

State of the Internet and Digital Rights in Poland (2019–2025)

Poland is one of the most dynamic and significant digital markets in Eastern Europe. In recent years, the country has demonstrated steady growth both in the number of internet users and in infrastructure development. This report offers an in-depth analysis of this complex landscape, covering everything from the domain name market structure and competition among leading internet providers to technical aspects such as the adoption of the IPv6 protocol.

However, behind the façade of technological progress and market growth, a less visible but extremely important struggle for the future of digital rights is unfolding. The report examines in detail how state regulation of the internet is being formed and tightened. Using the existing system of blocking gambling websites as an example, we show how infrastructure is being created and fine-tuned that could potentially be used for broader content control under the pretext of combating disinformation and other threats.

Is Poland a country moving toward increased internet censorship, or will it manage to maintain a balance between security and freedom of speech? This report does not offer simple answers but provides a comprehensive basis for reflection. By diving into the details of legislation analysis, regulator activities, and data from independent monitoring, the reader will be able to form their own view on the key trends, risks, and prospects that will shape the future of the Polish internet in the coming years.

Disclaimer: This document was partially generated using several large language models (LLM). The information presented in it is based on the analysis and generalization of data from the specified sources, however, the process of its structuring, generalization, and presentation was performed using artificial intelligence technologies. It is recommended to use this text as a starting point for further research and to verify critically important data from primary sources.

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1. General Information

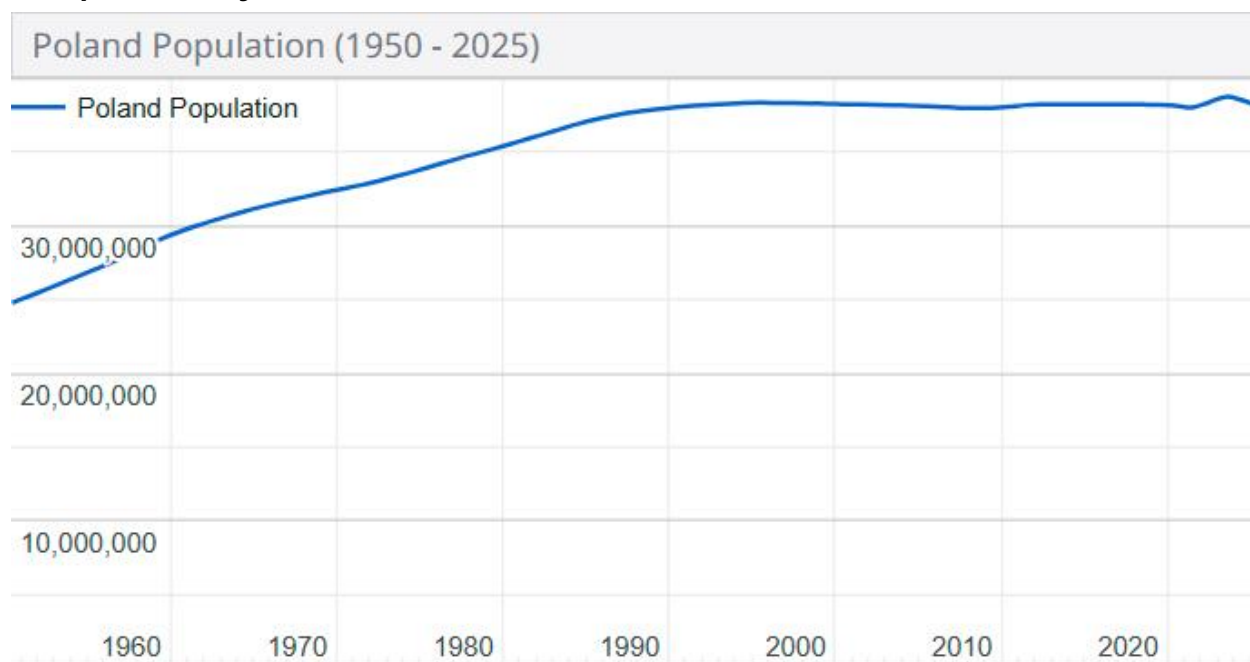
1.1. Geographical Location

Poland, officially the Republic of Poland (Polska, Rzeczpospolita Polska), is a country located in Central Europe. It lies at the geographical crossroads connecting the forested lands of north-western Europe and the sea routes of the Atlantic Ocean with the fertile plains of Eurasia.¹ To the north, Poland is washed by the Baltic Sea; to the north-east it borders Russia (Kaliningrad Oblast) and Lithuania; to the east – Belarus and Ukraine; to the south – Slovakia and Czechia; and to the west – Germany.¹ This central geographical position has historically made Poland an arena for the intersection of various political and cultural influences, which still affects its geopolitical role and economic ties today. The capital and largest city is Warsaw; other major and historically significant cities include Kraków, Łódź, Wrocław, Poznań, and Gdańsk.¹ The country's territory covers more than 310,000 square kilometres.¹

1.2. Population

At the end of 2023, Poland's population was approximately 37.637 million people.³ By this indicator, Poland is the fifth most populous country in the European Union.⁴ In recent years, there has been a steady trend of population decline caused both by negative natural increase (deaths exceeding births) and migration processes.³ The demographic situation is also characterised by population ageing: the proportion of people aged 65 and older is steadily increasing, creating additional challenges for the healthcare system, pension provision, and the labour market.³

Demographic changes, particularly population decline and ageing, represent a long-term challenge for Poland's socio-economic development. This may indirectly affect the digital sphere through changes in the structure of demand for digital services, the need for accelerated digitalisation of various economic sectors and public administration to compensate for potential labour shortages, and the need to adapt digital products and services to the needs of the elderly population. A shrinking working-age population and a growing share of older people may lead to a shortage of qualified personnel, including in the IT sector, and increased pressure on social services, which in turn may stimulate the introduction of digital solutions to improve efficiency.

Chart 1: Population Dynamics of Poland (1950–2025)

Source: *worldometers.info*

1.3. Gross Domestic Product (GDP)

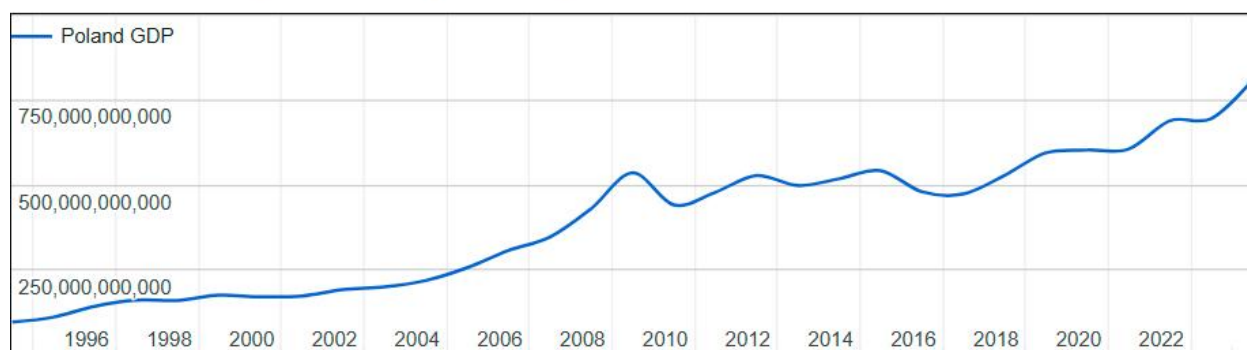
Poland's economy is one of the largest in Central and Eastern Europe and ranks sixth in GDP volume in the European Union.¹³ GDP per capita at purchasing power parity (PPP) is more than 70% of the EU average.¹⁹ The World Bank classifies Poland as a high-income country.²⁰ The Polish economy has shown significant resilience, avoiding recession during the 2007–2008 global financial crisis²¹ and demonstrating confident growth in the post-pandemic period, albeit with some slowdown in 2023.¹²

Sustainable economic growth and a relatively high GDP create favourable conditions for investment in digital infrastructure and the development of digital services. This, in turn, contributes to greater accessibility of technology for the population and businesses. However, dependence on external financing, particularly from European Union funds, and the presence of structural problems such as the demographic crisis may pose risks to the long-term sustainability of this growth.¹² A potential reduction in EU funding volumes in the future or intensification of demographic challenges could

slow GDP growth and, consequently, reduce investment activity in the digital sphere unless alternative internal growth drivers are found and activated, for example through stimulating innovation and the development of high-tech sectors.

Chart 2: Dynamics of Poland's Nominal GDP (1993–2023)

Poland GDP (Nominal, \$USD) 1993-2023



Source: *worldometers.info*

1.4. Main Economic Characteristics

The Polish economy exhibits the characteristics of a developed market, possessing a diversified structure and close integration into European and global production and supply chains.¹² The key sectors forming GDP are services, accounting for about 57–59%, industry with a share of about 29–40% (including such important industries as mechanical engineering, automotive manufacturing, electronics production, chemical and food industries, metallurgy), and agriculture, which contributes approximately 2.4–2.9% of GDP.¹³ In recent years, economic growth has been driven mainly by increases in private consumption, public and private investment, including thanks to inflows from European Union funds.¹² Poland has consistently outperformed the EU average economic growth rates.¹³

Despite the positive dynamics, the Polish economy faces a number of structural problems. One of the most acute is rapid population ageing, which creates significant challenges for the labour market (potential labour shortages), the social security system, and long-term budgetary sustainability.¹² To maintain competitiveness and ensure sustainable development, the country needs to transition to an innovation-based growth model, which requires significant investment in technological modernisation, scientific research, and human capital development.¹² In 2024, Poland faced an excessive deficit procedure from the EU, partly caused by a significant increase in

defence spending (to approximately 4% of GDP).¹² This situation underscores the need for careful management of public finances and finding a balance between different expenditure items.

The need to transition to an innovation-driven economy, as noted by international financial institutions¹², is directly linked to the development of digital technologies and the internet. The success of this transition will depend on the country's ability to ensure large-scale investment in modern digital infrastructure, raise the population's digital skills, and create a favourable regulatory and economic environment for technology companies and startups. At the same time, increased defence spending, while a response to geopolitical challenges, may temporarily divert resources from other important sectors, including potential investments in civilian digital infrastructure and digital education, unless balanced budgetary solutions or additional funding sources are found.

