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Communication from the Commission to the European Parliament, the Council and the European Economic and Social Committee and the Committee of the Regions

State of the Digital Decade 2025: Keep building the EU's sovereignty and digital future

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European Commission

DIGITAL DECADE 2025
COUNTRY REPORTS

Poland

Poland

Contents

Executive summary

Poland has well-developed fixed connectivity infrastructure but continues to be affected by a low level of digital skills among its population and limited adoption of advanced technologies by companies. The country sees cybersecurity, advancing breakthrough technologies such as quantum computing and artificial intelligence and development of capacity in semiconductors manufacturing as important areas for development.

Poland shows a moderate level of ambition in its contribution to the Digital Decade having set 14 national targets, 71% of which are aligned with the EU 2030 targets. The country is following its trajectories moderately well with 63% of them being on track (considering 2024 trajectories defined for 8 KPIs out of 8 analysed). Poland addressed 55% of the 11 recommendations issued by the Commission in 2024 by making some changes through new measures.

Digital Decade KPI (1)	Poland				EU		Digital Decade target by 2030	
	DESI 2024 (year 2023)	DESI 2025 (year 2024)	Annual progress	National trajectory 2024 (3)	DESI 2025	Annual progress	PL	EU
Fixed Very High Capacity Network (VHCN) coverage	81.1%	83.8%	3.4%	84.1%	82.5%	4.9%	100.0%	100%
Fibre to the Premises (FTTP) coverage	75.4%	77.8%	3.1%	84.1%	69.2%	8.4%	100.0%	-
Overall 5G coverage	71.9%	89.3%	24.1%	98.3%	94.3%	5.9%	100.0%	100%
Edge Nodes (estimate)	42	82	95.2%	11	2257	90.5%	370	10000
SMEs with at least a basic level of digital intensity (2)	-	69.0%	6.4%	-	72.9%	2.8%	90.0%	90%
Cloud	46.5%	-	-	-	-	-	75.0%	75%
Artificial Intelligence	3.7%	5.9%	60.8%	4.3%	13.5%	67.2%	10.0%	75%
Data analytics	19.3%	-	-	-	-	-	35.0%	75%
AI or Cloud or Data analytics	51.8%	-	-	-	-	-	-	75%
Unicorns	10	11	10.0%	13	286	4.4%	20	500
At least basic digital skills	44.3%	-	-	-	-	-	80.0%	80%
ICT specialists	4.3%	4.5%	4.7%	4.3%	5.0%	4.2%	6.0%	~10%
eID scheme notification		Yes						
Digital public services for citizens	63.7	70.7	10.9%	81.5	82.3	3.6%	100.0	100
Digital public services for businesses	72.9	85.0	16.6%	87.4	86.2	0.9%	100.0	100
Access to e-Health records	90.0	91.8	2.0%	88.0	82.7	4.5%	100.0	100

(1) See the methodological note for the description of the indicators and other metrics
(2) DESI 2025 reports Version 4 of the Digital Intensity Index, which is comparable with the DII value from DESI 2023 (referring to year 2022) for the calculation of the annual progress. It is not comparable to the national trajectory, which is based on Version 3 of the index.
(3) National trajectory value if present in the national roadmap and if the indicator was measured in DESI2025 (year 2024)

According to the special Eurobarometer on 'the Digital Decade' 2025, 78% of Polish citizens consider that the digitalisation of daily public and private services is making their lives easier. Concerning the action of the public authorities, 84% consider it important to counter and mitigate the issue of fake news and disinformation online. And regarding competitiveness, 84% consider it important to ensure that European companies can grow and become 'European Champions' able to compete globally.

A competitive, sovereign, and resilient EU based on technological leadership

The country's fixed connectivity infrastructure is well-developed, but 5G deployment has been delayed due to the late allocation of pioneer bands: 3.4-3.8 GHz was allocated in December 2023 and the auction for 700 MHz was completed in March 2025. Poland has come significantly closer to the EU average in terms of the digital intensity of enterprises, but it still scores below the EU average in this respect as well as in the uptake of more advanced technologies by companies. However, it is making progress in areas like quantum computing - first quantum computer should be installed in 2025 – and AI, where the Polish large language model (PLLuM) became available in February 2025 and the country is a part of consortium to host one of the AI Factories. Finally, cybersecurity is one of the key priorities for the Polish administration, which deploys measures to enhance this at different levels of government and to improve the relevant skills of citizens. However, the NIS2 Directive has yet to be transposed into the Polish legal system.

