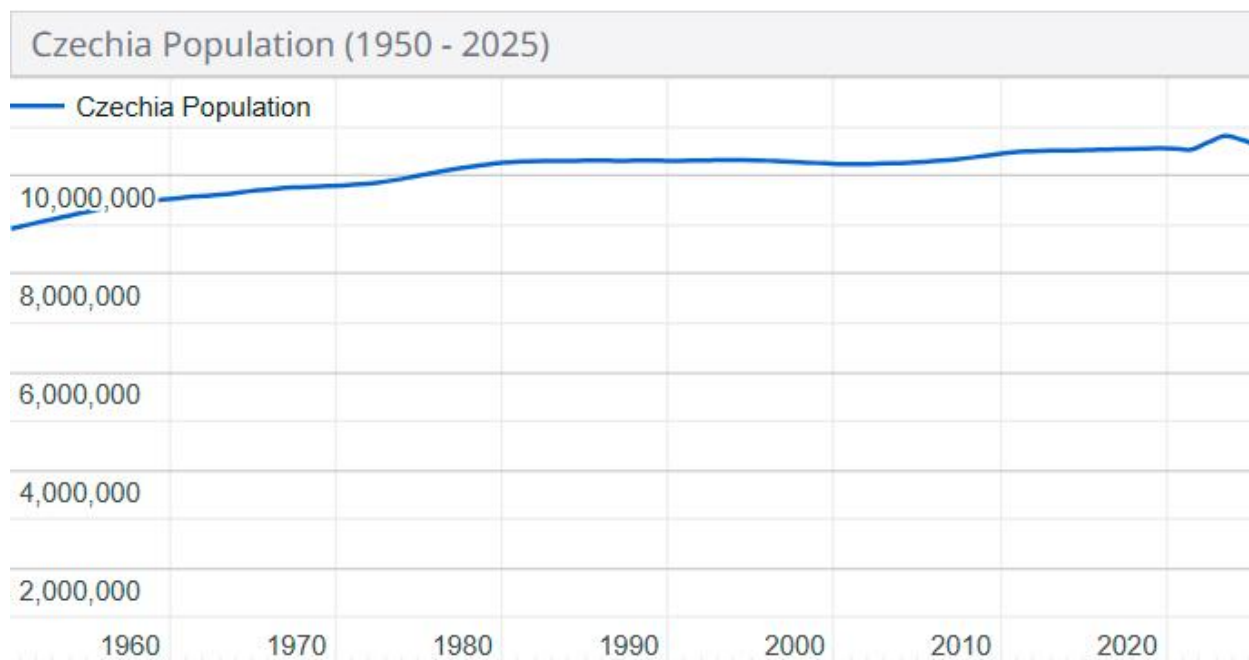
1.2. Population

As of the end of 2023, the population of the Czech Republic reached almost 10.901 million people, the highest figure since the end of World War II.³ Notably, since 2019, population growth has been driven solely by international migration.³ According to the Czech Statistical Office (ČSÚ), by the end of 2024, the population grew to 10.91 million people, also due to migration, against the backdrop of a historic low in births.⁴ (Czech: "Česko má nejvíce obyvatel od druhé světové války. Počet narozených dětí je na historickém minimu. Přírůstek zajistila jen zahraniční migrace." Translation: "Czechia has the largest number of inhabitants since World War II. The number of births is at a historic low. Growth was ensured only by foreign migration.")

The share of urban population in Czechia is significant; estimates suggest it will be around 75% in 2025.⁵ At the same time, population ageing is observed: the share of citizens aged 65 and older was 20.5% at the end of 2023³ and 21.2% at the beginning of 2025.⁷ It is projected that by the middle of the 21st century, this share could grow to 29%.³ The average age of the population at the end of 2023 was 42.8 years³, and the median age is projected to be 43.8 years in 2025.⁵ These demographic trends — population ageing and dependence on migration — create long-term challenges for public policy, including the need to adapt digital services for the elderly and integrate migrants into digital society. The growing number of migrants may require the provision of public online services and information resources in multiple languages, as well as special

programmes to improve digital literacy. Increasing the share of elderly population highlights the issue of age-related digital divide and the need to support this group in mastering technologies.

Graph 1: Dynamics of the Population of Czechia (1950–2025)



Source: *worldometers.info*

This graph clearly demonstrates demographic trends, including the impact of migration (particularly noticeable in 2022–2023⁸) and population ageing. These data are an important context for analysing internet penetration and use, as well as for understanding the target audience of digital services and potential digital divide problems.

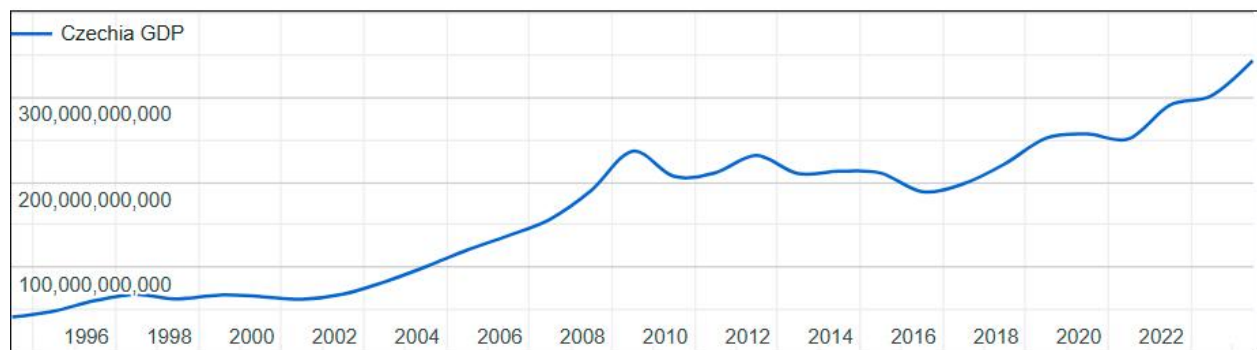
1.3. Gross Domestic Product (GDP)

The economy of the Czech Republic is characterised as a developed, export-oriented social market economy, based on the services sector, industrial production, and innovation. The country maintains a high level of social welfare and adheres to the European social model.¹² As a member of the European Union, Czechia is integrated into the Single European Market but retains its national currency — the Czech koruna.¹² Czechia is also a member of the Organisation for Economic Co-operation and Development (OECD).¹²

In recent years, Czech economic growth has been supported by domestic demand, increased tax revenues, and exports.¹³ However, the COVID-19 pandemic had a significant negative impact, leading to a 5.3% GDP contraction in 2020.¹⁴ The economic recovery process was slow, and Czechia lagged behind several other EU countries in GDP growth rates.¹³ The economic situation was further complicated by a sharp rise in energy prices and high inflation, partly triggered by geopolitical tensions.¹³ Such GDP volatility and dependence on external markets can influence the volume of public and private investment in digital infrastructure development and innovation, as well as the affordability of digital services for the population.

Graph 2: Dynamics of Nominal GDP of Czechia (1993–2023)

Czech Republic (Czechia) GDP (Nominal, \$USD) 1993-2023



Source: *worldometers.info*

This graph reflects the country's economic dynamics, including periods of decline and recovery, which is key macroeconomic context for assessing the investment climate in ICT, population purchasing power, and overall digital economy development.

1.4. Main Economic Characteristics

The Czech economy experienced a downturn in 2020 (-5.3% according to data¹⁴), caused by the COVID-19 pandemic, followed by recovery in 2021 (growth of 4.0%¹⁴). However, in 2022–2023, growth rates slowed (2.8% in 2022 and -0.1% in 2023¹⁸), linked to the consequences of the energy crisis and high inflation.¹³ Forecasts for 2024–2025 indicate moderate growth (about 1.1% in 2024 and 1.6–2.3% in 2025¹⁸). The most important sectors are services, accounting for about 61% of GDP, and industry (37% of GDP).¹² Key industrial segments include high-tech engineering, electronics, automotive manufacturing (which is pivotal for the economy²²), metallurgy, and

chemical industry.¹² In the services sector, scientific research and development (R&D), information and communication technologies (ICT), and software development stand out.¹²

Despite its developed economy status, Czechia faces several structural problems. One key issue is the focus on production with relatively low added value and dependence on foreign investment, leading to significant profit outflows abroad.¹² This "assembly shop" model limits domestic potential for developing advanced technologies and innovation. The government's development strategy recognises this problem and aims to support high-value-added sectors such as semiconductors and digital technologies.²⁶ Other structural challenges include slowing productivity growth, high energy prices, bureaucratic burden on business, and insufficient state support for innovation.¹⁶ There is also a shortage of skilled labour despite historically low unemployment.¹² This labour shortage, especially in high-tech sectors, can hinder the transition to a knowledge economy and digitalisation. Strong export dependence, particularly on the German market, makes the Czech economy vulnerable to external economic shocks and stagnation among main trading partners.¹³

1.5. General Political Situation

The Czech Republic is a parliamentary republic²⁷ and unitary state with a multi-party system of representative democracy.²⁸ The country has been a member of NATO since 1999 and the European Union since 2004.² The political system is based on the principle of separation of powers into executive, legislative, and judicial branches.²⁸

The executive power is represented by the President, who is the head of state and elected by direct popular vote, and the Government headed by the Prime Minister. The Government is the highest body of executive power and is accountable to the Chamber of Deputies of the Parliament.² The legislative power belongs to the bicameral Parliament, consisting of the Chamber of Deputies (200 members elected for a four-year term by proportional system) and the Senate (81 senators elected by majority system for a six-year term, with one-third renewed every two years).²⁸ The judicial system includes the Constitutional Court, the Supreme Court, the Supreme Administrative Court, as well as higher, regional, and district courts.²⁸ Following the 2021 parliamentary elections, the main political forces in the Chamber of Deputies were the SPOLU coalition (Civic Democratic Party, Christian and Democratic Union – Czechoslovak People's Party, TOP 09), the ANO movement, the "Pirates and Mayors" coalition (Czech Pirate Party and Mayors and Independents movement), and the "Freedom and Direct Democracy" party (SPD).²⁸

Administratively, Czechia is divided into 14 self-governing regions (statistical unit NUTS 3). Lower levels include districts (okresy), which currently serve mainly statistical and territorial purposes for some state bodies, municipalities with extended powers (obce s rozšířenou působností – ORP), and municipalities (obce).²⁹ The capital, Prague, has special status. For European statistics and EU subsidy distribution, the regions are grouped into 8 so-called cohesion regions (NUTS 2).²⁹

Czechia's membership in the European Union has a significant impact on national legislation, including in the area of internet regulation and digital rights. EU norms, such as the General Data Protection Regulation (GDPR), the Digital Services Act (DSA), and the Digital Markets Act (DMA), must be implemented into the Czech legal system or have direct effect. This forms the common framework for the country's digital policy. At the same time, the multi-party system typical of Czechia and the need to form coalition governments²⁸ can lead to more complex and lengthy processes for coordinating and adopting legislation related to the digital sphere. This can affect the speed of legislative response to rapidly changing technological realities and the nature of regulatory measures taken.