1.5. General Political Situation

According to the Constitution, Poland is a parliamentary republic operating on the principle of separation of powers.³⁹ Legislative power belongs to the bicameral parliament consisting of the Sejm (lower house, 460 deputies) and the Senate (upper house, 100 senators).⁴⁰ Executive power is divided between the President of the Republic of Poland, elected by universal suffrage for a five-year term, and the Council of Ministers (government) headed by the Prime Minister, who is appointed by the President and must receive a vote of confidence from the Sejm.⁴⁰ Judicial power is exercised by independent courts and tribunals, including the Supreme Court, the Constitutional Tribunal, and the State Tribunal.⁴⁰

The current President of Poland is Andrzej Duda (took office in 2015, re-elected in 2020).⁴² Since December 2023, the position of Prime Minister has been held by Donald Tusk, leader of the coalition government formed following the parliamentary elections in October 2023.⁴³ The main political forces represented in parliament and shaping the political landscape as of early 2025 are the centre-right Civic Coalition (Koalicja Obywatelska, KO), the conservative Law and Justice party (Prawo i Sprawiedliwość, PiS), the centrist Third Way bloc (Trzecia Droga), the right-wing Confederation alliance (Konfederacja Wolność i Niepodległość), and The Left (Lewica).⁴⁴

Poland's administrative-territorial division is three-tier. The country is divided into 16 voivodeships (województwa).¹ Voivodeships are subdivided into powiats – as of 1 January 2024 there were 314, plus 66 cities with powiat status. The lowest administrative unit is the gmina – on the same date there were 2,477 (including urban, urban-rural, and rural gminas).⁴⁶

The change of government at the end of 2023, when a coalition led by Donald Tusk came to power, marked a significant shift in the country's domestic and foreign policy. This may lead to changes in approaches to internet regulation and the protection of digital rights. The previous government formed by the Law and Justice party had repeatedly been criticised by both domestic and international observers for actions perceived as attempts to increase control over the media, the judicial system, and the information space in general. The new government declares commitment to European values and standards, which may lead to greater harmonisation of Polish legislation with EU norms in the field of digital rights, including the Digital Services Act (DSA) and the Digital Markets Act (DMA). However, the specific steps and their impact on freedom of speech, access to information, and the activities of online platforms will depend on the political will and ability of the new coalition to implement the declared reforms.

2. Internet

2.1. National Domain

The national top-level domain (ccTLD) for Poland is .pl.⁴⁹ Administration and technical maintenance of the .pl domain is carried out by NASK (Naukowa i Akademicka Sieć Komputerowa – State Research Institute “Scientific and Academic Computer Network”).⁴⁹ NASK was founded in 1991 and has played a key role in the development of the Polish internet segment since its inception, initially also acting as an internet provider for scientific and academic institutions.⁵¹ The .pl domain was officially registered and delegated to Poland on 30 July 1990.⁵³

Registration of domain names in the .pl zone is open to individuals and legal entities from around the world, without strict residency or local representation requirements, and operates on a “first-come, first-served” basis.⁵⁰ The length of a domain name can range from 1 to 63 characters.⁴⁹ An important feature is NASK's support for internationalised domain names (IDN) since 2003, making it one of the first registries in Europe to offer this capability; it supports Latin characters with diacritics as well as Greek, Cyrillic, and Hebrew alphabets.⁴⁹ To enhance domain name security, the DNSSEC (Domain Name System Security Extensions) technology is supported.⁴⁹ The registrant data management policy complies with the EU General Data Protection Regulation (GDPR).⁴⁹

The development of the .pl domain zone reflects general digitalisation trends in the country. The number of registered domain names has grown steadily over the years: in May 2008 the one-million mark was surpassed, and in January 2011 – two million.⁵¹ At the end of 2019, there were 2,513,491 active names in the registry.⁵⁴ In subsequent years there were some fluctuations: at the end of

2020 – 2,473,487 names⁵⁶, end of 2021 – 2,528,790 names⁵⁸, end of 2022 – 2,510,256 names⁶⁰, end of 2023 – 2,546,407 names⁶⁴, and at the end of 2024 – 2,588,140 active names.⁶⁹ Steady, albeit with minor fluctuations, growth in the number of .pl domains indicates continuing digital activity of Polish society and business. Early adoption of IDN and DNSSEC technologies underscores NASK's desire to meet international standards and ensure the security of the national domain space. Minor declines in the number of active domains in certain years, such as 2020 and 2022, may be related to general economic factors or market saturation in certain segments, but the overall long-term trend remains positive, indicating sustainable development of the Polish internet.

Table 1: Dynamics of the number of active domain names in the .pl zone (2019–2024, end of year)

Year	Number of active .pl domains	Source(s)
2019	2 513 491	https://www.dns.pl/NASK-raport-rynek-nazw-domeny-pl-2019.pdf
2020	2 473 487	https://dns.pl/sites/default/files/2021-03/NASK-Q4-2020-REPORT-EN.pdf
2021	2 528 790	https://en.nask.pl/eng/news/3874,Report-on-the-pl-domain-name-market-for-Q4-2021.html
2022	2 510 256	https://www.dns.pl/sites/default/files/2023-02/NASK-Q4-2022-REPORT-EN.pdf
2023	2 546 407	https://www.dns.pl/sites/default/files/2024-02/NASK-Q4-2023-REPORT-EN.pdf
2024	2 588 140	https://nask.pl/aktualnosci/domeny-pl-polska-domena-roznie-w-sile

2.2. Number of Users

As of early 2025, Poland had 34.5 million internet users, representing 89.8% of the country's total population.⁷⁰ Data from the International Telecommunication Union (ITU) also indicate a high level of internet penetration: 85% of the population in 2023, 86.9% in 2022, 85.4% in 2021, 83.2% in 2020, and 80.4% in 2019.⁷² GUS statistics also confirm a high level of household internet access –

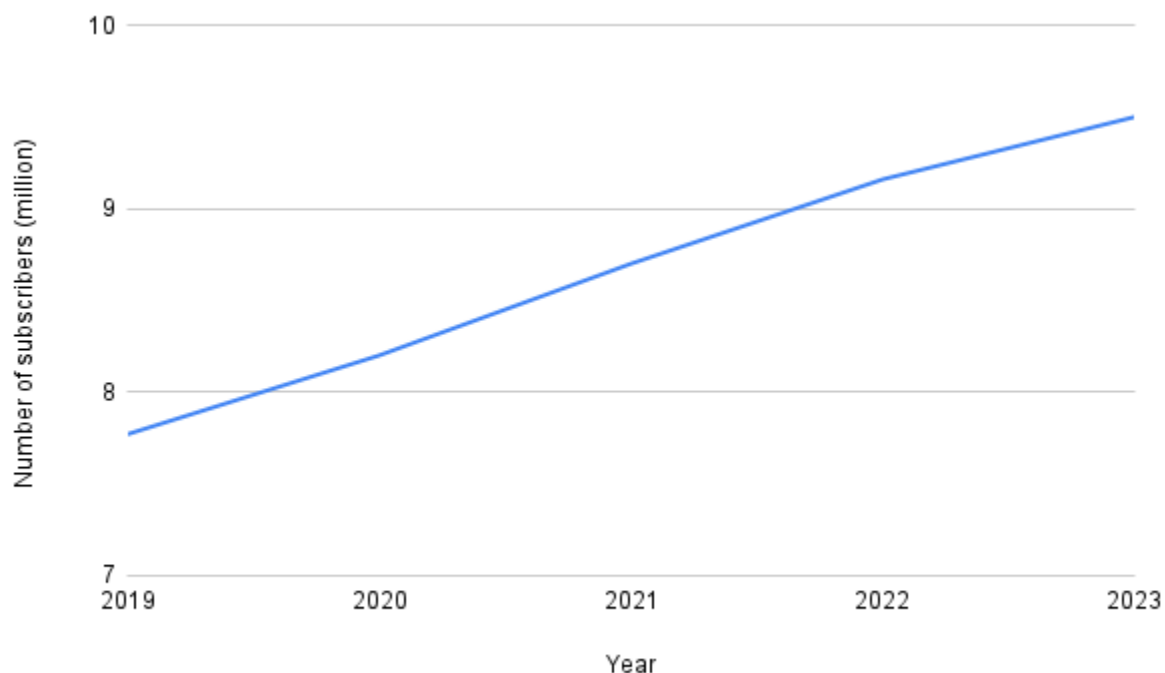
95.9% in 2024.⁷⁶ These figures demonstrate that internet access is widespread and available to the majority of Polish citizens.

The high and steadily growing level of internet penetration creates a vast audience for digital services, online commerce, e-government, and digital content consumption. It also underscores the importance of the internet as a key source of information and the main platform for public communication and discussion. At the same time, despite generally high indicators, certain aspects of the digital divide remain, particularly the age gap in internet use, where the older generation shows significantly lower engagement rates.⁵² A slight decrease in the absolute number of internet users noted by DataReportal between January 2024 and January 2025 (by 310 thousand), while maintaining the penetration percentage⁷⁰, likely reflects general demographic trends of population decline rather than reduced interest in the internet or its accessibility. Further efforts are needed to overcome the remaining digital divide and ensure an inclusive digital society through increasing digital literacy across all age groups and adapting digital services to the needs of different user categories.

2.2.1. Fixed Internet

The fixed broadband (ŠPD) market in Poland is actively developing, characterised by competition between different technologies and a steady increase in the number of users. The main access technologies are DSL, cable networks (DOCSIS), and increasingly fibre-optic networks (FTTH/FTTP), which show the most dynamic growth.⁵² In 2023, fixed internet access services were provided by 2,225 telecommunications companies.⁷⁸ Household fixed internet penetration increased from 54.8% in 2019 to 65.5% in 2023.⁷⁸ This growth is largely due to infrastructure expansion, including through state programmes and operator investments.

The number of fixed broadband users in Poland shows steady growth.

Chart 3: Dynamics of the number of fixed broadband subscribers in Poland (2019–2023)

Market consolidation, exemplified by Play's acquisition of UPC Polska⁵², is a significant factor changing the balance of power. Such mergers can both increase competitive pressure on remaining players and, in some cases, weaken competition locally if the number of alternative providers decreases. The predominance of fibre-optic technologies (FTTH) as the fastest-growing segment⁷⁸ indicates ongoing infrastructure modernisation and operators' efforts to meet growing demand for high-speed internet. This, in turn, affects the quality and availability of services for end users and the opportunities for digital economy development in the country.