Protecting and empowering EU people and society

Regarding at least basic digital skills, the distance to the national 2030 target remains significant and the low level of digital skills among older and less educated people persist. The lack of ICT specialists is one of the barriers to the digitalisation of enterprises in general, as well as to the uptake of more advanced technologies, and for ensuring protection against cyberattacks. Poland's goal of ensuring that ICT specialists represent 6% of the workforce by 2030, is lower than the EU target. On the other hand, Poland has made progress in digitalising public services, and has seen growth in the use of eID and in access to medical records online. However, the country still needs to address issues such as disinformation, improve coordination between state actors in this area, and enhance people's critical skills to deal with online threats.

Leveraging digital transformation for a smart greening

Polish authorities recognise the link between the digital and green transformations, with the draft State Digitalisation Strategy aiming to promote an environmentally friendly ICT sector and digital ecology. However, the country's digital sector energy consumption is expected to grow rapidly, driven by data centre needs. Measures to ensure the availability and reuse of data on energy sector activities are yet in planning stage. Moreover, recycling of ICT equipment is low despite Poles prioritising energy efficiency when buying ICT devices. The country has, however, implemented measures to promote the use of digital technologies to better protect the environment, including some Smart Cities solutions. The draft State Digitalisation Strategy includes actions aimed at raising citizens' awareness of the environmental impact of ICT and promoting basic knowledge of digital sustainability.

National Digital Decade strategic roadmap

Poland formally adopted its national Digital Decade roadmap on 22 October 2024. As a result, the previous country report, which was published in July 2024, relied on the draft roadmap, which was shared with the Commission on 30 January 2024. The differences between the draft and the formally endorsed document were not substantial. The Polish roadmap is composed of 55 measures with a budget of EUR 12.4 billion, equivalent to 1.47% of GDP. Polish authorities expressed their intention to adjust the national roadmap in line with Article 8 (3) of the decision establishing the Digital Decade Policy Programme, but at the time of writing, neither the formally endorsed document, nor the draft version, has been shared with the Commission.

Poland

In 2024, Poland was working on a comprehensive State Digitalisation Strategy to outline priorities for the digital transformation of Poland until 2035 and provide a basis for public spendings in this area. The implementation of the strategy, whose adoption is expected by mid-2025, will be aligned with various existing and upcoming documents, both at national and EU level, to ensure a comprehensive and coordinated approach to digital development.

Funding & projects for digital

Poland allocates 21% of its total recovery and resilience plan to digital (EUR 7.5 billion)[1]. In addition, under cohesion policy, EUR 5.7 billion, representing 8% of the country's total cohesion policy funding, is dedicated to advancing Poland's digital transformation[2]. Poland is a member of the Alliance for Language Technologies EDIC and of the EUROPEUM EDIC. Poland is directly participating in the IPCEI on Microelectronics and Communication Technologies (IPCEI-ME/CT) and in the IPCEI on Next Generation Cloud Infrastructure and Services (IPCEI-CIS). Poland is also a participating state in the EuroHPC Joint Undertaking (JU) and in the Chips JU.

Poland has not yet presented any projects in the framework of Digital Decade's Best Practice Accelerator[3].

Digital Rights and Principles

According to a support study, Poland has been relatively active in implementing the **European Declaration on Digital Rights and Principles**, with 62 initiatives overall and 6 new initiatives launched in 2024. Poland is most active in the area of digital education, training and skills. Less activity has been identified with regards to a fair digital environment and sustainability. Measures in the area of freedom of choice appear to have most impact on the ground, in contrast to those addressing participation in the digital public space.