2. Internet

2.1. National Domain

The national top-level domain (ccTLD) for the Czech Republic is .cz.³¹ The domain is administered by the CZ.NIC association, z.s.p.o.³¹ The .cz domain was activated on 13 January 1993, after the dissolution of Czechoslovakia, replacing the previously used .cs domain for the unified state.³¹ (Czech: ".cz doména vznikla v lednu 1993 po rozpadu Československa."³³)

Registration of domain names in the .cz zone is available to both individuals and legal entities without significant residency restrictions.³² (Czech: "Majitelem domény.cz se může stát jakákoliv fyzická i právnická osoba bez omezení."³³) However, legal entities must provide a tax identification number.³¹ Domain names are registered directly at the second level.³¹ The maximum length of a domain name is 63 characters; only Latin alphanumeric characters and hyphens are allowed, with hyphens not permitted at the beginning or end of the name or consecutively.³¹ The use of diacritics in .cz domain names is not permitted, unlike, for example, the pan-European .eu domain.³¹ Registration of .cz domains is carried out through accredited registrars; CZ.NIC does not provide direct registration services to end users.³³ The CZ.NIC association actively implements and supports security technologies, in particular DNSSEC (Domain Name System Security Extensions), to protect domain names from spoofing and other attacks.³²

The history of the .cz domain zone is marked by significant growth in registrations. By the end of 2011, over 850,000 domains were registered, and in 2012 the number exceeded one million.³¹ As of 14 December 2022, there were 1,464,124 registered domains in the .cz zone.³¹ Initially, the cost of registration and renewal of a .cz domain was relatively high (up to 2,000 Czech koruna), but from October 2007 the price was significantly reduced, making .cz one of the most affordable national domains in the world. Nevertheless, in 2019 the domain fee was increased for the first time in a long period.³³ The procedure after domain registration expiry provides for a 30-day period of full functioning, after which the domain is deactivated (excluded from DNS servers), and after another 30 days, if not renewed, it is withdrawn from the owner and put up for auction.³³ Active management of the .cz domain by CZ.NIC, including the implementation of security technologies and development of the network of accredited registrars, contributes to the stability and security of the national domain space. The growth in the number of registered domains reflects the high degree of internet penetration and the activity of Czech users and businesses in the online environment.

2.2. Number of Users

The level of internet penetration in Czechia is high. According to DataReportal, as of January 2025, there were 10.1 million internet users in the country, corresponding to a penetration rate of 94.2% of the total population.⁷ At the same time, the number of internet users in Czechia decreased by 105 thousand (-1.0%) between January 2024 and January 2025.⁷ This means that about 616 thousand people (5.8% of the population) did not use the internet at the beginning of 2025.⁷

The Czech Statistical Office (ČSÚ) also provides data on internet users. In 2019, 81% of Czech residents aged 16+ used the internet.³⁶ By 2021, this share grew to 83%, amounting to 7.25 million people aged 16+.³⁷ In 2023, according to ČSÚ, 86% of persons aged 16+ used the internet³⁸, and in 2024 this figure reached 87.7%.³⁹ According to the portal MAM.cz, citing the agency LCG New Media (July 2024), already 90% of Czechs use the internet.⁴⁰ Aggregated data from Kalkulator.cz indicate 7.8 million users in 2020 and 8 million in 2023.⁴¹ The World Bank, based on ITU data, reports 86% internet users of the total population in 2023.⁴²

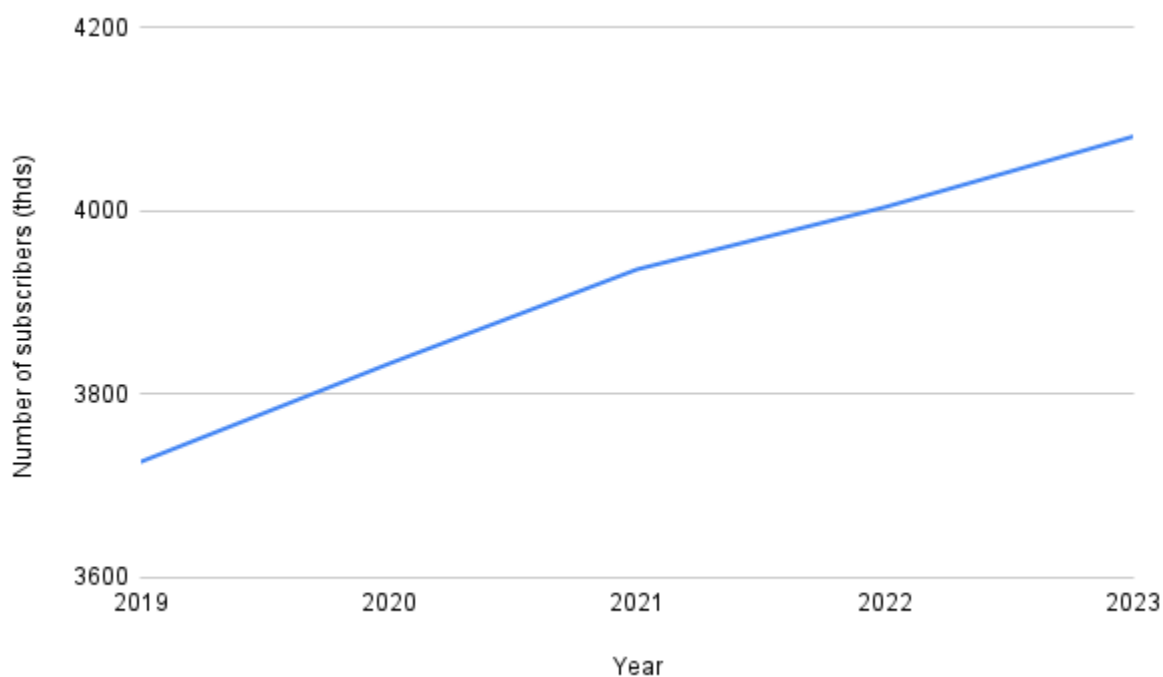
The high level of internet penetration indicates a developed digital infrastructure and broad population engagement in online activities. Some discrepancy in data between sources (for example, DataReportal shows a slight decrease in the total number of users in 2024–2025, while ČSÚ and MAM.cz indicate continued growth in penetration among the adult population) may be due to differences in data collection methodologies (e.g., age group coverage, definition of "internet user") or time lags in publishing statistics. The decrease noted by DataReportal may also

reflect demographic changes, such as the outflow of some migrants who arrived in previous years. Nevertheless, the overall picture points to near-complete market saturation for internet access in most age groups, with a small remaining "digital divide" likely concentrated among the elderly and other vulnerable groups.

2.2.1. Fixed Internet

In 2023, there were 4.081 million fixed (stationary) internet connections in the Czech Republic.⁴³ This figure demonstrates consistent growth in recent years. There is also qualitative improvement in connections: the number of subscribers with access to speeds of 100 Mbit/s and higher increased from 800 thousand in 2018 to 1.8 million in 2023.⁴³ The main technologies for wired fixed access are DSL (including FTTC – fibre to the cabinet), fibre-optic networks directly to the building or apartment (FTTH/B), and cable television networks (CATV). Fixed wireless access is also widespread, mainly via Wi-Fi and fixed LTE/5G technologies.⁴³ The most dynamic growth is shown by fibre-optic connections.

The fixed internet market in Czechia is characterised by a high degree of competition. According to the Czech Telecommunication Office (ČTÚ), there are 1,823 internet access providers operating in the country.⁴⁴ Historically, a significant market share, especially in household connections, has been held by hundreds of small regional operators. This resulted from the slow response of the former monopolist to growing demand for affordable internet in the early 2000s.⁴⁵ As a result, by 2019 the share of the former monopolist (today the infrastructure company CETIN and its wholesale partners, including O2 Czech Republic) in the fixed connections market had fallen to about a quarter, while small operators accounted for almost half the market.⁴⁵ The remaining share was divided between UPC (later acquired by Vodafone) and operators providing fixed access via mobile LTE networks.⁴⁵ Recent events, such as O2 Czech Republic's acquisition of Nordic Telecom in Q3 2024⁴⁶, may indicate a trend towards market consolidation.

Graph 3: Dynamics of the Number of Fixed Broadband Subscribers in Czechia (2019–2023)

Source: Czech Statistical Office (ČSÚ).

The steady growth in the number of fixed connections, especially among households, indicates that, despite the rapid development of mobile internet, fixed access remains in demand. This is likely due to the need for higher speeds and connection stability required for home entertainment, remote work, and online education.

Table 1: Largest Fixed Internet Providers in Czechia

Provider Name	Website	Market Share/Note	Source(s)
O2 Czech Republic	https://www.o2.cz/	Significant share, especially with CETIN infrastructure and Nordic Telecom acquisition	45
Vodafone Czech Republic	https://www.vodafone.cz/	Significant share, strengthened by UPC Czech Republic acquisition	45
T-Mobile Czech Republic	https://www.t-mobile.cz/	Significant share in telecommunications overall	47
CETIN (infrastructure operator)	https://www.cetin.cz/	Largest owner of telecommunications infrastructure, provides wholesale services	45
PODA a.s.	https://www.poda.cz/	Notable regional provider	47
Numerous small regional providers	N/A	Collectively held about half the household connections market in 2019	45

Note: Exact current market shares for each fixed internet provider are absent in the provided materials. The market structure has historically been fragmented.

The unique structure of the Czech fixed internet market with a large number of small regional providers has fostered competition and the development of modern technologies such as FTTH/B, driven primarily by these small players.⁴⁵ However, consolidation trends, such as O2's acquisition of Nordic Telecom in 2024⁴⁶, could change this dynamic in the future. The growth in the number of high-speed connections (≥ 100 Mbit/s)⁴³ indicates infrastructure modernisation and growing demand for quality internet, which is important for the development of the digital economy.