Websites of the largest providers:

- Orange Polska: <https://www.orange.pl> ¹⁰¹
- Play (including UPC): <https://www.play.pl> ¹⁰³
- Vectra: <https://www.vectra.pl>
- Netia: <https://www.netia.pl> ⁸⁶

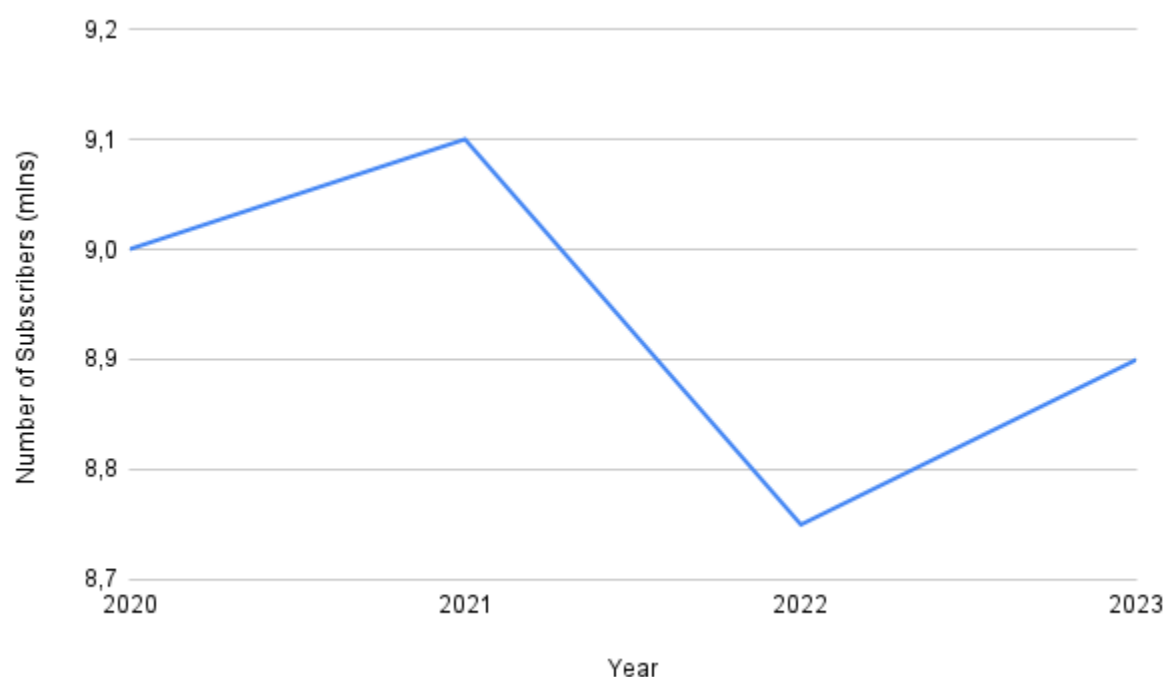
2.2.2. Mobile Internet

As of early 2025, there were 53.7 million active mobile connections in Poland, representing 140% of the country's total population.⁷⁰ It is important to note that this figure may include not only internet

access but also voice-only services and SMS, as well as account for users having multiple SIM cards. According to GSMA Intelligence, 97.1% of mobile connections in Poland as of January 2025 were classified as “broadband”, i.e., carried out via 3G, 4G, or 5G networks.⁷⁰ In 2023, mobile internet access services were provided by 102 operators.⁸⁴

The mobile internet market in Poland is characterised by a high level of penetration and active competition between the main operators. Saturation of mobile internet services provided through SIM cards in dedicated devices (modems, tablets) was 23.6% in 2023, representing a 0.4 percentage point increase compared to the previous year.⁸⁴

Chart 4: Dynamics of the number of mobile broadband subscribers in Poland (2020–2023)



The main players in the mobile communications and mobile internet market in Poland are Orange Polska, Play (P4), Polkomtel (Plus network operator), and T-Mobile Polska. Their market shares by number of mobile telephony users in 2022 were distributed as follows: P4 (Play) – 30.2%, Orange Polska – 26.6%, Polkomtel (Plus) – 20.4%, T-Mobile Polska – 19.2%.⁹⁶ In the dedicated mobile internet segment (by number of SIM cards in modems and tablets) in 2022 the shares were: Orange Polska – 34.8%, Polkomtel – 23.0%, P4 (Play) – 17.8%, T-Mobile – 6.1%.⁸⁰ In 2023, the leader in the number of mobile telephony users remained P4 (Play) with a 30.1% share.⁹³

Table 2: Largest dedicated mobile internet providers in Poland and their market shares (by number of users)

Year	Provider	Market share (%)
2020	Orange Polska	34,0%
2020	P4 (Play)	18,0%
2020	T-Mobile Polska	17,1%
2020	Polkomtel (Plus)	14,5%
2021	Orange Polska	~32%
2021	Polkomtel (Plus)	22,3%
2021	P4 (Play)	21,2%
2021	T-Mobile Polska	17,4%
2022	Orange Polska	34,8%
2022	Polkomtel (Plus)	23,0%
2022	P4 (Play)	17,8%
2022	T-Mobile Polska	6,1%

Note: Market share data may vary slightly depending on the methodology of UKE reports for different years. Data for 2023 on dedicated mobile internet market shares require clarification in the full UKE report.

Market saturation in mobile communications in Poland, where the number of SIM cards significantly exceeds the population size⁷⁰, indicates the widespread practice of users having multiple SIM cards as well as a growing number of M2M (machine-to-machine) connections.⁸⁰ Intense competition between mobile operators stimulates investment in the development of next-generation networks, particularly 5G, aimed at improving coverage, increasing data transmission speeds, and offering new services. Growth in the M2M segment indicates the development of the Internet of Things (IoT) market, opening prospects for new digital services and business models while simultaneously posing new challenges in cybersecurity and data privacy protection.

Websites of the largest providers:

- Orange Polska: <https://www.orange.pl> ¹⁰¹
- Play (P4): <https://www.play.pl> ¹⁰³
- Plus (Polkomtel): <https://www.plus.pl>
- T-Mobile Polska: <https://www.t-mobile.pl>

2.3. Internet Access Speed and Service Quality

Internet access speeds in Poland show steady growth in both the fixed broadband (ŠPD) and mobile segments. According to the Ookla Speedtest Global Index for March 2025, the median mobile internet download speed in Poland was 178.84 Mbit/s, and for fixed ŠPD – 273.13 Mbit/s.¹¹² These indicators placed Poland 34th in the world for mobile internet speed and 25th for fixed ŠPD speed.¹¹²

Reports from the Office of Electronic Communications (UKE) also confirm this positive trend. According to the UKE report for 2024, the average data download speed in Poland exceeded 130 Mbit/s, representing almost a 160% increase compared to 2020.¹¹⁴ Regional differences are observed: in 2024, the largest increase in download speed in fixed networks was recorded in Podlaskie Voivodeship (about 30%), while in mobile networks the largest growth was in Mazowieckie Voivodeship (49.5%).¹¹⁵ In Q4 2023, according to Ookla, among fixed ŠPD operators Play offered the highest median download speed (226.40 Mbit/s), while Netia had the lowest latency (16 ms).¹¹² In the mobile segment during the same period, T-Mobile led in median download speed (49.10 Mbit/s), and Plus (Polkomtel) in median 5G speed (133.34 Mbit/s).¹¹³

Significant progress in increasing internet access speeds is the result of active modernisation of telecommunications infrastructure by operators, including the expansion of fibre-optic networks and the introduction of 5G technology. This directly affects the quality of services provided, giving users access to more bandwidth-intensive services such as high-definition video streaming, cloud services, and online gaming. However, persistent regional disparities in access speeds¹¹⁴ indicate uneven development and the need for further targeted efforts to bridge the digital divide between different parts of the country. Leadership of different operators in various indicators (download speed, latency, 5G speed) testifies to differentiated investment strategies and the presence of competitive advantages for each, which overall contributes to market development.

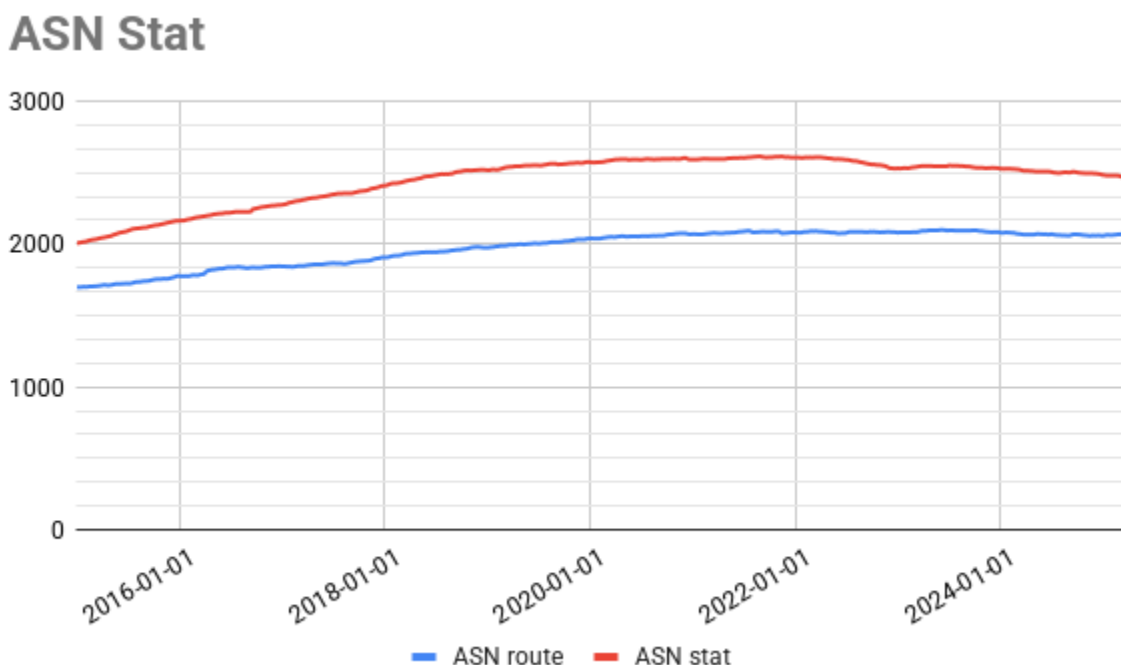
Sources of research:

1. Ookla Speedtest Global Index: <https://www.speedtest.net/global-index/poland> ¹¹²
2. Reports of the Office of Electronic Communications (UKE), e.g., for 2024, as cited in ITReseller and Telko.in.¹¹⁴
3. nPerf Barometer of Fixed Internet Connections in Poland (2024 analysis).¹⁰⁴

2.4. Development of Providers and Autonomous Systems

The development of internet infrastructure in Poland is accompanied by growth in the number of Autonomous Systems (AS). An autonomous system is a collection of IP networks and routers managed by one or more operators that have a unified routing policy with the internet. Data on the number of registered and announced AS in Poland is provided by RIPE NCC through the RIPEstat service.⁵²

The dynamics of the number of AS is an important indicator of the maturity and complexity of a country's internet ecosystem. An increase in the number of AS generally indicates growing competition among internet providers, the development of national and regional internet exchange points (IXP), and overall decentralisation and increased resilience of the national internet infrastructure. This process reflects the emergence of new market players, the expansion of existing networks, and the desire of large organisations to independently manage their network policy and routing.