Recommendations

- **Basic digital skills**: Increase the attractiveness of STEM disciplines at school to raise interest in taking up ICT-related studies and careers, including by girls and women. Strengthen the measures focused on social groups with lower digital skills, such as older adults, inhabitants of rural areas, and people with disabilities.
- **ICT specialists:** Take measures to increase the number of ICT specialists (e.g. improved training and reskilling options; incentive schemes to attract new / retain current ICT specialists, including specialists from other countries) and continue promoting ICT studies and careers to women and girls.
- **SMEs**: Enhance digitalisation of SMEs, including by directing existing support to those who lag in digitalisation and improving their awareness of the benefits offered by digitalisation and of the available support options.

[1] The share of financial allocations that contribute to digital objectives has been calculated using Annex VII to the Recovery and Resilience Facility Regulation. Last data update: 16 May 2025.
[2] This amount includes all investment specifically aimed at or substantially contributing to digital transformation in the 2021-2027 Cohesion policy programming period. The source funds are the European Regional Development Fund, the Cohesion Fund, the European Social Fund Plus, and the Just Transition Fund.
[3] The Best Practice Accelerator (BPA) is a platform that enables Member States to share successful measures and challenges encountered in their efforts to meet their Digital Decade targets and objectives. Best practices are made available to Member States via the BPA Repository and showcased in regular workshops, currently focused on three thematic clusters: Digital Skills, Green IT, and the Uptake of Digital Technologies.

- **Cybersecurity**: Continue efforts in cybersecurity to address evolving threats, particularly for enterprises and administration.
- **Artificial Intelligence**: Create an AI friendly ecosystem by stimulating public and private investments in research and innovation, raising awareness among entrepreneurs, increasing access to specialised knowledge and computing power, and implementing consistent legal frameworks and standards.
- **5G**: Encourage operators to speed up the deployment of 5G stand-alone core networks.
- **Cloud**: Encourage the adoption of cloud technologies by businesses, focusing on sovereign European solutions.
- **Unicorns**: Continue to improve the business environment and access to finance for digital start-ups, provide more tailored support to address the challenges for scaling business.
- **Semiconductors and digital innovation**: Invest in the development and manufacturing of critical technologies in the areas of digital and deep tech.
- **Green**: Develop a system for monitoring and quantifying the emission reductions of the digital solutions deployed.

A competitive, sovereign and resilient EU based on technological leadership

Competitiveness is important for Polish policymakers, but Poland's claim to technological leadership is limited and its potential appears unfulfilled. Significant resources have been invested in projects to support the development and modernisation of enterprises, and Poland in 2024 has come closer to the EU average in terms of at least basic level of digital intensity of SMEs, but country still scores below the EU average in the uptake of more advanced technologies by companies.

Difficulties in adopting digital technologies may be partially due to the composition of Poland's enterprises' sector. SMEs account for approximately 99.8% of enterprises while large enterprises – which are much more likely to adopt digital technologies – make up only 0.2%. The Polish ICT sector represented 4.03% of gross value added in 2022[4]. That was an increase on 2021 but still lower than the EU average of 5.46%. This suggests some improvement but also overall under-development. R&D in the ICT sector represented 32.33% of businesses' total R&D expenditure and 37.18% of total R&D personnel.

Poland's fixed connectivity infrastructure is developing rather well and its coverage rate (including in rural areas) is higher than the EU average. However, deployment of 5G remains an issue. Due to delays in allocating 5G pioneer bands, only one of these bands – 3.4-3.8 GHz – has been awarded to the operators so far. The allocation of frequency reservations in the 700 MHz band is planned for early June 2025.

Poland is actively participating in the development of quantum computing (one of the six EU quantum computers will be installed in Poland in 2025) and quantum communication. It has also developed niche expertise in areas such as design of integrated circuits and photonics for microelectronics. However, its plans to develop manufacturing capacities stalled after Intel decided to pause its project to create production facility in Poland.

Poland attaches great importance to AI. Developing this technology is one of the goals of the draft State Digitalisation Strategy (*Strategia Cyfryzacji Państwa*). The Council of Artificial Intelligence Funds, which will be responsible for providing opinions on AI policy, as well as on financing and developing AI research in Poland should be established by the end of June 2025. Poland will host one of the EU AI factories and has developed its own large language model *PLLuM*, which will be used to improve digital public services.