2.2.2. Mobile Internet

Mobile internet has become widespread in Czechia. As of early 2025, there were 14.8 million active mobile connections in the country, amounting to 139% of the total population.⁷ Such a high figure indicates the prevalence of multiple SIM cards per subscriber or the use of SIM cards in M2M

devices (machine-to-machine). The vast majority (96.6%) of mobile connections in Czechia are broadband, i.e., using 3G, 4G, or 5G technologies.⁷ The use of the internet via mobile phone among the population aged 16+ shows steady growth: from 64.5% in 2019 to 80.9% in 2024.³⁹ In absolute terms, in 2023 almost eight out of ten people aged 16+ (78.3%) used the internet on their mobile phone.³⁸

Despite the widespread adoption of mobile internet, 2023 data show that for internet access from smartphones, Wi-Fi (76% of users) is used slightly more often than mobile data (70% of users).⁵⁰ This may be related to the cost of mobile traffic or indoor coverage quality. The mobile communications market in Czechia is highly concentrated: dominated by three main operators — T-Mobile, O2, and Vodafone, which accounted for over 92% of active SIM cards in 2022.⁵¹

Graph 4: Dynamics of the Number of Mobile Broadband Subscribers in Czechia (2019–2024)

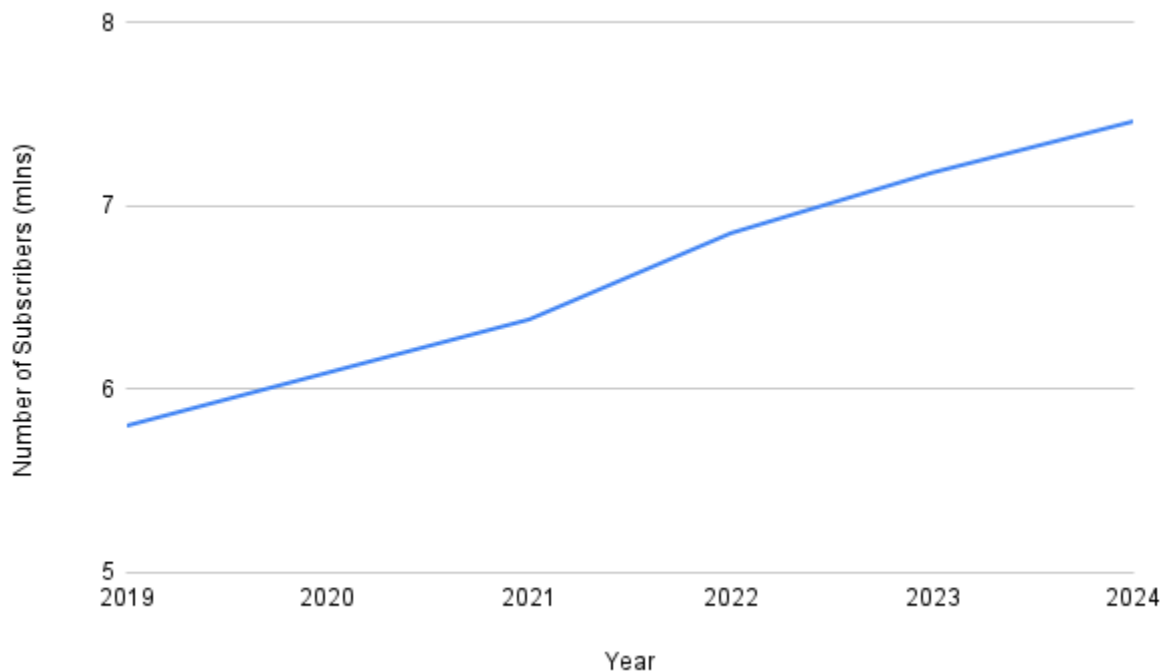


Table 2: Dynamics of the Number of Mobile Internet Users in Czechia (% of Persons Aged 16+ Using the Internet on a Mobile Phone)

Year	Share of Users (%)	Absolute Number (million, estimated)*	Data Source on Share
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2019	64.5%	5.80	39
2020	67.5%	6.09	39
2021	72.1%	6.38	39
2022	76.7%	6.85	39
2023	78.3%	7.18	38
2024	80.9%	7.46	39

Note: Absolute numbers of mobile internet users are estimated. They were obtained by multiplying the percentage share of users (according to ČSÚ data for persons aged 16+) by the total population aged 16+ years. Data on the population aged 16+ for each year were calculated by subtracting the population aged 0–14 years³ from the total population (Table 1.1).

The rapid growth in mobile internet use emphasises the importance of mobile platforms for accessing information and services in Czechia.

Table 3: Largest Mobile Internet Providers in Czechia (Market Shares by Active SIM Cards, 2022)

Provider Name	Website	Market Share (%)	Source
T-Mobile Czech Republic	https://www.t-mobile.cz/	38.5	51
O2 Czech Republic	https://www.o2.cz/	29.1	51
Vodafone Czech Republic	https://www.vodafone.cz/	25.2	51
Alternative operators	N/A	7.2	51

*Source: ČTÚ data for 2022, cited in.*⁵¹

The high concentration of the mobile market around the "big three" operators may be one of the factors influencing the level of prices for mobile services. Reports indicate that prices for mobile tariffs in Czechia are among the highest in the European Union.⁵¹ This, in turn, may explain why

users, despite high mobile internet penetration, continue to actively use Wi-Fi to save mobile traffic.⁵⁰

2.3. Internet Access Speed and Quality of Services Provided

Internet access speeds in Czechia show positive dynamics in both mobile and fixed segments. According to Ookla Speedtest Global Index for January 2025, the median download speed for mobile internet was 86.32 Mbit/s, 39.4% higher than a year earlier. For fixed internet, the median download speed reached 77.35 Mbit/s, showing a 19.9% growth over the year.⁷ Other Ookla data for February 2025 indicate a median mobile internet speed of 103.31 Mbit/s (38th place worldwide) and fixed internet of 79.3 Mbit/s (75th place worldwide).⁵² These figures confirm significant progress, especially in the mobile segment, likely due to active 5G network deployment. In particular, based on Q3–Q4 2024 results, operator O2 was recognised as the leader in 5G mobile network speed with a Speed Score of 141.18 and a median download speed of 146.99 Mbit/s.⁵³

Despite the growth, Czechia's position in global fixed internet speed rankings remains average. For example, Ookla data for June 2023 showed a median download speed for fixed internet of 59 Mbit/s, placing the country 75th worldwide.⁵⁴ Similar data were reported in August 2023.⁵⁵ This may indicate that while Czechia is improving its networks, other countries may be developing even faster, or there are significant internal disparities in access quality, for example, between urban and rural areas or different access technologies.

The quality of internet services is generally improving due to infrastructure modernisation. The number of fixed connections with speeds of 100 Mbit/s and higher grew from 800 thousand in 2018 to 1.8 million in 2023.⁴³ However, as noted earlier, high energy prices and the need for continuous investment in infrastructure remain challenges for providers.²² The development of very high capacity networks (VHCN) is a priority for both the EU and Czechia but requires significant capital investment.

Sources of internet speed data:

1. Ookla Speedtest Global Index (<https://www.speedtest.net/global-index/czech-republic>)⁵²
2. DataReportal (cites Ookla) (<https://datareportal.com/reports/digital-2025-czechia>)⁷
3. ČSÚ reports on ICT (<https://csu.gov.cz/digital-infrastructure>)⁴³

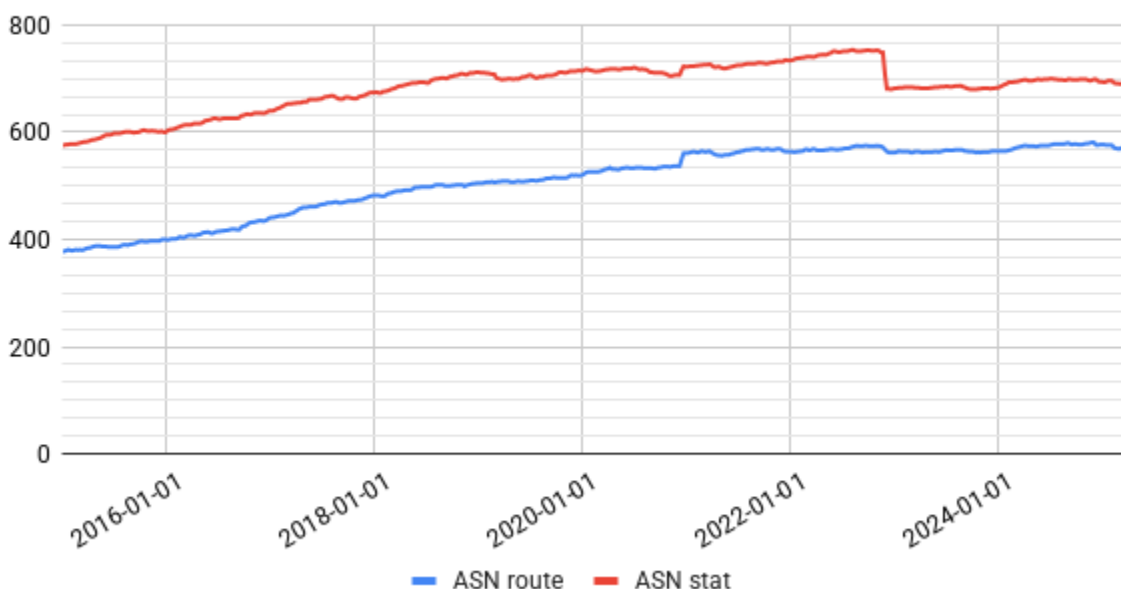
2.4. Development of Providers and Autonomous Systems

The internet market in the Czech Republic is characterised as developed and competitive, with the participation of a large number of providers, including many small and medium-sized regional operators, especially in the fixed access sector.⁴⁵ This implies a significant and potentially growing number of Autonomous Systems (AS), which are unique identifiers of networks on the internet. Growth in the number of AS typically indicates the development of internet infrastructure, an increase in the number of independent networks, and diversification of traffic routing. According to RIPE NCC data for 2017, there were 413 Local Internet Registries (LIR) registered in Czechia, exceeding those in neighbouring countries such as Austria, Hungary, or Slovakia.⁵⁷ LIRs are organisations that receive blocks of IP addresses and AS numbers from regional internet registries such as RIPE NCC and are mostly internet service providers.

The high degree of decentralisation and competition at the infrastructure access level, confirmed by the large number of LIRs and references to "numerous small providers" in RIPE NCC reports⁵⁶, should correlate with a relatively large and likely growing number of Autonomous Systems. This contributes to the resilience of the internet infrastructure and diversity of internet traffic routes. However, such a large number of small operators can create certain challenges for state regulators in terms of coordinating efforts to ensure national cybersecurity or implement unified technological standards.

Graph 5: Dynamics of Autonomous Systems in Czechia (2015–2025)

ASN Stat



The graph clearly demonstrates steady and stable growth in the number of autonomous systems in Czechia from 2015 to 2025. Both the total number of registered AS (ASN stat) and the number of AS announcing their routes on the internet (ASN route) show positive dynamics. This indicates ongoing development of internet infrastructure, the emergence of new providers, hosting companies, and large corporate networks.