Chart 5: Dynamics of Autonomous Systems in Poland (2015–2025)

Dynamics of the number of autonomous systems in Poland (2015–2025):

1. **Active growth phase:** From 2016 to approximately 2022, there was steady and stable growth in both the total number of registered autonomous systems (ASN stat) and the number of systems announced in the global routing table (ASN route). This indicates active development of internet infrastructure, the emergence of new internet providers, hosting companies, and large corporate networks.
2. **Saturation and stabilisation:** Since approximately 2022, growth rates have slowed, and the graph has entered a “plateau” phase. The total number of registered AS even shows a slight decline. This is a characteristic sign of a mature market where the main players have already formed, and mergers and acquisitions (M&A) processes may lead to a reduction in the total number of independent systems.
3. **High utilisation efficiency:** From the provided data (2,461 total and 2,066 in routing), it follows that about 84% of all autonomous systems registered in Poland are actively used and routed. This is a high indicator, speaking of a healthy state of the internet ecosystem where most registered networks actually function.

When analysing the number of autonomous systems per capita, Poland demonstrates very high indicators and occupies one of the leading places in the region. With approximately 65.3 AS per million inhabitants, it surpasses many countries. For comparison, in neighbouring Germany this indicator is almost twice lower – about 34.6 AS per million people, which may indicate greater market concentration among large players. Poland also outperforms Ukraine (about 56.5 AS per million inhabitants) and Slovakia (about 41.6 AS). The closest indicators to Poland are in Czechia, with about 68.3 AS per million inhabitants. The regional leader is Lithuania with approximately 78.1 AS per million inhabitants.

Thus, it can be concluded that a mature, highly competitive, and decentralised internet market has formed in Poland. The phase of extensive growth associated with connecting new networks has largely been completed, giving way to stabilisation and qualitative development.

Table 3: Top 10 largest Autonomous Systems in Poland

#	Number of AS	Name	Web Site	Foreign neighbour count	Local neighbour count	Total neighbour count	Foreign neighbours share
1	12741	Netia	https://www.netia.pl	106	417	523	20%
2	201054	EPIX-PoIMix	https://www.epix.net.pl	17	415	432	4%
3	29535	Orange Polska	https://www.hurt-orange.pl/	69	276	345	20%
4	20804	EXATEL SA	https://www.exatel.pl	94	248	342	27%
5	50607	EPIX-KTW-GlobalMix		13	317	330	4%
6	206499	ONEMANISP NEXT GENERATION	https://m-m-networks.net	291	4	295	99%
7	5617	Orange Polska - TPNET	http://www.orange.pl	6	281	287	2%
8	12912	T-Mobile Polska	http://www.t-mobile.pl	70	206	276	25%
9	62081	EPIX-WAW-GlobalMix		12	260	272	4%
10	50263	1-IX EU Internet Exchange	https://1-ix.eu	188	9	197	95%

Analysis of the table allows the following conclusions about the structure of the Polish internet:

1. Diverse and competitive ecosystem The top 10 includes players of three different types, indicating a mature and healthy market structure:
 - **Large telecommunications operators:** Netia (AS12741), Orange Polska (AS29535 and AS5617), T-Mobile Polska (AS12912), EXATEL SA (AS20804). These are backbone providers and suppliers of internet access to end users.
 - **Internet exchange points (IXP):** The EPIX family (PolMix, KTW-GlobalMix, WAW-GlobalMix) and 1-IX EU Internet Exchange. Their high ranking underscores the critically important role of IXPs in the Polish network for ensuring local connectivity.
 - **International transit operators:** ONEMANISP NEXT GENERATION (AS206499) and 1-IX EU (AS50263) stand out as key gateways for access to the global network.
2. Clear division of roles and peering strategies Analysis of the ratio of local to foreign peers shows different business models:
 - **Focus on international transit:** ONEMANISP (99% foreign peers) and 1-IX (95%) are almost entirely focused on providing access to foreign networks. They serve as the main “bridges” between the Polish internet and the rest of the world, ensuring international connectivity for their clients.
 - **Focus on the domestic market:** EPIX exchange points (only 4% foreign peers) and the Orange Polska – TPNET network (2%) have an overwhelming majority of local connections. Their main task is to exchange traffic inside Poland as efficiently and cheaply as possible, connecting hundreds of local operators. This reduces latency and the cost of content delivery for Polish users.
 - **Balanced strategy:** Large operators such as Netia (20% foreign), Orange Polska (20%), EXATEL (27%), and T-Mobile (25%) adhere to a hybrid model. They maintain a large number of both local peering connections (for fast domestic communication) and foreign ones (to provide their clients with access to the global internet).

General conclusions:

- **High degree of local connectivity:** The strong presence and large number of local participants at EPIX exchange points indicates that a significant portion of traffic in Poland remains within the country, increasing speed and national network resilience.
- **No monopoly on international access:** The presence of several powerful players with a high share of foreign connections (ONEMANISP, 1-IX, EXATEL) indicates healthy competition in the international transit segment and no dependence on a single provider.

- **Infrastructure maturity:** The top-10 structure, where powerful and independent exchange points and transit operators stand alongside traditional telecom giants, is a sign of a developed and competitive internet market, fully confirming the conclusions drawn from the previous chart.

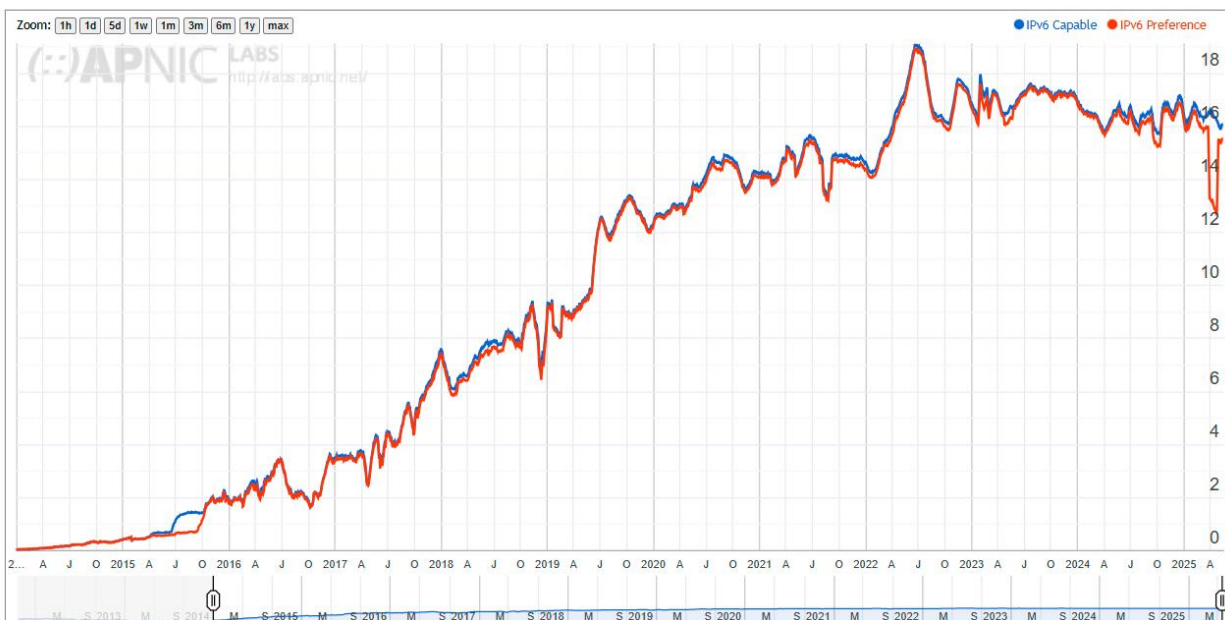
2.5. IPv6 Penetration

The transition to Internet Protocol version 6 (IPv6) is a global necessity due to the exhaustion of IPv4 address space. The level of IPv6 adoption serves as an indicator of a country's technological modernisation of internet infrastructure and its readiness for further network growth. In Poland, according to APNIC Labs data for March 2020, the IPv6 usage level (V6 Use ratio) was 12.90%, corresponding to approximately 4 million IPv6 users out of a total of 31.1 million internet users.¹⁴³ RIPE NCC data for September 2019 indicated an IPv6 penetration level in Poland of 11.2%.⁷³

Although these figures indicate the presence and gradual growth of IPv6 adoption, the pace of this process in Poland may be lower than in some other European Union countries.⁷³ Slow IPv6 adoption may in the long term lead to technical limitations for the growth of connected devices, complicate network configurations due to the need for widespread use of network address translation (NAT) technologies, and potentially affect the competitiveness of the Polish internet segment and the availability of new internet services. Data from ipv6-test.com show the overall dynamics of IPv6 and IPv4 protocol support, as well as statistics on providers supporting IPv6, where Orange Polska is one of the notable operators in terms of the number of tests and unique IPv6 addresses.⁷³

Chart 6: Dynamics of IPv6 penetration in Poland (2015–2025)

Use of IPv6 for Poland (PL)



Source: stats.labs.apnic.net

2.6. Connectivity Index

Two key indicators based on the analysis of pairwise connections (peerings) between Autonomous Systems (AS) are used to assess the level of integration of an internet segment.