Cybersecurity and resilience are high on Poland's political agenda. Projects to raise awareness, enhance skills and strengthen the protection of the public administration are being implemented or launched.

According to the 2025 Eurobarometer[5], **82% of Poles believe that building efficient and secure digital infrastructures and data processing facilities should be a priority for the public authorities.**

[4] Most of the indicators mentioned in the country report are explained in the DESI 2025 Methodological Note accompanying the State of the Digital Decade report 2025.
[5] Special Eurobarometer 566 on 'the Digital Decade' 2025: https://digital-strategy.ec.europa.eu/en/news-redirect/883227

Building technological leadership: digital infrastructure and technologies

Poland has made progress in developing its connectivity infrastructure. Its coverage rates for Very High-Capacity Networks (VHCN) and Fiber-To-The-Premises (FTTP) are higher than the EU averages. However, Poland's growth rates for these technologies are lagging behind the EU's and its 5G coverage remains below the EU average (despite rapid growth in 2024). This is partly because the award of 5G pioneer bands was delayed and, although it did start in 2023, has not yet been completed. However, the European Electronic Communications Code was finally transposed into national law in 2024, thus providing a consistent legal framework and certainty for operators and users.

Poland is also making progress in other areas such as quantum technologies, where it is actively participating in EU projects and developing its own capabilities. However, the development of edge nodes does not seem to be receiving much governmental support and there appear to be no measures in place to support their growth. Poland is working to develop its semiconductor industry but faces challenges such as limited manufacturing capacity.

Connectivity infrastructure

Poland has 83.84% VHCN coverage (the 2030 national target is 100%) following a 3.4% increase in 2024 and is above the EU average of 82.49%. Poland is on track according to its national trajectory. However, Poland's growth rate of 3.4% trailed the EU's 4.9%. Poland's VHCN coverage for households in rural areas was 66.49% in 2024 (above the EU's 61.89%). Poland's growth rate of 16.3% was faster than the EU's 11.3%.

Poland has 77.79% FTTP coverage (the 2030 national target is 100%) after a 3.1% increase in 2024 and is above the EU average of 69.24%. Poland is lagging behind its national trajectory. Moreover, Poland's 3.1% growth rate was lower than the EU's 8.4%. Poland's FTTP coverage for rural areas was 65.64% in 2024 (higher than the EU's 58.78%). Poland's 16.5% growth rate was faster than the EU's 11.9%.

Poland's 9.11% share of fixed broadband subscriptions ≥ 1 Gbps in 2024 was much lower than the EU average of 22.25%. However, Poland's growth rate between 2023 and 2024 of 72.2% was higher than the EU's 20.5%.

Poland has 89.28% 5G coverage (the 2030 national target is 100%) after a 24.1% increase in 2024 but is still below the EU average of 94.35%. Poland is lagging behind its national trajectory. However, Poland's growth rate of 24.1% was significantly higher than the EU's 6.0%. Poland's 5G coverage for households in rural areas was 72.35% in 2024 (below the EU's 79.57%), while its growth rate of 23.7% was more than double the EU's 11.9%.

Poland's 5G SIM card share of the population was 32.6% in 2024 (below the EU's 35.56%). Poland's growth rate for this indicator of 37.6% was also lower than the EU's 63.9%.

Poland's 5G coverage in the 3.4–3.8 GHz band grew significantly from 0.0% in 2023 to 60.2% in 2024 but remained below the EU's 67.72%. The coverage for rural areas grew from 0.0% to 17.38% but was still below the EU's 25.98%. The assignment of harmonised spectrum in the 5G pioneer bands in Poland was 33.33% in both 2024 and 2025 (significantly lower than the EU's 73.4% and 74.63% respectively). Poland did not grow in this area, while the EU grew by 1.7%.

VHCN and FTTP

Poland's VHCN and FTTP targets remain at 100%, as per the national roadmap submitted in 2024. To improve fixed broadband network coverage in areas where access to high-speed internet is difficult, Poland has relied on investments under its Recovery and Resilience Plan - RRP (*Krajowy Plan Odbudowy i Zwiększania Odporności – KPO*) and the European Funds for Digital Development (*Fundusze Europejskie na Rozwój Cyfrowy – FERC*).