A small dip in the "ASN stat" curve around 2023 may indicate consolidation processes in the market, where smaller operators were absorbed by larger ones, or administrative cleanup of the database of registered but inactive AS. Despite this, the overall growth trend persisted. The gap between the total number of AS (693) and the number of routed ones (579) is normal: some systems may be registered but not yet active, used for internal purposes, or in the setup process.

Comparison with Other Countries in the Region

The most indicative is the number of autonomous systems per capita, which reflects the degree of internet penetration and decentralisation in the country.

In **Czechia**, with a population of about 10.88 million and 693 autonomous systems, there is approximately one AS per 15,700 residents. This is an extremely high rate, indicating a high degree

of competition and development of the internet market. A large number of independent networks indicates a mature and decentralised internet structure in the country.

For comparison, in neighbouring countries:

- **Germany**, with a population of about 83.2 million and 2,878 AS, one AS per approximately 28,900 residents. Despite more AS in absolute terms, the per capita density is almost twice lower than in Czechia.
- **Poland**, with a population of 36.5 million and 2,591 AS, one AS per about 14,100 residents. This rate is very close to the Czech one, indicating a high level of development and competition on the Polish internet market.
- **Austria**, with a population of 9.2 million and 672 AS, one AS per approximately 13,700 residents. This is the highest rate in the region, even slightly higher than Czechia and Poland, indicating a very mature and fragmented market.
- **Slovakia**, with a population of 5.47 million and approximately 213–229 AS, one AS per about 24,800 residents. The density of AS here is noticeably lower than among Visegrád Group neighbours and Austria, which may indicate a lower degree of decentralisation of internet infrastructure.

Overall Conclusion

Czechia, along with Poland and Austria, demonstrates one of the highest regional rates of autonomous systems per capita. This reflects a highly developed internet ecosystem, healthy competition among providers, and broad availability of network infrastructure. The steady growth shown on the graph confirms that the Czech internet segment continues to actively develop and grow in complexity.

Table 4: Top 10 Largest Autonomous Systems in Czechia

#	Number of AS	Name	Web Site	Foreign neighbour count	Local neighbour count	Total neighbour count	Foreign neighbours share
1	29208	Dial Telecom	http://www.quantcom.cz	697	54	751	92,8%
2	61973	Netassist		174	2	176	98,9%
3	39392	SuperNetwork	https://www.sh.cz	45	80	125	36,0%
4	16019	Vodafone Czech Republic	http://www.vodafone.cz	18	95	113	15,9%

5	28725	CETIN	http://www.cetin.cz	78	28	106	73,6%
6	47232	ISPAlliance	http://www.ispalliance.cz	37	64	101	36,6%
7	2852	CESNET	https://www.cesnet.cz	75	19	94	79,8%
8	208414	WEDOS Global	https://www.wedos.global/	86	2	88	97,7%
9	49121	Infinity Telecom	https://in8inity.com	82	3	85	96,5%
10	15935	ha-vel internet s.r.o.	https://www.ha-vel.cz	57	22	79	72,2%

The table shows that the top Czech autonomous systems have very different profiles and peering (traffic exchange) strategies.

- **International transit operators** such as Dial Telecom (AS29208), Netassist (AS61973), WEDOS Global (AS208414), and Infinity Telecom (AS49121) have a very high share of foreign neighbours (92.8%, 98.9%, 97.7%, and 96.5% respectively). These are classic transit providers whose main business model is providing global internet connectivity to other, smaller networks. They have minimal local peers, which indicates a focus on international rather than domestic traffic exchange.
- **Large national providers** such as Vodafone (AS16019) and ISPAlliance (AS47232) have a completely opposite picture. They have a much lower share of foreign peers (15.9% and 36.6%) but a large number of local peers (95 and 64 peers). This indicates deep integration into the Czech internet ecosystem. Their main task is to provide the conclusion the table and text.
- **Infrastructure and Content Networks:** CETIN (AS28725) and CESNET (AS2852) are a special case. CETIN is the largest telecommunications infrastructure company in the country, which explains its large number of both international (78) and local (28) peers. The 73.6% share of international connections suggests a balanced strategy. CESNET is a national research and education network. Its high share of international connections (79.8%) is driven by the need to exchange scientific and educational traffic with similar networks around the world.
- **Hosting and Content:** The SuperNetwork (AS39392) and ha-vel internet (AS15935) networks also exhibit a mixed but balanced peering policy. This is typical for hosting providers and

content generators, which value good connections both domestically for fast content delivery to local users and internationally.

Overall Conclusion

The top-10 autonomous systems of Czechia demonstrates a mature and diversified market. There is no monopoly of one type of player. There are powerful international transit operators providing the country's connection to the world, as well as strong national providers focused on the domestic market. This healthy competition and diversity of business models are key factors explaining the high density of autonomous systems per capita, as discussed earlier.

2.5. IPv6 Penetration

The transition to Internet Protocol version 6 (IPv6) is a global necessity due to the exhaustion of IPv4 address space.⁶¹ IPv6 implementation in the Czech Republic is gradual, but the country appears to be lagging behind several leading European and global leaders in this process. According to Google, as of early 2024–2022025 the IPv6 adoption rate in Czechia was about 30.44%⁶², while the global figure was approaching 43–47%.⁶¹ For comparison, in countries such as France, Germany, countries such as France, Germany, and India, IPv6 adoption exceeds 70%.⁶¹ APNIC Labs data also indicate a moderate level of implementation. For example, in one of the tables (date unspecified, but relatively recent) for Czechia has a "V6 Use ratio" of 12.99%⁶⁴, which is lower than Google's estimates. The RIPE NCC report (June 2023) also noted low IPv6 adoption rates in Central Europe (including Czechia, except Hungary) despite the IPv4 address shortage.⁵⁶.

Different internet providers in Czechia demonstrate varying levels of IPv6 implementation. Major operators such as O2 Czech Republic, Vodafone Czech Republic, and T-Mobile Czech Republic have deployed IPv6 for their customers. For example, in June 2022, O2 Czech Republic had an IPv6 implementation level of 53.88%, while T-Mobile Czech Republic – 10.38%.⁶⁵ Statistics from ipv6-test.com (November 2023) shows that for some providers, including O2 and Vodafone, a significant share of tests show IPv6 by default.⁶⁷ Nevertheless, the overall country indicators suggest that the transition to the new protocol is slower than necessary for ensuring future internet growth and the adoption of new technologies such as the Internet of Things (IoT). Slow IPv6 implementation could, in the long term, create obstacles to innovation and the full integration of the Czech internet segment into the global next-generation network.

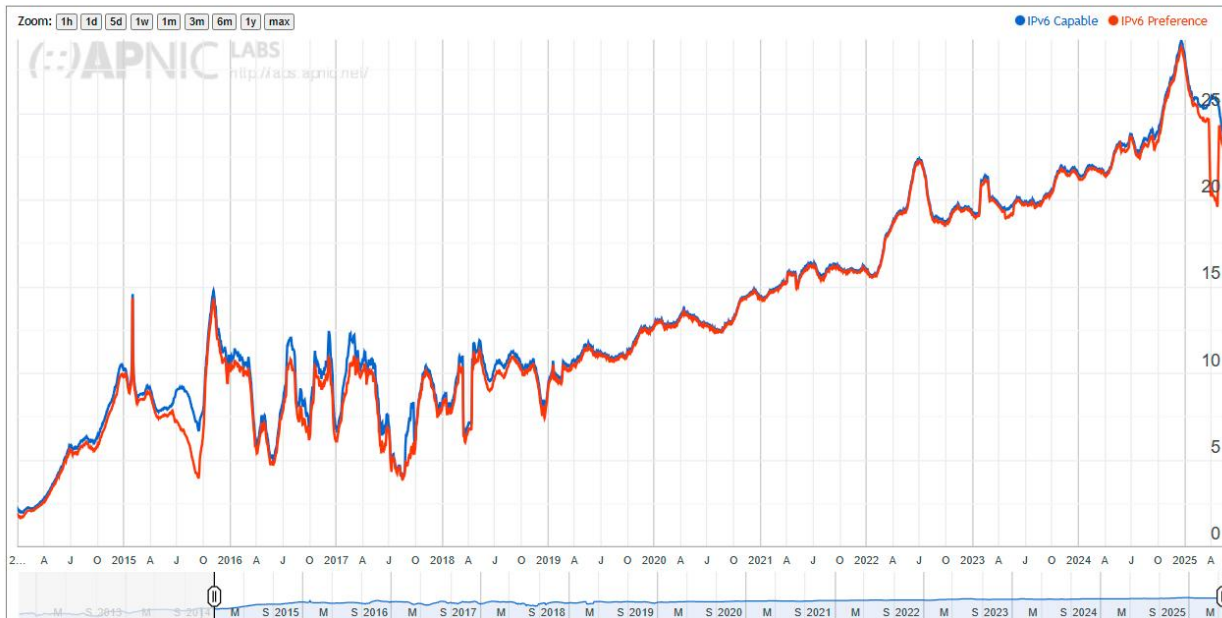
Graph 6: Dynamics of IPv6 Adoption in Czechia (2015–2025)

Source: stats.llabs.apnic.net⁶⁴

The unevenness of IPv6 implementation among providers and the overall lag behind leader countries indicate the need for more coordinated efforts at the national level to accelerate the transition to the new protocol.

Graph 2.6. Connectivity Index

Use of IPv6 for Czech Republic (CZ)



Source: *stats.labs.apnic.net*

To assess the level of integration of the internet segment, two key indicators are used, based on the analysis of pairwise connections (peering) between Autonomous Systems (AS).

- **Global Connectivity Index:** Total number of unique connections between each local AS and external (foreign) AS. Global Connectivity Index: The number of unique connections of each local AS with each external AS. Essentially, it measures how widely and diversely the internet segment is connected to the rest of the world. The higher the indicator, the more the country has "windows" to the global network.
- **Local Connectivity Index:** The number of unique connections between different local AS. It reflects the intensity and complexity of the domestic internet ecosystem, in particular the activity at internet exchange points (IXP). A high indicator indicates a developed internal ecosystem that allows efficient local traffic exchange, minimising delays and dependence on external channels for local traffic.