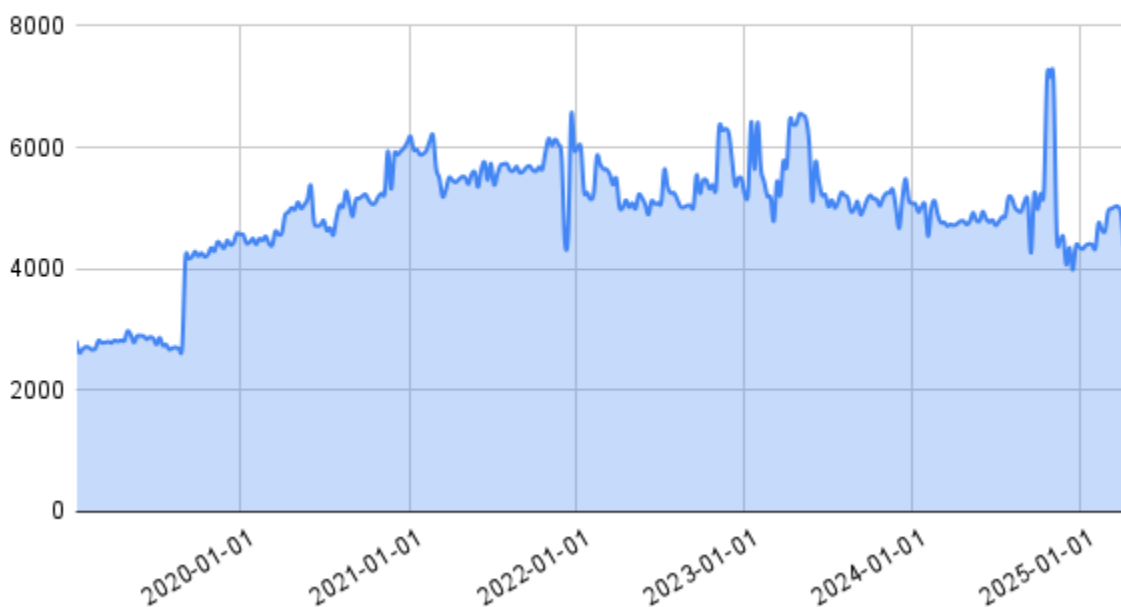
Global Connectivity Index: This index represents the total number of unique connections between each local AS and each external (foreign) AS. Essentially, it measures how widely and diversely the internet segment is connected to the rest of the world. The higher this indicator, the more “windows” the country has to the global network.

Local Connectivity Index: This index is calculated as the total number of unique connections between different local Polish AS. It reflects the intensity and complexity of the domestic internet market, particularly activity at internet exchange points (IXP). A high indicator indicates a developed internal ecosystem that allows efficient traffic exchange within the country, minimising latency and dependence on external channels for local data.

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

Chart 7: Dynamics of global connectivity of Polish Autonomous Systems (2019–2025)

Global connectivity statistics

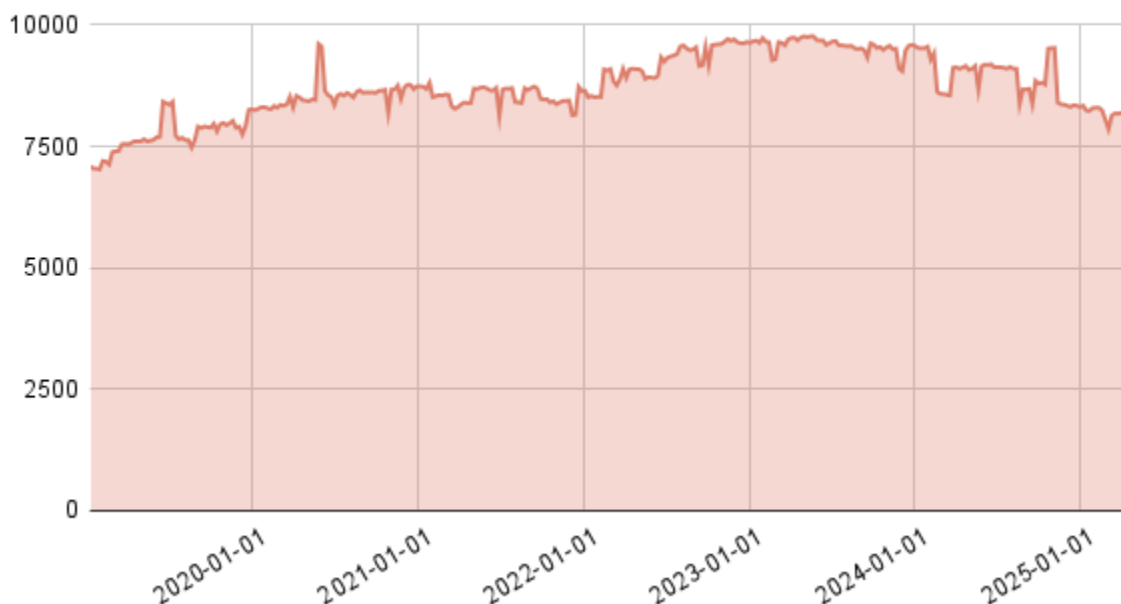


The chart shows that the number of unique connections of Polish networks with foreign ones sharply increased during 2020, rising from approximately 3,000 to 6,000. This indicates rapid growth in Poland's integration into the global internet. After this peak, from 2021 to 2025, the indicator stabilised in the range of 4,500 to 6,500 connections, showing high volatility but no sustained growth. Such dynamics indicate that Polish operators have reached a mature level of international connectivity, having diversified their connections, and the market is now in a state of saturation.

Using the latest data (approximately 4,500–5,000 global connections) and the total number of active AS (2,066), it can be calculated that on average each autonomous system in Poland has 2.2–2.4 foreign routes. This is a moderate indicator, reflecting that while international channels are well developed, the main focus of connectivity lies within the country.

Chart 8: Dynamics of local connectivity of Polish Autonomous Systems (2019–2025)

Local connectivity statistics

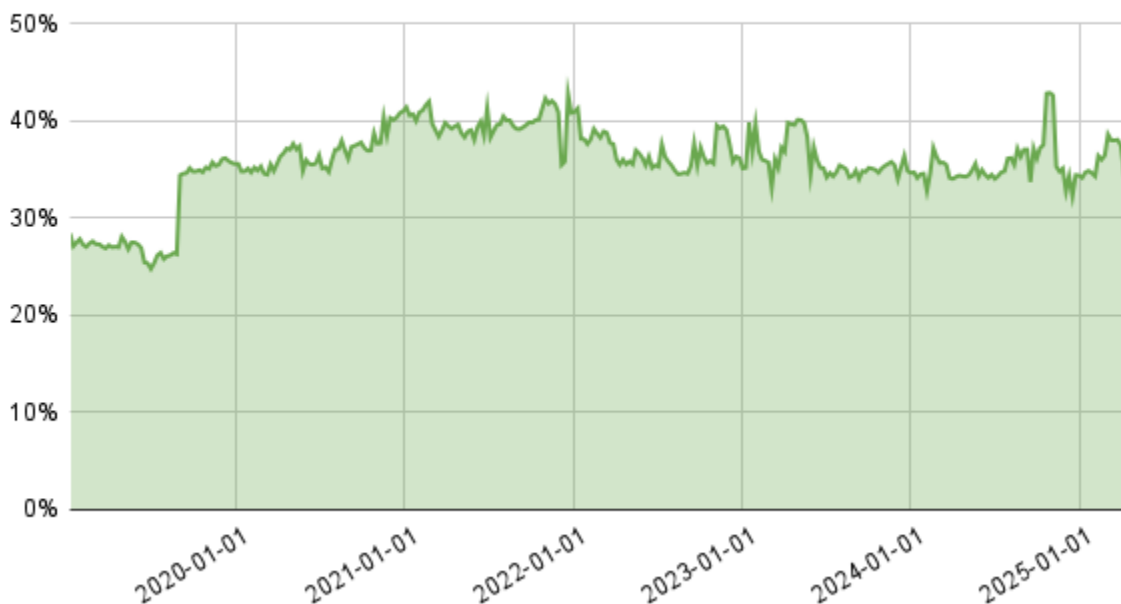


The local connectivity index demonstrates smoother and more sustained growth. Starting from around 7,500 in 2019, it gradually increased and stabilised at a very high level, exceeding 9,000–9,500 connections by 2023, with a subsequent slight correction. This directly indicates the development and increasing complexity of the domestic internet market. Operators are actively establishing direct connections with each other, primarily through internet exchange points (IXP) such as EPIX, making the national network faster, cheaper, and more resilient.

The number of internal connections (~8,000–8,500 at the end of the period) significantly exceeds the number of external ones. On average, each active AS (2,066) has approximately 3.9–4.1 internal routes. This is a high indicator confirming the presence in Poland of a self-sufficient and well-connected internal internet ecosystem.

Chart 9: Dynamics of the ratio of global to local connectivity of Polish Autonomous Systems (2019–2025)

Total connectivity share



This chart shows the share of global connections in the total number of all connections and is key to understanding the strategic orientation of the network. In 2020, the share grew from 25% to almost 40%, coinciding with the period of rapid connection to global networks. However, since 2021 the indicator has stabilised in the range of 35–40%. This means that approximately two-thirds of all connections established by Polish operators are internal, and only one-third are international.

Such a ratio is a sign of a balanced and healthy network architecture. The Polish internet is not merely a “pipe” for access to foreign resources; it has a powerful internal core for exchanging local traffic while maintaining broad and diversified integration into the global network. This ensures both fast access to global content and high speed and reliability for domestic services.

3. Internet Legislation

3.1. Principles of Internet Governance

The principles of internet governance in Poland, like in most European Union countries, are shaped by both national legislation and pan-European norms and directives. It is assumed that Poland adheres to the multi-stakeholder model of internet governance, in which government, the private sector (telecommunications operators, technology companies), the technical community (e.g., NASK as the .pl domain administrator), and civil society participate in policy development and regulation. However, the degree of real influence of each of these parties and the balance between them require detailed study.

A key aspect is compliance with fundamental rights and freedoms such as freedom of expression, access to information, and protection of personal data in the digital environment. European regulatory acts such as the General Data Protection Regulation (GDPR), the Digital Services Act (DSA), and the Digital Markets Act (DMA) have a direct or indirect influence on Polish legislation and its application practice. Assessing how effectively these principles are implemented in practice and what challenges exist is an important task for understanding the state of digital rights in the country.

3.1.1. Regulation

Internet regulation in Poland covers a wide range of issues, including the activities of telecommunications service providers, national domain management, protection of intellectual property rights, combating cybercrime, personal data protection, and content regulation. The main legislative frameworks are likely laid down in the Telecommunications Law (Prawo telekomunikacyjne) and the Act on Providing Services by Electronic Means (Ustawa o świadczeniu usług drogą elektroniczną), as well as in specialised acts concerning, for example, cybersecurity or data protection.

The regulation process most likely involves the development of draft laws by relevant ministries (e.g., the Ministry of Digital Affairs), their discussion and adoption by parliament (Sejm and Senate), signing by the President, and subsequent oversight of implementation by authorised state bodies such as the Office of Electronic Communications (UKE) and the Personal Data Protection Office (UODO). Judicial bodies that hear disputes and offences in the digital sphere also play an important role.

For a detailed understanding, it is necessary to analyse specific legislative acts and the practice of their application.

3.1.2. Regulatory Authorities and Responsible Persons

The key bodies responsible for internet regulation in Poland are presumably:

- **Ministry of Digital Affairs (Ministerstwo Cyfryzacji):** responsible for shaping state policy in the field of informatisation, development of the digital society, telecommunications, and cybersecurity.
- **Office of Electronic Communications (Urząd Komunikacji Elektronicznej – UKE):** the national regulatory authority in the field of telecommunications and postal services. UKE is responsible for regulating the telecommunications services market, managing the radio frequency spectrum, ensuring competition, and protecting consumer rights.
- **Personal Data Protection Office (Urząd Ochrony Danych Osobowych – UODO):** the supervisory authority responsible for compliance with personal data protection legislation, including GDPR.
- **NASK State Research Institute (NASK Państwowy Instytut Badawczy):** in addition to administering the .pl domain, NASK also plays a role in ensuring cybersecurity, particularly through its CERT Polska (CSIRT NASK) unit, which handles responses to cybersecurity incidents.¹⁴⁹

To obtain accurate and up-to-date information about the heads of these bodies and links to their official profiles, additional search on the official websites of the specified institutions is required.

3.2. Market Monopolisation

The issue of monopolisation of the telecommunications and internet services market in Poland is a subject of attention for both national regulators and European structures. Telecommunications legislation likely contains anti-monopoly provisions aimed at ensuring fair competition and preventing the dominance of individual players. The Office of Electronic Communications (UKE) must oversee compliance with these norms, analyse the state of competition in various market segments, and, if necessary, apply regulatory measures.

Despite the presence of a large number of registered operators (e.g., 2,225 fixed internet access providers in 2023⁷⁸), in practice a significant market share in both fixed and mobile internet is concentrated in the hands of a few large players. In the fixed broadband segment these are Orange Polska, Play (after acquiring UPC Polska), Vectra, and Netia.⁷⁹ In the mobile segment, the dominant players are Orange Polska, Play (P4), Polkomtel (Plus), and T-Mobile Polska.⁹⁶

Consolidation processes such as Play’s acquisition of UPC Polska⁵² may strengthen tendencies toward market concentration. While such transactions can lead to the creation of stronger players capable of investing in infrastructure development, they also carry risks of weakening competition, which can negatively affect prices and consumer choice. Assessing the actual level of monopolisation and its impact on the market requires a detailed analysis of market shares, barriers to entry for new players, and the practice of applying anti-monopoly legislation.

3.3. Internet Shutdowns on Government Orders

The issue of the possibility of shutting down the internet on government orders is critically important for assessing the state of digital rights. The legislation of many countries contains provisions allowing state authorities to intervene in the operation of communications networks in emergency situations such as threats to national security, public order, or during natural disasters. However, such powers must be clearly regulated, have strict legal frameworks, and guarantees against abuse.

For Poland, it is necessary to study the relevant legislative acts (e.g., laws on states of emergency, counter-terrorism, activities of special services) for the presence of norms that could be used for complete or partial internet shutdowns or blocking of individual communication services. It is important to determine which authorities are empowered to make such decisions (e.g., the government, the minister of internal affairs, the minister of defence, the head of a special service), on what grounds this is possible (an exhaustive list of reasons), what the procedure is for making and executing such decisions, including the necessity of judicial oversight or subsequent parliamentary supervision.

The absence of clear and narrowly defined grounds, as well as transparent procedures and control mechanisms, creates risks of arbitrary use of such powers to suppress dissent, restrict freedom of speech, and access to information, especially during periods of political tension or public protests. International human rights standards emphasise that any restrictions on internet access must be strictly necessary, proportionate to the legitimate aim pursued, and provided for by law that is accessible and predictable.

3.4. Legislation on “Words on the Internet”

Legislation concerning liability for statements on the internet, including the so-called “dissemination of fakes” (disinformation), is one of the most sensitive areas from the point of view of digital rights. In Poland, like in many other countries, there are general norms of criminal and civil

law that can be applied to online content, such as articles on defamation, insult, incitement to hatred. However, of particular interest is the presence or absence of special legislation aimed specifically at combating disinformation on the internet.

It is necessary to analyse Polish legislation for the definition of the concept of “fake” or “disinformation”, if such exists. It is important to understand what criteria are used to qualify information as false or misleading, what level of intent or negligence is required for liability, and which subjects can be held liable (individuals, media, online platforms). It is also necessary to study the sanctions provided (fines, imprisonment, resource blocking) and the procedure for bringing to responsibility, including the role of law enforcement agencies and the judicial system.

Particular attention should be paid to how such legislation correlates with international standards of freedom of speech. Excessively broad or vague definitions of “fakes”, as well as disproportionately strict sanctions, can lead to a “chilling effect” on freedom of expression, self-censorship, and the use of such laws to persecute critics of the authorities, journalists, and activists. It is important that any measures to combat disinformation are aimed at protecting legitimate interests (e.g., public safety, public health) and are not used to suppress legitimate criticism or restrict access to diverse information. Analysis of judicial practice and reports from human rights organisations can provide insight into how such laws are applied in practice.

3.5. Legislation on Internet Blocking

A general analysis of the legislation governing internet resource blocking in Poland requires an examination of the legal framework defining the grounds, procedures, and entities authorized to make blocking decisions. As a member of the European Union, Poland is obligated to comply with European human rights standards, including the right to freedom of expression and access to information, which should be reflected in national legislation on blocking.

There are likely legal provisions allowing for the blocking of certain categories of content, such as child pornography, terrorist-related material, or illegal gambling. It is important to analyze how clearly these categories are defined, what the blocking decision-making process is (judicial or administrative), and whether there are mechanisms for notifying resource owners and appealing such decisions. Transparency and the availability of effective legal remedies are key to preventing abuse and protecting digital rights.

3.5.1. Legislation

The existence of legislation on blocking internet resources in Poland is beyond doubt, given the general trends of internet regulation in European countries. The main provisions are most likely contained in the Telecommunications Law, the Act on Providing Services by Electronic Means, as well as in specialised laws, for example, concerning the fight against online gambling or countering certain types of illegal content.

It is necessary to study these legislative acts in detail to determine:

- **Grounds for blocking:** What categories of content or types of online activities can serve as grounds for blocking (e.g., copyright infringement, dissemination of prohibited information, extremist materials, illegal online casinos).
- **Subjects initiating blocking:** Which state bodies or private organisations have the right to demand blocking of resources (e.g., police, prosecutor's office, courts, special regulatory bodies, copyright holders).
- **Bodies making blocking decisions:** Who is authorised to make the final decision on blocking – a court or an administrative body.
- **Responsibility of providers:** What obligations are imposed on internet providers to execute blocking decisions.

Analysis of these aspects will allow assessment of how well Polish blocking legislation complies with international human rights standards, in particular the principles of necessity, proportionality, and legality of restrictions on freedom of information.

3.5.2. Blocking Procedures

The procedure for blocking internet resources in Poland, as described in legislation, should include several stages. Initiation of the procedure can most likely come from authorised state bodies (e.g., police, prosecutor's office, specialised agencies) or, in some cases (e.g., copyright infringement), from private individuals or organisations through judicial instances.

A key point is the decision-making process on blocking. Ideally, such a decision should be made by an independent judicial body based on the evidence presented and in compliance with procedural guarantees for all parties, including the resource owner. However, in some cases legislation may provide for an administrative blocking procedure for certain content categories (e.g., obvious child pornography or websites of illegal gambling entered into a special register). It is important to find

out whether mechanisms are provided for notifying owners of blocked resources and giving them the opportunity to challenge the decision before or after its execution.

After a blocking decision is made, it is sent to internet providers for technical implementation. Legislation should determine the technical methods of blocking (e.g., by IP address, URL, DNS filtering) and the responsibility of providers for non-execution of such decisions. Provisions on the duration of blocking and procedures for its lifting in case of elimination of violations or change of circumstances are also important.

3.5.3. Registries of Blocked Internet Resources

In Poland there is at least one official public registry of blocked resources – the Registry of Domains Used to Offer Gambling Games Contrary to the Act (*Rejestr Domen Służących do Oferowania Gier Hazardowych Niezgodnie z Ustawą*). This registry is maintained by the Ministry of Finance on the basis of the Gambling Act. Internet providers are obliged to block access to domains included in this list, and financial institutions must cease servicing payments related to these domains.

The question of the existence of other official but possibly classified registries used, for example, by special services to block resources related to terrorism or other threats to national security requires deeper investigation. International practice shows that such lists may exist, but their opacity and lack of control mechanisms raise serious human rights concerns.

In addition to official ones, there may also be unofficial lists or databases formed by public organisations or researchers that track blocking cases in the country. Analysis of such unofficial resources can provide additional insight into the scale and nature of internet censorship, if any.

As already mentioned, Poland operates an official **Registry of Domains Used to Offer Gambling Games Illegally (*Rejestr Domen Służących do Oferowania Gier Hazardowych Niezgodnie z Ustawą*)**. It is publicly available on the website of the Polish Ministry of Finance.

- **Link:** hazard.mf.gov.pl (the link and availability need to be checked at the time of report preparation).
- **Description of operation:** The registry contains a list of domain names which, according to the Ministry of Finance, are used to organise and conduct gambling games in violation of Polish law. Internet providers are obliged to block access to them within 48 hours of entry into the registry. Users attempting to access such a site usually see a blocking message. The

registry is regularly updated. Entry into the registry and subsequent blocking are an administrative procedure.