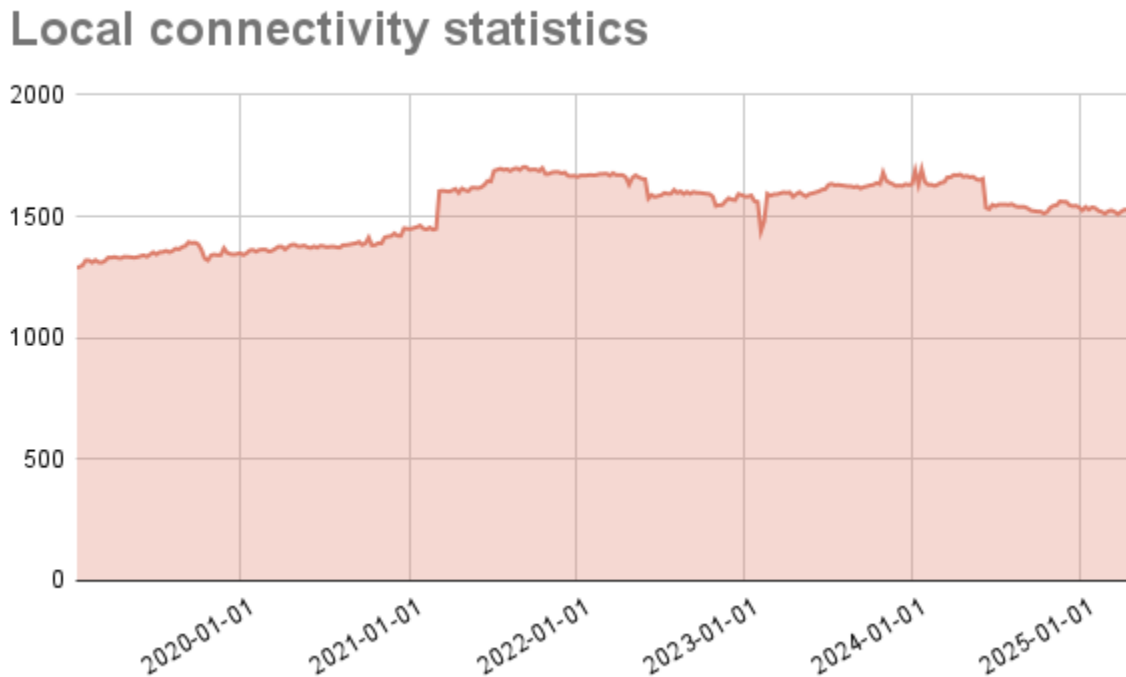
Analysis of the ratio of the two indices allows understanding the strategic orientation the national network: whether it is predominantly self-sufficient or deeply integrated into global infrastructure.

Graph 7: Dynamics of Global Connectivity of Autonomous Systems of Czechia (2019–2025)

Global connectivity statistics



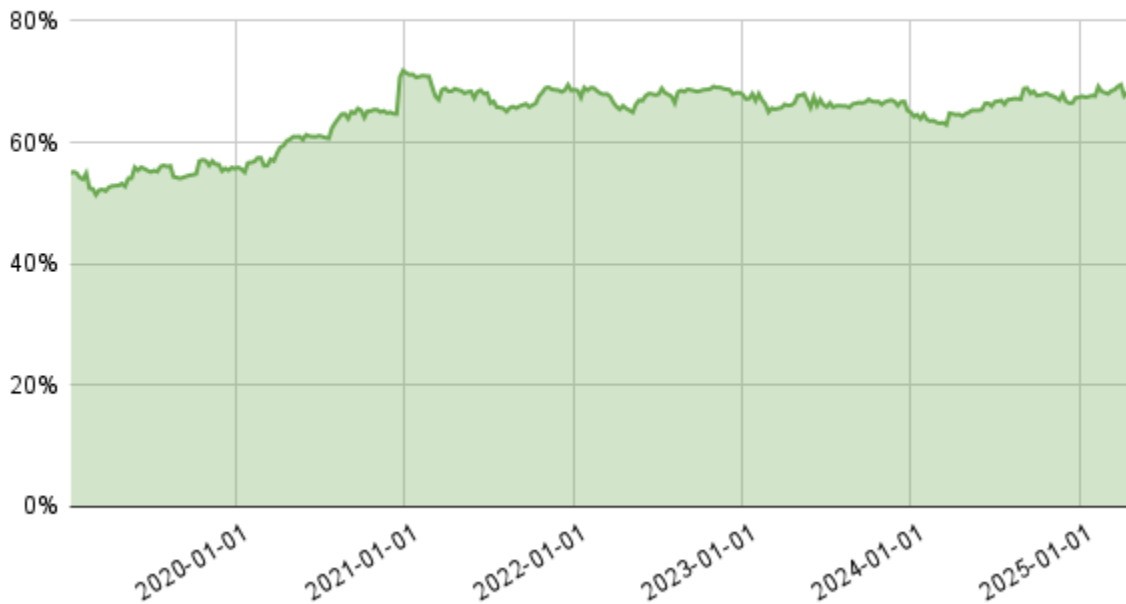
The graph shows the total number of unique connections of unique connections of Czech autonomous systems with foreign. We see significant growth from ~1500 connections at the beginning of 2020 to a peak of almost 4, the beginning of 2021. This jump indicates a sharp increase in the integration of the Czech internet into the global network. This was probably the emergence of new transit operators or expansion of peering policies of existing players, opening many new connections to the world. After the peak, the indicator stabilised at the level of 3,000–3,000–3,500 connections. The average number of foreign connections per Czech AS about 4.7 (3,300/693 AS). This solid indicator, confirming that Czech operators have diverse and numerous connections to global internet resources. Such diversification increases resilience and quality of access to foreign content for end users. This diversification increases resilience and quality of access to foreign content for end-users.

Graph 8: Dynamics of Local Connectivity of Autonomous Systems of Czechia (2019–2025)

This graph shows the number of unique connections of Czech autonomous systems. We see growth from the local connections of Czech AS. We see growth from ~1,300 in 2020 to the level of 1,500–1,600 from 2022. This growth indicates the development of the domestic traffic exchange in the domestic traffic in the local IXP, in particular the local traffic exchange, in particular the local IXP traffic. This growth indicates the development of domestic traffic exchange in the local IXP. The average number of local connections per Czech AS about 2.2. The average number of connections per AS about 2.2 (1,500 connections/693 AS). The average number of connections per AS about 2.2 (1,500 connections/693 AS). This means that operators are actively exchanging local traffic directly operators actively exchange local traffic, reducing the local traffic in the country. The developed local connectivity is an effective and the national infrastructure.

Graph 9: Dynamics the Ratio of Global and Local Connectivity of Autonomous Systems Czechia (2019–2025)

Total connectivity share



The graph shows the share of global connections in the total number of all connections in Czechia. At the beginning of 2020, the share of global connections. At the beginning of 2020 the share of global connections. In the first half of the beginning 2020 the share of global connections. This key indicator shows the strategic orientation of the Czech internet segment. This key indicator shows the strategic orientation of the Czech internet segment. This key indicator shows the strategic orientation of the Czech internet segment. Such a ratio unequivocally indicates that the Czech internet is deeply integrated into the global network. The priority is the expansion of international connections, rather than closing traffic within the country. Although local connectivity is well developed, international integration is the dominant characteristic of the Czech internet ecosystem. This provides users with excellent access to global resources and makes Czechia an attractive location for hosting content oriented towards international audiences.

3. Internet Legislation

3.1. Principles of Internet Governance

Internet governance in the Czech Republic is carried out within the framework of national legislation, which is largely harmonised with European Union norms. As an EU member state, Czechia is obliged to implement Union-wide directives and regulations concerning the digital sphere, such as the General Data Protection Regulation (GDPR), the Digital Services Act (DSA), and the Digital Markets Act (DMA). This creates a multi-level governance system in which national authorities act in coordination with European structures.

The key principles proclaimed in the context of internet governance are the support of network openness, ensuring competition in the telecommunications services market, protecting user rights, including the right to privacy and freedom of expression, as well as ensuring cybersecurity. However, the practical implementation of these principles may face various challenges, including the need to balance the interests of users, business, and the state, as well as adaptation to rapidly changing technologies.

3.1.1. Regulation

Internet regulation in Czechia covers a wide range of issues, including the licensing of provider activities, radio frequency spectrum management, quality assurance of communication services, ensuring the protection of personal data protection of personal data protection, the fight against cybercrime, the regulation of online content, and the protection of intellectual property rights. The main regulator in the field of electronic communications is the Czech Telecommunication Office (Český telekomunikační úřad – ČTÚ). The National Cyber and Information Security Agency (Národní úřad pro kybernetickou a informační bezpečnost – NÚKIB) deals with cybersecurity issues at the national level.⁷¹

The legislative base is constantly developing in response to new technological challenges and changes in European law. For example, in 2023 the migration of the Galileo system to a new level of security was discussed⁷¹. In addition, NÚKIB has started dealing with issues related to governmental satellite communications (GOVSATCOM) and secure communications within the

framework of European initiatives.⁷¹ These aspects demonstrate the comprehensive approach to regulation, where technical, legal, and security issues are closely interconnected.

3.1.2. Regulatory Authorities and Responsible Persons

The main bodies responsible for regulating the internet and related areas in the Czech Republic are:

1. Czech Telecommunication Office (Český telekomunikační úřad – ČTÚ):

- **Functions:** It is the national regulator in the field of electronic communications and postal services. It is responsible for market regulation, radio frequency spectrum management, ensuring competition, protecting user interests, monitoring service quality, and resolving disputes between providers and users. ČTÚ also plays a role in implementing the national plan for the development of next-generation networks.
- **Website:** <https://www.ctu.cz/> (in the provided materials the site was inaccessible⁷², but this is the official address).
- **Leadership:** Chair of the ČTÚ Council. Information about the current leader and a link to their profile are absent from the provided fragments and require searching on the official ČTÚ website.

2. National Cyber and Information Security Agency (Národní úřad pro kybernetickou a informační bezpečnost – NÚKIB):

- **Functions:** Central administrative body for cybersecurity, including protection of critical information infrastructure, coordination of measures to prevent cyber threats and respond to incidents, development of standards, and educational activities in cybersecurity.⁷¹ NÚKIB also cooperates with international partners and participates in European cybersecurity initiatives.⁷¹
- **Website:** <https://www.nukib.gov.cz/>
- **Leadership:** Director of NÚKIB. Information about the current leader and a link to their profile are absent from the provided fragments and require searching on the official NÚKIB website.

3. Office for Personal Data Protection (Úřad pro ochranu osobních údajů – ÚOOÚ):

- **Functions:** National supervisory authority on personal data protection issues, including monitoring compliance with GDPR. It considers citizens' complaints, conducts inspections, issues injunctions, and imposes fines for violations of data protection legislation.
- **Website:** <https://www.uoou.gov.cz/>

- **Leadership:** President of ÚOOÚ. Information about the current leader and a link to their profile are absent from the provided fragments and require searching on the official ÚOOÚ website.

4. Ministry of Industry and Trade (Ministerstvo průmyslu a obchodu – MPO):

- Functions: Shapes state policy in the field of electronic communications and the information society, coordinates the implementation of national digitalisation strategies, and participates in the development of relevant legislation.
- Website: <https://www.mpo.cz/>
- Leadership: Minister of Industry and Trade. Information about the current leader and a link to their profile are absent from the provided fragments and require searching on the official MPO website.

The interaction of these and other state bodies, as well as their cooperation with the private sector and civil society, forms the overall system of internet governance in the country.

3.2. Market Monopolisation

The legislation of the Czech Republic, like EU legislation in general, aims to prevent market monopolisation and protect competition, including in the telecommunications services and internet access market. The Czech Telecommunication Office (ČTÚ) is empowered to analyse markets, identify operators with significant market power (SMP), and apply regulatory measures to ensure fair competition. These measures may include obligations to provide access to network infrastructure, price control, and non-discrimination.

Despite the existence of antitrust legislation and regulatory efforts, a high degree of concentration is observed in some segments of the Czech telecommunications market. As noted in section 2.2.2, the mobile communications market is effectively divided among three major operators (O2, T-Mobile, Vodafone), which together control more than 90% of active SIM cards.⁵¹ Such an oligopolistic structure can lead to weakened price competition and coordination of market behaviour, which is potentially disadvantageous for consumers. It has been reported that prices for mobile tariffs in Czechia are among the highest in the EU.⁵¹

The fixed broadband access market has historically been more diversified, with a large number of small and medium-sized regional providers, which has promoted competition.⁴⁵ However, consolidation trends are also observed here. For example, O2 Czech Republic's acquisition of

Nordic Telecom⁴⁶ is a step towards larger players. Although the former state monopolist (now CETIN, providing infrastructure on a wholesale basis) no longer holds a dominant position in the retail market, control over a significant part of the network infrastructure remains an important factor. ČTÚ regularly analyses relevant markets and, if necessary, imposes specific obligations on SMP operators to prevent abuse of market position. The effectiveness of these measures and the real level of competition require constant monitoring.

3.3. Internet Shutdowns on Government Orders

The issue of the possibility of shutting down the internet on government orders is one of the key aspects of digital rights and freedom of information. In democratic countries, legislation usually strictly regulates such emergency measures, allowing them only in exceptional cases related to serious threats to national security, public order, or to prevent large-scale catastrophes, and subject to strict legal procedures, including judicial oversight.

The provided materials lack direct information on the existence in Czech legislation of specific provisions allowing authorities to issue orders for full or partial internet shutdowns (shutdowns) on a national or regional scale, as well as on the procedures for such shutdowns, reasons, and responsible persons. A detailed analysis of this aspect would require studying specific laws of the Czech Republic concerning states of emergency, national security, counter-terrorism, and the activities of law enforcement agencies.

Nevertheless, the general principles of the rule of law and Czechia's membership in the European Union, where freedom of access to information is one of the fundamental values, suggest that any such measures must be strictly limited, proportionate to the threat, and subject to independent oversight. The absence of information about such provisions in the provided sources does not mean their complete absence in the legislation, but may indicate that this topic is not the subject of active public discussions or frequent legislative initiatives in Czechia during the period under review, or that such powers are clearly not prescribed or are extremely limited. Practical cases of shutdowns will be discussed in section 4.1.

3.4. Legislation on "Words on the Internet"

Legislation concerning statements on the internet in the Czech Republic, like in other EU countries, is formed at the intersection of several legal areas: protection of freedom of speech, combating illegal content (e.g., incitement to hatred, child pornography, terrorism propaganda), protection of honour, dignity and business reputation, as well as countering disinformation.

In the context of "spreading fakes" (disinformation), Czech legislation probably does not contain a single special law criminalising "fakes" as such in a broad sense, as this could contradict the principles of freedom of speech. However, certain types of false information may fall under existing legal norms. For example, spreading knowingly false information that causes panic (alarm message) may qualify as a criminal offence under the relevant articles of the Criminal Code. Also, spreading defamation or insults on the internet may entail civil or criminal liability.

In recent years, especially against the background of the COVID-19 pandemic and geopolitical conflicts, the problem of disinformation has become more acute, and at the EU level and in individual member states various approaches to solving it are being discussed. This includes both legislative measures (for example, within the framework of the EU Digital Services Act, which imposes certain obligations on online platforms to combat disinformation) and "soft" measures, such as supporting media literacy, fact-checking initiatives, and independent media.

In Czechia, the emphasis is probably on combating disinformation that poses a clear threat to public interests or the rights of others, rather than on a general ban on "untrue" information. The interpretation of "spreading fakes" in laws, if present, is most likely tied to specific negative consequences of such spreading (e.g., damage to reputation, creating a threat to public order, interference in elections). The National Cyber and Information Security Agency (NÚKIB) may also play a role in monitoring and analysing disinformation campaigns, especially if they pose a threat to national security.⁷¹

For an accurate assessment of legislation on "words on the internet" and the interpretation of "fakes" requires an analysis of specific provisions of the Criminal Code, Civil Code, Media Law, and other relevant regulations of the Czech Republic, as well as judicial practice on these issues. Such detail is absent in the provided fragments.

3.5. Legislation on Internet Blocking

Legislation on blocking internet resources in the Czech Republic, like in other EU countries, is aimed at restricting access to unlawful content. This may include materials related to child pornography, copyright infringement, unlicensed gambling, terrorism, and other serious crimes. The grounds and procedures for blocking are usually defined by special laws and must comply with the principles of proportionality and legal certainty.

EU membership also imposes certain frameworks on national blocking legislation, striving for harmonization of approaches and protection of fundamental rights, including freedom of access

to information. New European initiatives, such as the Digital Services Act (DSA), establish rules for online platforms regarding content moderation and cooperation with authorities, which may also affect blocking practices.

3.5.1. Legislation

In the Czech Republic, there are legislative grounds for blocking internet resources. One example is legislation aimed at combating illegal online gambling. The Gambling Act provides for the possibility of blocking access to websites offering gambling services without the corresponding Czech license. The decision on blocking is made by the Ministry of Finance, which maintains a list of such sites.

In addition, blocking can be applied on the basis of court decisions in cases of copyright infringement or to stop the dissemination of other unlawful content, such as child pornography or hate-inciting materials. Procedures and grounds for such blocking may be prescribed in various legislative acts, including the Criminal Procedure Code or special laws.

It is important to note that any measures to block internet resources must be carried out in accordance with the law and with respect for human rights, including the right to a fair trial and freedom of expression. The European Convention on Human Rights and the practice of the European Court of Human Rights (ECtHR) set high standards for the admissibility of such restrictions. The provided materials lack a detailed list of all laws regulating blocking.

3.5.2. Blocking Procedures

Blocking procedures for internet resources in Czechia vary depending on the type of unlawful content and the legislative basis. In the case of illegal online gambling, the Ministry of Finance, after establishing the fact of violation, adds the corresponding site to a special registry of blocked resources. Internet providers are then obliged to technically restrict access to sites from this list. Failure to comply with this requirement may entail sanctions for providers.

In other cases, for example, when copyright is violated or defamation is disseminated, blocking can be initiated on the basis of a court decision upon a claim from the copyright holder or the affected party. The court, having considered the evidence, can issue an order to the internet provider to block access to specific content or resource. Procedures related to blocking content recognized as extremist or terrorist may involve law enforcement agencies and special services acting on the basis of relevant laws and court warrants.

A general requirement for blocking procedures is their transparency (as far as possible without harm to the investigation), the possibility of appealing the blocking decision, and the proportionality of the measures applied. Internet providers play a key role in the technical implementation of blocking; however, they usually act on the basis of orders from authorized state bodies or court decisions, and not on their own initiative. A detailed description of all blocking procedures for each type of content requires analysis of specific Czech legislation, which was not fully presented in the original materials.

3.5.3. Registries of Blocked Internet Resources

In the Czech Republic, there is at least one official public registry of blocked internet resources. This concerns the list of websites with illegal gambling, maintained by the Ministry of Finance. This list is open and available on the official website of the ministry.

Adding a site to this registry obliges internet providers to block access to it on the territory of Czechia.

The existence of other official but possibly non-public or limited-access registries (for example, related to combating terrorism or child pornography) cannot be ruled out, as such practice exists in some countries. However, information about this is absent in the provided fragments. Usually, if it concerns content blocked by court decision (for example, due to copyright infringement), there may not be a single centralized public registry of all such cases, although information about specific court decisions may be available through judicial databases.

In addition to official registries, unofficial lists or databases maintained by non-governmental organizations, researchers or activists who track cases of internet resource blocking in the country may exist. Such unofficial registries can provide a broader picture of internet censorship, including cases that may not be reflected in official lists, or analyze the effectiveness and legitimacy of blocking.

As mentioned in the previous section, in Czechia there is an official public registry of internet sites with illegal gambling, access to which must be blocked by internet providers. This registry is maintained by the Ministry of Finance of the Czech Republic.

- **Official registry (illegal gambling):**

- **Link:** The list of blocked internet pages (Seznam blokováných internetových stránek) is usually available on the official website of the Ministry of Finance of Czechia (<https://www.mfcr.cz/>). The exact current link must be checked directly on the ministry's website, as it may change. Searching for keywords "seznam blokováných internetových stránek hazardní hry" on mfcr.cz should lead to the current list.
- **Description of operation:** The Ministry of Finance adds domain names of websites that offer gambling without the necessary license issued in Czechia to this list. After adding to the list, internet providers are obliged to block access to these sites for users on the territory of Czechia within the established deadlines. The list is regularly updated. The goal of this registry is to combat illegal gambling business and protect consumers.

Information about other official public registries of blocked resources (for example, for reasons of extremism, terrorism or copyright infringement) is not contained in the provided materials. Such blocking, if they occur, can be carried out on the basis of court decisions or orders from other competent bodies, and information about them can be less centralized.

- **Unofficial registries and monitoring projects:**

- **Projects** such as OONI (Open Observatory of Network Interference), collect data on internet censorship worldwide, including in Czechia. Although OONI itself is not a "registry of blocked sites" in the traditional sense, its data and reports can reveal cases of blocking various websites and applications. OONI Explorer data allow analyzing site availability in a specific country.
- Local human rights or digital organizations in Czechia may also monitor blocking and publish information about them; however, specific links to such unofficial registries are absent in the provided fragments.

The work of unofficial registries and monitoring projects usually consists in collecting data from volunteers or using automated tests of internet resource availability, analyzing this data and publishing reports on detected cases of censorship or access restriction. These resources play an important role in ensuring transparency and public control over blocking practice.