Apart from this official registry, information about other systematised and publicly available official lists of blocked resources on other grounds (e.g., copyright infringement, extremism) is absent in the provided materials and requires additional search.

Unofficial projects tracking blockings may exist thanks to the efforts of civil society or academic researchers. For example, projects similar to OONI (Open Observatory of Network Interference) collect data on internet censorship worldwide, including Poland. Such resources aggregate test results conducted by volunteers and can reveal cases of site blocking not reflected in official registries. Analysis of OONI data for Poland can show which categories of sites (news, human rights, social networks, VPN services, etc.) are subject to blocking and by what methods this is carried out.

3.5.4. Development of Blockings

Analysis of the dynamics of blockings in Poland indicates a gradual complication of the regulatory environment, where technological development runs parallel to increased content control. Although there is no mass political censorship in the country characteristic of authoritarian regimes, there are clear tendencies toward expanding the practice of blocking and creating legislative mechanisms that can be used to restrict freedom of speech.

At present, Poland systematically and legally applies blocking with respect to websites offering illegal gambling. This is carried out through the Ministry of Finance maintaining a public registry on the basis of which internet providers are obliged to restrict access to domains. This system demonstrates the existence of a well-functioning technical and legal infrastructure for centralised blocking that could potentially be scaled to other content categories.

Key concerns are related to legislative initiatives on combating “disinformation” and “hate speech”. For example, in January 2025 the Ministry of Digital Affairs proposed a bill to implement the European Digital Services Act (DSA) that gave the head of the Office of Electronic Communications (UKE) the right to remove content from the internet by administrative decision without a prior court ruling. Although such initiatives are presented as measures to protect the information space, they carry risks of abuse and the introduction of censorship to suppress independent or opposition voices.

Data from independent observers such as OONI (Open Observatory of Network Interference) show anomalies in access to individual resources but do not indicate widespread and systematic political blocking as of early 2025. Nevertheless, the political context, especially after the change of power at the end of 2023 and the subsequent conflicts around public media, creates a tense atmosphere conducive to increased information control.

The most likely development scenario is not the introduction of total censorship but a gradual tightening of control through legislative regulation.

Expansion of grounds for blocking:

1. **The practice of blocking gambling sites** will most likely be recognised as successful and may be extended to other areas such as mass copyright infringement, sale of counterfeit goods, or unlicensed medicines. Formally, this will comply with pan-European trends.
2. **Combating disinformation as a pretext:** The main battleground will be content regulation under the pretext of combating disinformation, especially in the context of geopolitical tension. New laws can be expected that will give state bodies more powers for rapid response to “hostile content”. The risk lies in the fact that definitions of “disinformation” and “hate speech” may be vague, allowing them to be used to pressure undesirable media and activists.
3. **Increasing role of administrative bodies:** A shift in emphasis from judicial to administrative blocking procedures is forecast. This speeds up the process but reduces the level of legal protection and creates opportunities for arbitrary decisions. The future will show whether the judicial system and civil society can effectively resist this trend.

In the end, the Polish internet will become increasingly regulated. Formally, this will be aimed at creating a safer digital environment in accordance with EU norms, but in practice it will create tools that, with a certain political will, can be used to restrict access to information and suppress criticism.

4. Human Rights Violations on the Internet

In Poland, as in many other countries, there are concerns regarding the observance of human rights on the internet. These concerns may relate to various aspects, including freedom of expression, the right to access information, privacy, and protection from unjustified persecution for online activity. Although Poland is a member of the European Union and bound by its human rights

standards, the practice of applying national legislation and the actions of authorities may raise questions among human rights defenders.

The period from 2019 to 2025 covers the time of rule by various political forces, which could affect approaches to regulating the internet space and observance of digital rights. Particular attention should be paid to potential cases of pressure on independent media, persecution of activists for their online statements, as well as issues related to state surveillance and personal data protection.

4.1. Internet Shutdowns on Government Orders

Information about cases of complete internet shutdowns (shutdowns) at the national or regional level in Poland in the period from 2019 to 2025 is absent in the provided materials. To answer this question, a thorough study of reports from international organisations such as Access Now (the #KeepItOn project), NetBlocks, as well as media reports and human rights groups specialising in monitoring internet freedom is required.

Although complete internet shutdowns in EU countries are extremely rare due to high human rights standards and the rule of law, the possibility of local or short-term disruptions in communications networks that could be interpreted as deliberate actions cannot be ruled out. It is also important to analyse legislation for the presence of authorities' powers to shut down the internet in emergency situations and the procedures for their application (see section 3.3). The absence of documented shutdown cases does not mean the absence of other, less radical forms of restricting access to information.

4.2. Criminalization of Statements on the Internet

The issue of criminalization of statements on the internet in Poland requires a detailed analysis of judicial practice and reports from human rights organizations. General provisions of the Polish Criminal Code, such as articles on defamation (art. 212), insult (art. 216), public insult of the president (art. 135 § 2), incitement to hatred (art. 256, 257), can be applied to statements made on the internet as well. It is important to determine how often and on what grounds criminal or administrative cases were initiated against citizens for their posts on social networks, comments on forums, or publications on personal sites.

Special attention should be paid to cases that may have had a political undertone or were aimed at suppressing criticism of the authorities or influential persons. It is necessary to find the most resonant cases, describe their essence, the legal qualification of the actions of the accused, and

the court decisions rendered (fines, prison terms, suspended sentences). Sources of such information can be reports from Amnesty International, Human Rights Watch, Article 19, the Committee to Protect Journalists (CPJ), as well as Polish NGOs, such as the Helsinki Foundation for Human Rights or the Panoptykon Foundation.

4.3. Persecution of Media and NGOs

Cases of persecution of mass media (media) and non-governmental organizations (NGOs) for their activities on the internet or online publications are a serious indicator of the state of freedom of speech and digital rights in the country. In Poland during the period from 2019 to 2025, especially during the rule of the "Law and Justice" party (until the end of 2023), concerns about pressure on independent media were repeatedly expressed.

This pressure could take various forms:

- **Financial pressure:** For example, through redistribution of state advertising in favor of loyal media and denial of it to critically oriented publications.
- **Legislative initiatives:** Attempts to change media legislation in a way that strengthens state control over the media (for example, the "Lex TVN" bill directed against the TVN channel owned by the American company Discovery).
- **Judicial lawsuits (SLAPP lawsuits):** Use of lawsuits for defamation and protection of business reputation by state officials or companies associated with the state against journalists and publications that publish critical materials.
- **Restriction of access to information:** Denials of accreditation or provision of information to journalists from independent media.

NGOs engaged in human rights activities, monitoring of authorities' actions, or criticizing government policy could also face pressure, including inspections, funding cuts, or negative campaigns in state media.

5. Civil Society in the Field of Internet Governance

Civil society in Poland plays a certain role in issues related to digital rights, internet freedom, and governance of the global network. There are a number of non-governmental organizations (NGOs), expert groups, and academic initiatives that engage in monitoring legislation, human rights activities, improving digital literacy, and advocating for users' interests. These organizations often

criticize legislative initiatives that restrict digital freedoms, conduct research, publish reports, and participate in public consultations.

The activity of civil society can manifest in campaigns against censorship, protection of privacy on the network, promotion of open access to information, and countering state surveillance. However, the effectiveness of their activities may depend on the overall political climate in the country, availability of funding, and level of interaction with state bodies. In periods of increased state control over the information space, the role of such organizations becomes particularly important.

5.1. Organizations

Several organizations operate in Poland that deal with protecting citizens' rights on the internet and issues of internet regulation. Among them, the following can be highlighted:

- **Fundacja Panoptikon (Panoptikon Foundation):** One of the leading Polish NGOs dealing with human rights issues in the context of modern surveillance technologies. The foundation analyzes legislation, conducts research, educational campaigns, and advocates for the protection of privacy, freedom of information, and against excessive surveillance.
 - Website: <https://panoptikon.org/>
- **Helsińska Fundacja Praw Człowieka (Helsinki Foundation for Human Rights in Poland):** Although this is an organization with a broader mandate in the field of human rights, it also deals with issues of freedom of speech, including on the internet, and provides legal assistance in cases of violations of these rights.
 - Website: <https://www.hfhr.pl/>
- **Internet Society Poland (ISOC Polska):** The Polish branch of the international Internet Society, which deals with promoting an open, globally connected, secure, and trustworthy internet. The organization may participate in discussions on issues of internet governance and standards.
 - Website: (It is necessary to find the current website if it is active)
- **Centrum Cyfrowe (Digital Center):** An organization working at the intersection of technology, society, and culture. It deals with issues of openness (open access, open data, open education), digital competencies, and public participation in the digital world.
 - Website: <https://centrumcyfrowe.pl/>

In addition, individual lawyers, academic researchers, and investigative journalists also contribute to the protection of digital rights and analysis of internet regulation in Poland.

5.2. VPN and Means of Bypassing Blocks

The use of VPN (Virtual Private Networks) and other means of bypassing blocks in Poland is likely widespread among users seeking to ensure their anonymity, protect privacy, access geoblocked content, or bypass potential restrictions on access to information. Although Poland is an EU member with a relatively high level of internet freedom, interest in such tools may increase during periods of public discussions about possible tightening of internet regulation or when concerns arise regarding surveillance.

General awareness of VPN and their capabilities is likely higher among technically advanced users, youth, and those who follow news in the field of digital rights and cybersecurity. The availability of both paid and free VPN services, as well as other tools such as proxy servers or the Tor browser, provides users with technical opportunities to bypass restrictions.

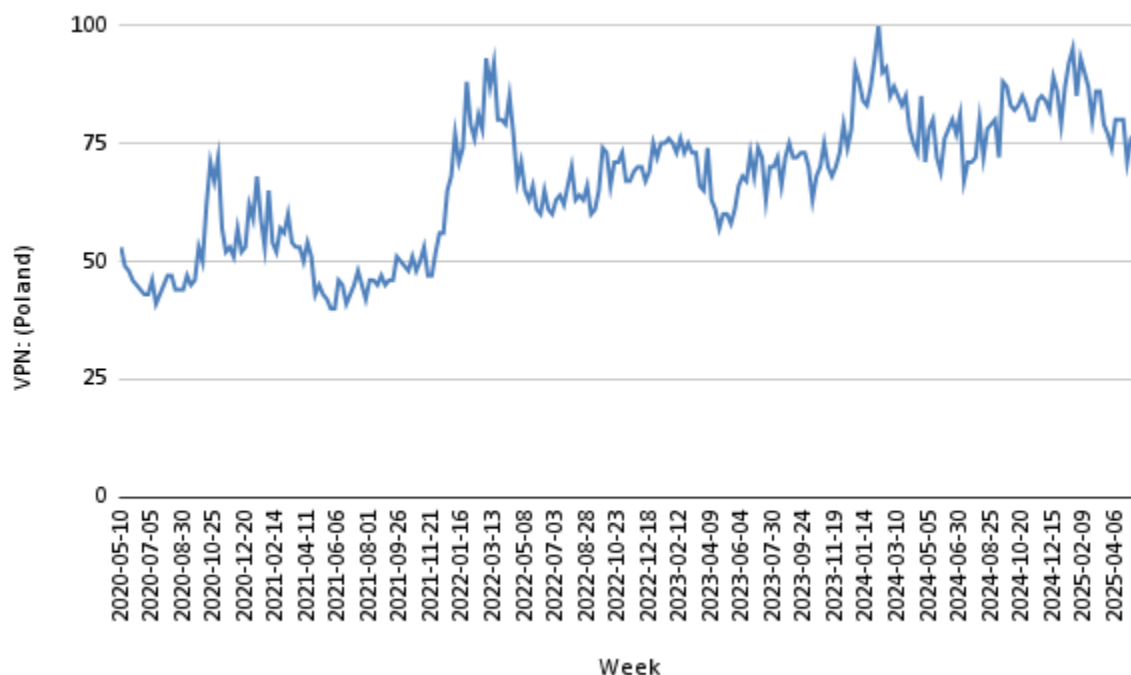
5.2.1. Status of VPN Services

At present, the use of VPN services is legal for ordinary users in Poland. There is no special legislation that would directly prohibit or significantly restrict the use of VPN for purposes of ensuring privacy, security, or bypassing geoblocks. Poland, as a member of the European Union, adheres to general principles of freedom of access to information and protection of privacy, which indirectly supports the legality of using such tools.

However, as in other countries, using VPN to commit illegal actions (for example, cybercrimes, copyright infringement) does not exempt from responsibility according to current legislation. Advertising and selling VPN services in Poland are also not prohibited and are carried out freely. There are no data on special laws regulating specifically advertising or selling VPN; these processes are subject to general rules of commercial activity and advertising.

5.2.2. Number of VPN Users

Exact data on the number of VPN users in Poland and their dynamics by years (2019–2025) are difficult to obtain from publicly available official sources, as VPN use is often associated with the desire for anonymity. Estimates may be provided by commercial VPN providers or research companies specializing in internet market analysis.

Chart 10: Dynamics of the Number of Search Queries about VPN in Poland (2020–2025)

Source: trends.google.com

For the period from 2020 to 2025, there is an overall trend toward growth in the base level of interest in VPN. If in 2020–2021 the low points of the graph were in the region of 40–50 conditional units, then by 2024–2025 they shifted to the range of 60–75. This speaks of a gradual growth in public awareness of issues of digital privacy, cybersecurity, and possibilities of bypassing geoblocks. Interest in VPN has ceased to be niche and has become mass.

Analysis of peaks and their possible causes

The graph has a pronounced peak character, where surges of interest are closely correlated with specific events.

1. **Peak in February–March 2022:** This is the highest and sharpest jump on the entire graph. It is almost unambiguously associated with the **full-scale invasion of Russia into Ukraine on February 24, 2022**. Poland became the main hub for Ukrainian refugees and the center of regional reaction to the war. During this period, the need for secure communication, protection from cyber threats sharply increased, as well as access to information for people

in Russia and Belarus (where blocks were introduced) and arriving from these countries to Poland.

2. **Peak at the end of 2023 - beginning of 2024:** This surge coincides with the period after the **parliamentary elections in Poland in October 2023** and the subsequent change of power. Such periods of political turbulence and public debates, especially concerning control over state media, often cause citizens concerns about surveillance and freedom of information, which stimulates interest in protection tools such as VPN.
3. **Peaks in 2020-2021:** Less pronounced but noticeable surges in this period may be associated with **mass protests in Poland (for example, against tightening the abortion law in the fall of 2020)** and the political **crisis in neighboring Belarus after the August 2020** elections. Events in Belarus, accompanied by mass internet shutdowns and blocks, raised awareness of the role of VPN in ensuring access to information in crisis situations in Poland as well.

Data on targeted blocks of VPN services at the state level in Poland are absent in the provided materials. Technically, blocking VPN services can be carried out by various methods, including blocking IP addresses of known VPN servers, blocking ports used by VPN protocols, or deep traffic analysis (DPI) to detect and block VPN connections. However, such measures are technically complex, can affect legitimate traffic, and are usually applied in countries with a high level of internet censorship. At present, there are no grounds to believe that systematic large-scale blocks of VPN services are applied in Poland.

5.2.3. Cases of Persecution for Using VPN

Information about cases of persecution of citizens or organizations in Poland solely for the fact of using VPN for legal purposes (for example, privacy protection, access to geoblocked content) is absent in the provided materials and unlikely, given the current legal status of VPN in the country. Using VPN in itself is not an offense.

However, if VPN is used to commit illegal actions, such as dissemination of prohibited content, cyberattacks, fraud, or serious copyright infringements, then persons who committed these actions may be held liable in accordance with general norms of criminal or civil legislation. In such cases, using VPN may be considered as a tool for committing an offense or a means of concealing traces, but not as an independent offense.

To obtain information about possible cases where using VPN figured in the context of investigating other crimes, or about persecution of organizations providing VPN services, if such took place (for

example, for refusal to cooperate with law enforcement agencies within legal procedures), analysis of judicial practice and reports from human rights organizations is required.

5.2.4. Monitoring of Blocks

Monitoring of internet resource blocks in Poland is carried out by several organizations and projects, both at the national and international level.

- **Open Observatory of Network Interference (OONI):** This is a global project that collects and analyzes data on internet censorship worldwide. OONI provides software that volunteers can use to test website availability and detect various forms of internet blocks (DNS manipulation, TCP/IP blocks, HTTP filtering). OONI data on Poland may contain information on blocked sites, blocking methods, and their dynamics.
 - Website: <https://ooni.org/>
 - Data on Poland: <https://explorer.ooni.org/country/PL>
- **Registry of Domains Serving to Offer Gambling Games Illegally (Rejestr Domen Służących do Oferowania Gier Hazardowych Niezgodnie z Ustawą):** Official registry of the Ministry of Finance of Poland containing a list of domains subject to blocking by internet providers due to illegal gambling. This registry is public.
 - Website: hazard.mf.gov.pl (requires checking the relevance of the link).
- **Fundacja Panoptikon:** Polish NGO engaged in monitoring issues of digital rights, including internet censorship and blocks. They may publish reports or analytical materials on this topic.
 - Website: <https://panoptikon.org/>
- **Local initiatives and researchers:** There may also be other local projects or academic studies dedicated to monitoring blocks in the Polish segment of the internet.

6. Conclusion

Analysis of the state of digital rights and the internet in Poland for the period from 2019 to 2025 shows a picture of dynamic development of technological infrastructure against the background of complex socio-political processes and certain challenges in the field of human rights.

Compliance with human rights in the field of access to information:

Poland demonstrates a high level of internet penetration, both fixed and mobile, which provides wide opportunities for citizens' access to information. Infrastructure is constantly modernized,

access speeds are growing, fiber-optic technologies and 5G networks are actively introduced. The national .pl domain is steadily developing, managed by the NASK institute. The telecommunications services market is characterized by competition, although with the dominance of several large players.

However, despite technological accessibility, there are potential risks for free access to information and freedom of expression. Legislation in the field of content regulation, combating disinformation, and blocking internet resources requires careful monitoring for compliance with international human rights standards. Although cases of complete internet shutdowns (shutdowns) are not recorded, and using VPN is legal, potential opportunities for restricting access to information through legislative mechanisms or opaque blocking procedures remain. Periodically arising concerns about pressure on media and NGOs, as well as possible cases of persecution for statements on the internet, underscore the need for constant attention from civil society and human rights organizations.

Forecast of event development:

- **Neutral scenario:** Preservation of current trends. Technological development of the internet will continue, speeds and coverage will improve. Legislative regulation will slowly adapt to European norms (DSA, DMA), but individual initiatives aimed at strengthening content control under the pretext of combating disinformation or protecting national security are possible. The level of digital rights will remain generally consistent with European standards, but with periodic cases of pressure on critical voices or controversial interpretations of legislation. Civil society will continue monitoring and advocacy activities on digital rights issues, and VPN use will remain stable. Blocks will mainly concern illegal content (gambling, copyright infringements), but sporadic attempts to expand the practice are possible.
- **Positive scenario (weakening of regulation, liberalization):** The new government that came to power at the end of 2023 consistently implements a policy of strengthening the rule of law and digital freedoms in accordance with the best European practices. There will be a review of controversial legislative norms that could be used to restrict freedom of speech or opaque blocks. The role of independent regulators and judicial control in internet regulation issues will be strengthened. Greater transparency will be ensured in the activities of state bodies related to monitoring and restricting information on the network. Dialogue with civil society on digital rights issues will be strengthened. Investments in digital literacy and critical thinking will help combat disinformation without detriment to freedom of speech.
- **Negative scenario (strengthening of censorship):** In case of exacerbation of the internal political situation, intensification of geopolitical tension, or under the pretext of combating

external threats and disinformation, tightening control over the internet space is possible. New laws may be adopted expanding the powers of state bodies for network monitoring, resource blocking, and holding accountable for statements. Pressure on independent media and NGOs working in the field of digital rights will intensify. Attempts may be made to restrict the use of VPN or other anonymization means. Blocking procedures may become less transparent and more operational, with weakening of judicial control. This will lead to narrowing of the space for freedom of expression and restriction of access to alternative sources of information.

The most likely seems to be the development of events according to the neutral or moderately positive scenario, given Poland's membership in the EU and the declared course of the new government to strengthen democratic institutions. However, risks related to the geopolitical situation and internal polarization remain.

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