3.5.4. Development of Blocking

OONI data (Open Observatory of Network Interference) provide valuable information on the state of internet censorship and blocking in various countries, including the Czech Republic. Analysis of

OONI reports for Czechia for the period from 2019 to 2025 (if such are available and accessible) could reveal the dynamics and nature of blocking.

- **Overview of potential findings in OONI reports (hypothetical, as specific OONI reports for Czechia for the entire period are not provided in detail):**
 - **Types of blocked content:** OONI reports usually classify blocked sites by categories (for example, political criticism, social media, censorship circumvention tools, gambling, pornography, copyright infringement, etc.). For Czechia, the main category of officially blocked sites will likely be illegal gambling, as indicated above. Sporadic blocking of other content may also be detected, possibly related to copyright infringement or other unlawful content by court decision.
 - **Blocking methods:** OONI can identify technical methods used for blocking (for example, DNS blocking, HTTP blocking, TCP/IP blocking).
 - **Blocking dynamics:** Comparing OONI data for different years could show whether the number of blocked resources is increasing or decreasing, and whether the nature of blocked content is changing. For example, after the introduction of legislation on blocking sites with illegal gambling, a surge in blocking in this category could be expected.
 - **Transparency:** OONI reports can also indirectly indicate the level of blocking transparency (for example, whether users are displayed blocking messages, and whether the reason is indicated).
- **Links to OONI country reports for Czechia:**
 - Data for Czechia can be found on OONI Explorer: <https://explorer.ooni.org/country/CZ>
 - Specialized OONI reports, if they were published for Czechia, can be searched on their official site: <https://ooni.org/reports/>

Conclusion on blocking development:

Based on the available information, the main systematic blocking practice in Czechia is blocking sites with illegal gambling on the basis of special legislation and the official registry of the Ministry of Finance. This practice likely developed after the adoption of the corresponding law. As for other types of content, blocking is most likely spotty and carried out on the basis of court decisions (for example, in cases of copyright infringement) or in the framework of combating particularly dangerous types of unlawful content (for example, child pornography).

Large-scale political censorship or broad blocking of social networks and news resources, characteristic of some other countries, in Czechia, apparently, is not observed, which corresponds

to its status as a democratic state with a high level of internet freedom. However, to confirm this conclusion and identify possible anomalies or changes in blocking practice, constant monitoring is necessary, including using OONI tools and analysis of the activities of local human rights organizations.

4. Human Rights Violations on the Internet

The Czech Republic is generally characterized by a high level of human rights observance, including digital rights. The country is a participant in key international treaties in the field of human rights and a member of the European Union, where the protection of fundamental freedoms is a priority. Nevertheless, as in any country, separate cases or challenges related to the realization of human rights in the online environment may arise.

Such challenges may include issues of privacy protection in conditions of digital surveillance, combating cyberbullying and online harassment, the spread of hate speech and disinformation, as well as ensuring a balance between freedom of expression and the need to counter unlawful content. It is important to track how legislation and law enforcement practice respond to these challenges, and whether the measures taken do not lead to unjustified restriction of digital freedoms.

4.1. Internet Shutdowns on Government Orders

The provided materials lack information about cases of full or partial internet shutdowns (shutdowns) or communication services in the Czech Republic on government orders in the period from 2019 to 2025.

This corresponds to the general profile of Czechia as a country with a high level of internet freedom and respect for the rule of law. Large-scale internet shutdowns are an extreme measure,

characteristic of authoritarian regimes or situations of serious destabilization, and usually provoke sharp criticism from the international community and human rights organizations. The absence of reports about such incidents in Czechia indicates that authorities did not resort to similar practices for controlling the information space or suppressing public activity. Local and short-term network failures, if they occurred, were likely related to technical problems or planned works, and not to targeted actions of authorities to restrict access.

4.2. Criminalization of Statements on the Internet

In the Czech Republic, as in most European countries, there are laws that can be applied to statements on the internet and, in certain cases, lead to administrative or criminal liability. It is not about persecution for expressing opinions as such, but about statements that violate specific legal norms, such as prohibition on inciting hatred, defamation, insult, threats, public approval of crime, dissemination of child pornography or denial of genocide.

The provided materials **lack specific widely covered cases of criminal or administrative persecution** of Czech citizens for statements on the internet or social networks in the period from 2019 to 2025, which would cause significant public resonance or be noted by international human rights organizations as a systemic problem. This does not mean complete absence of such cases, as separate incidents could take place, but they, apparently, did not reach the level that would indicate systematic suppression of freedom of speech in the online space.

For identifying specific cases, in-depth monitoring of Czech media, judicial registries and reports of human rights organizations for the indicated period would be required. However, based on the general context of Czechia as a country with a high level of human rights protection, it can be assumed that such cases, if they were, were isolated and had a single character and were considered within established legal procedures. It is important that the application of laws restricting freedom of speech be strictly necessary and proportionate in a democratic society, and that it not be used for suppressing legitimate criticism or dissent.

4.3. Persecution of Media and NGOs

Freedom of mass media and activities of non-governmental organizations (NGOs) are important indicators of the state of democracy and human rights observance. Persecution of media or NGOs for their activities on the internet, including publications, investigations or critical statements, can seriously undermine these freedoms.

The provided materials **lack information about widely covered cases of persecution** of mass media or non-governmental organizations in Czechia for their statements or activities on the internet in the period from 2019 to 2025, which would indicate systemic pressure from authorities. Czechia in general has a reputation as a country with a free media environment and active civil society.

Nevertheless, as in other countries, media and NGOs may face various challenges, such as defamation lawsuits (SLAPP lawsuits), attempts at economic pressure or cyber attacks. It is important to track whether such methods are used for intimidation or restriction of independent voices. In 2023, changes in media ownership occurred related to former Prime Minister Andrej Babiš: an amendment to the Law on Conflict of Interests forced him to sell media assets, including Mafra company and radio Impuls, which were acquired by Kaprain Group.⁷⁴ Although this change is related to anti-corruption legislation, it influences the media landscape of the country.

For obtaining a full picture, monitoring of reports from international organizations such as "Reporters Without Borders" (for example, their Press Freedom Index 75), Amnesty International, Human Rights Watch, as well as local human rights and media organizations is necessary. The absence of loud cases in the provided fragments may indicate a relatively favorable situation, but does not exclude the presence of separate incidents or hidden forms of pressure.

5. Civil Society in the Field of Internet Governance

Civil society in the Czech Republic plays an active role in various spheres of public life, including issues related to digital rights, internet freedom and internet space governance. In the country, various non-governmental organizations (NGOs), expert groups and activists operate, who engage in monitoring legislation, human rights activities, increasing digital literacy and advocacy of internet users' interests.

These organizations often participate in public consultations on bills concerning the digital sphere, publish analytical reports, conduct educational campaigns and provide legal assistance to citizens whose digital rights were violated. Their activities contribute to increasing transparency and accountability of state bodies in questions of internet regulation, as well as forming public opinion on current problems of the digital era.

5.1. Organizations

In the Czech Republic, there is a number of organizations engaged in protecting citizens' rights on the internet, promoting digital freedoms and developing internet literacy. Although the provided materials do not contain an exhaustive list of such organizations, several directions of their activities can be highlighted and examples given on the basis of general information about the country and activities of similar NGOs in Europe:

1. **Organizations focusing on digital rights and freedoms:**

- **Description of activities:** Such organizations engage in monitoring legislation and law enforcement practice in the field of freedom of speech on the internet, right to private life, personal data protection, countering censorship and surveillance. They can publish reports, conduct campaigns and provide legal assistance.
- **Example** (hypothetical, as specific names are not indicated in fragments for Czechia): Local branches of international organizations, such as Amnesty International Czech Republic or national human rights NGOs having programs on digital rights.
- **Internet resources:** Search for specific Czech organizations is required.

2. **Organizations engaged in internet security and digital literacy questions:**

- **Description of activities:** Conduct educational programs for various population groups (children, elderly people, teachers) on safe internet use, protection from cyber threats, media literacy and critical thinking in the online environment.
- **Example** (hypothetical): Projects supported by the state or private funds, educational NGOs.
- **Internet resources:** Search for specific Czech organizations is required.

3. **Organizations representing interests of internet users or IT community:**

- **Description of activities:** Can lobby users' interests in dialogue with providers and regulators, advocate for open internet, accessible tariffs and quality services. IT associations can engage in standardization questions, infrastructure development and innovation support.
- **Example:** CZ.NIC, z.s.p.o., .cz domain administrator, also leads active activities on internet infrastructure development, security increase and education in the field of internet technologies.³¹ Although this is not a classical human rights NGO, its activities have great significance for the internet community.
- ****Internet resources:** <https://www.nic.cz/>

For obtaining a full list of relevant organizations and their internet resources, additional search by Czech sources is necessary.

5.2. VPN and Blocking Circumvention Tools

Use of VPN (virtual private networks) and other blocking circumvention tools is a widespread practice in many countries, both for ensuring privacy and security on the internet, and for access to content that may be restricted by geographical or other reasons. In countries with a high level of internet freedom, such as Czechia, the main motivation for using VPN is most often privacy protection, safe use of public Wi-Fi networks or access to geo-restricted entertainment or information resources.

In the context of possible (although unlikely in Czechia) strengthening of state control over the internet or introduction of broader blocking, VPN and other anonymizers can acquire additional significance as tools for realizing the right to free access to information. However, at the moment, there are no grounds to assume that in Czechia there is mass demand for VPN precisely for bypassing state censorship.

5.2.1. Status of VPN Services

In the Czech Republic, as in most countries of the European Union, use of VPN services **is legal** for private persons and organizations. VPN are widely used for protecting internet traffic, ensuring anonymity, safe remote access to corporate networks and bypassing geographical restrictions on content access.

The provided materials **lack information** about any special laws prohibiting or substantially restricting use, advertising or sale of VPN services in Czechia for ordinary users. Regulation, if it exists, most likely concerns the activities of VPN providers themselves in the framework of general legislation on communication services provision, data protection and commercial activities. For example, VPN providers, like other companies, are obliged to comply with personal data protection legislation (GDPR) in relation to their clients' data.

Attempts at state regulation aimed at restricting VPN use for bypassing lawful blocking (for example, sites with illegal gambling), theoretically possible, but information about such specific measures in Czechia in the provided fragments is absent. In general, the climate for VPN use in Czechia can be considered free.

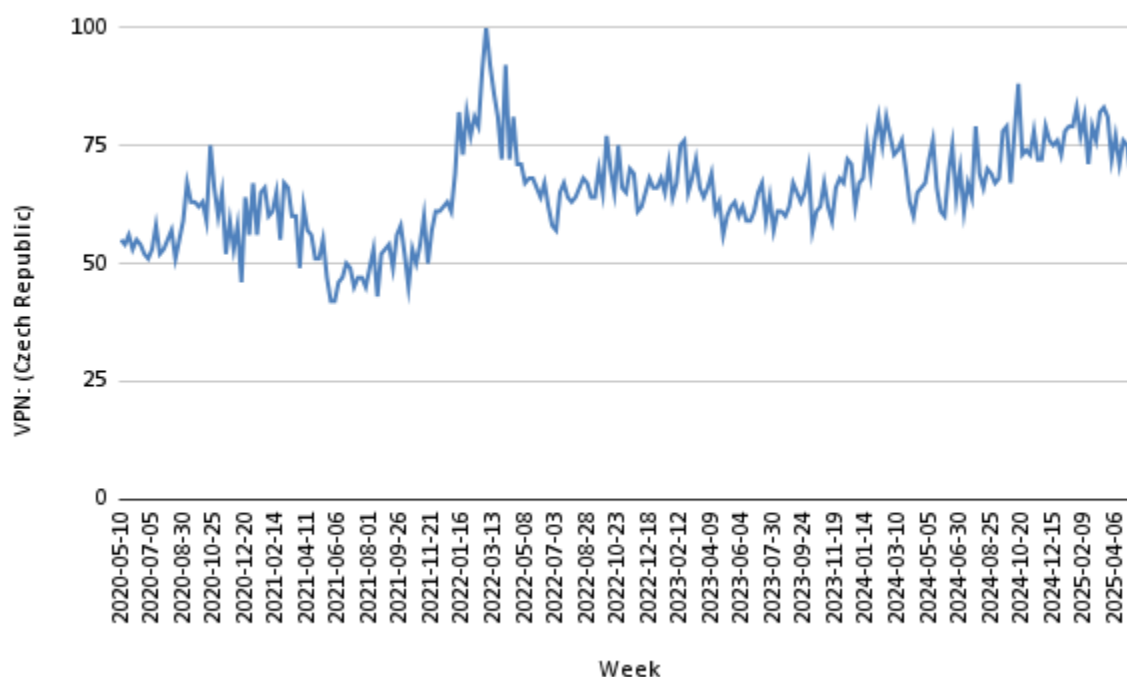
5.2.2. Number of VPN Users

Information about the exact number of VPN users in the Czech Republic and its dynamics for the period from 2019 to 2025 **is absent in the provided materials**. Collecting such statistics is difficult, as VPN use is often associated with striving for anonymity, and VPN services rarely publish detailed data by separate countries.

Estimate the number of VPN users can only indirectly, on the basis of global or regional studies of the VPN services market, which may include estimates for Czechia. Factors influencing the growth of VPN users number may be:

- Increasing awareness about cyber security and privacy questions on the internet.
- Growth of streaming services popularity with geo-restrictions.
- Increase in the number of people working remotely and needing safe access to corporate resources.
- Rare, but possible cases of blocking certain resources that users would want to bypass (although for Czechia this is less actual in the context of mass blocking).

Graph 10: Dynamics of search queries about VPN in Czechia (2020–2025)



Source: *trends.google.com*

General picture of interest to VPN: the graph shows stable and constant interest to VPN services in Czechia in the period from 2020 to 2025. The base level of search activity fluctuates in the corridor from 50 to 75 conditional units, which speaks about formed demand. This means that for a significant part of Czech internet users VPN is an understandable and demanded tool for solving everyday tasks, such as privacy protection, security when using public Wi-Fi networks or access to foreign content.

Against the general background of stable demand, several sharp surges or "peaks" are clearly highlighted, which testify about situational, event-conditioned growth of interest. These peaks are society's reaction to external events that actualize the need in digital security and free access to information.

Analysis of peaks and their probable reasons — the most noticeable and high peak on the graph falls on the end of February – beginning of March 2022, when search interest reached the maximum value in 100 units.

- Main reason — beginning of full-scale invasion of Russia in Ukraine (24 February 2022). This event caused significant concern in Central and Eastern Europe. Sudden growth of interest to VPN in Czechia, most likely, was caused by combination of factors related to this conflict:
 - Concerns about cyber security: Against the background of news about cyber attacks and hybrid war, the desire of people to protect their personal data and internet connection sharply grew.
 - Informational war: Beginning of blocking independent media and social networks in Russia prompted both Czech citizens, and living in the country Russians and Belarusians to search ways of circumvention of restrictions for obtaining objective information obtaining.
 - Influx of refugees: In Czechia arrived large number of refugees from Ukraine, to whom VPN was necessary for safe connection with home and access to habitual online services.

Blocking of VPN services:

The provided materials lack information about targeted blocking of VPN services or VPN protocols at the state level in the Czech Republic. Such practice is characteristic for countries with rigid internet censorship and does not correspond to the general profile of Czechia. Separate websites or online services may try to block access from known IP addresses of VPN servers for compliance with license agreements (for example, streaming platforms), but this is not state policy of blocking the VPN services themselves.

5.2.3. Cases of Persecution for VPN Use

In open sources, information about cases of persecution of citizens or organizations in the Czech Republic for simple use of VPN services for ensuring privacy or access to geo-restricted content is absent. Use of VPN itself is legal.

Persecution theoretically could have place, if VPN was used for committing unlawful actions (for example, cyber crimes, dissemination of prohibited content), but in such cases the object of persecution would be the unlawful act itself, and not the fact of VPN use as such. Absence of reports about persecutions precisely for VPN use confirms the free status of these technologies in the country.

5.2.4. Monitoring of Blocking

Monitoring of internet resources blocking in the Czech Republic, as in other countries, can be carried out by various organizations and with help of various tools.

1. **OONI (Open Observatory of Network Interference):**

- **Resource:** OONI Explorer
- **Description:** OONI is a global project that collects and analyzes data about internet censorship worldwide. Users can run tests with help of OONI Probe software for checking websites and applications availability, as well as detecting various forms of network interference, including DNS manipulations, TCP/IP blocking and HTTP. Data are aggregated and published on OONI Explorer.
- **Digest of messages for the last 5 years (general character, as specific reports were not analyzed in detail):**
 - Data OONI for Czechia, probably, show relatively low level of blocking by comparison with countries with rigid censorship.
 - Main category of systematically blocked sites, most likely, will be resources related to illegal gambling, in accordance with national legislation.
 - May fix separate cases of other sites unavailability, but they may be related to various reasons (technical failures, configuration errors, temporary blocking by court decision, for example, for copyright infringement).
 - Unlikely detection of large-scale blocking of popular social networks, messengers or independent news resources by political motives.

2. **Official registries:**

- **Resource:** List of blocked internet pages of the Ministry of Finance of Czech Republic (illegal gambling). Link must be searched on the official site <https://www.mfcr.cz/>.
- **Description:** This registry is official source of information about sites blocked in connection with illegal gambling activity.

3. **Local human rights and digital organizations:**

- **Resources:** Specific organizations and their resources are not indicated in the provided materials, but in Czechia, probably, exist NGOs engaged in monitoring internet freedom (for example, Iuridicum Remedium or local branches of international human rights groups).
- **Description:** Such organizations can publish reports, analyze legislation and law enforcement practice, as well as highlight cases of access restriction to information.

For compiling a detailed digest of messages about blocking for the last 5 years, systematic analysis of OONI Explorer data for Czechia and reports of relevant local and international

organizations would be required, what goes beyond the information presented in the original fragments.

6. Conclusion

Analysis of the state of the internet and digital rights in the Czech Republic for the period from 2019 to 2025 shows the picture of a country with high level of internet penetration, developed infrastructure and legislative base, in significant degree harmonized with norms of the European Union. Access to information in general is free, and cases of direct state intervention in online content, such as massive blocking or internet shutdowns, are not fixed. The telecommunications services market is characterized by competition, especially in the fixed access segment, although on the mobile market dominates "big three" operators, what may influence pricing. Internet access speeds constantly grow, especially in the mobile segment thanks to 5G introduction. IPv6 implementation occurs, but more slow tempos, than in some leader countries. From the point of view of human rights observance in the area of access to information, the situation in Czechia in general favorable. Legislation provides protection of basic freedoms, including freedom of speech and right to private life. Absent evidences of systematic persecution of citizens, media or NGOs for their online activity by political motives. Blocking of internet resources have mostly spot character and concerns mainly illegal content (for example, gambling, copyright infringement) on the basis of law. Civil society, although not detailed presented in the original data by concrete organizations, in general active, and use of such tools, as VPN, is legal and widespread for privacy protection.

Forecast of events development:

1. Neutral scenario:

- Preservation of current level of internet freedom and access to information. Gradual improvement of infrastructure (speeds growth, further fiber optic and 5G penetration). Continuation of slow, but stable IPv6 implementation. Legislation will develop in accordance with general European trends (for example, full DSA, DMA introduction). State censorship level will remain low, blocking will apply mainly to clearly unlawful content in the framework of established procedures. Activity of civil society in the sphere of digital rights will preserve at the current level, without significant breakthroughs or worsenings. Problems related to high cost of mobile communication and digital inequality (especially among elderly), will be solved slowly.

2. **Positive scenario (regulation weakening, liberalization):**

- Accelerated internet infrastructure development thanks to investments increase and effective state support, what will lead to digital divide reduction between regions and social groups. Strengthening of competition on the mobile communication market, possibly, for account of new strong players appearance or more active regulatory intervention, what will lead to tariffs reduction. More fast and wide IPv6 implementation. Increasing transparency in the activities of state organs, concerning internet regulation, and active involvement of civil society in decision making processes. Strengthening of personal data and users privacy protection on practice. Development of digital literacy programs, covering all population layers. In this scenario Czechia can become one of the leaders in EU by digital freedoms level and internet environment quality.

3. **Negative scenario (censorship strengthening, regulation tightening):**

- Under the pretext of combating disinformation, cyber threats or protection of national interests, legislative acts can be adopted, expanding possibilities of state organs by internet content control and surveillance over users. Possible strengthening of pressure on independent media and NGOs, criticizing power. Blocking internet resources procedures can become less transparent and more widely applied, touching also legitimate content. Attempts of anonymization and encryption means restriction, including VPN. Worsening of economic situation can lead to investments reduction in infrastructure and access cost growth, aggravating digital inequality. In such scenario the level of internet freedom in Czechia can decrease, approaching to models with more strict state control, although full-scale transition to authoritarian regulation model internet seems unlikely, considering EU membership and established democratic institutes.

The most probable appears development by neutral or moderately positive scenario, at which Czechia will follow general European tendencies in the area of digital regulation, preserving high level of internet freedom, but facing challenges in the area of competition on separate market segments and speeds of some new technologies introduction.

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