The Ministry of Digital Affairs states that some of the selected contractors withdrew from signing the contracts or resigned from their execution. This prompted a modification of the RRP in 2024 and a reduction in the target for additional households having broadband access (at least 100 Mbps) by mid-2026 from 931 000 to 814 000 additional households. The Ministry completed in April 2025 a fourth call for applications to ensure that this new target is achieved.

There are no new interventions to be implemented beyond those already included in the national roadmap. However, the work to update the National Broadband Plan to cover 2026-2030 should start before summer 2025.

The switching off of the copper networks (such as POTS, ISDN, HDSL, SDSL, ADSL) **is at an early stage, and there is no planned or unconditional date for its shutdown.** In December 2024, approximately 1.3 million households were within the reach of the copper network without an alternative. About 0.6 million of them were in areas with DOCSIS 3.X technology. The costs of migration are mostly borne by Orange Polska S.A., the operator of the copper network.

There were no significant changes in the fixed internet access market in 2024. Orange Polska S.A. remains the market leader (with a share below 25%). The wholesale operators (e.g. Światłowód Inwestycje, Polski Światłowód Otwarty, Nexera and Fiberhost) also play an important role in developing regional telecommunications infrastructure.

5G

Poland's 5G target remains 100% (as per the national roadmap submitted in 2024) and should be achieved by 2027. Coverage was below the EU average in 2024 but grew much faster in Poland than in the EU. Moreover, after a long delay, the award of 5G pioneer bands in Poland is now moving forward.

In December 2023, the President of the Office of Electronic Communications (*Urząd Komunikacji Elektronicznej – UKE*) granted the rights to use spectrum in the 3.4-3.8 GHz band. This resulted in 60% of Polish households being within range of a 5G network using this pioneer band by the end of June 2024.

The auction to distribute another pioneer band – 700 MHz – was launched in November 2024. Four entities submitted initial bids by the deadline in late January 2025. The bidding was completed in March 2025. The allocation of frequency reservations in the 700 MHz band is planned for early June 2025.

In March 2024, the operators indicated (in reaction to the public consultation on the 26 GHz band opened by the Office of Electronic Communications) that the allocation of this band should not take place before 2026 due to the lack of availability of end devices operating in this band, as well as minimal availability of devices on the part of operators.

The standalone 5G network was not commercially available in Poland in 2024, but operators conducted pilots, research and tests in this area. The conditions set in both procedures for spectrum-awarding will require the winning operators to cover 95% of main roads and railways and 99% of households in Poland with their 5G network.

2024 recommendation on connectivity infrastructure: (i) Proceed with the allocation of remaining 5G pioneer bands. (ii) Transpose the European Electronic Communications Code into national law. (iii) Strengthen measures on 5G deployment, including those alongside the main transport corridors. (iv) Ensure sufficient access of new players to spectrum for innovative business-to-business (B2B) and business-to-consumer (B2C) applications and encourage operators to speed up the deployment of 5G stand-alone core networks.

In 2024, Poland made some efforts to address the recommendations through new policy actions. The auction for one of the remaining 5G pioneer bands – 700 MHz – was launched in November 2024. Granting rights to use spectrum is expected before summer 2025. Due to lack of interest on the part of operators, the 26 GHz band is not expected to be allocated before 2026. As a part of the RRP's reform aiming to improve the legislative environment for the development of mobile networks by removing existing barriers to 5G deployment, the Electronic Communications Law (transposing the European Electronic Communications Code into national law) was adopted in July 2024 and entered into force in November 2024. The conditions for the 5G auctions are conducive to 5G deployment (including alongside transport corridors) but no other measures have been taken to speed up the deployment of 5G stand-alone core networks.

Semiconductors

Poland's share of global microelectronics production value chains is minimal, but its semiconductor industry has potential to contribute to the European and global technology landscape. Poland has developed niche expertise in areas such as design of integrated circuits and photonics, supported by a skilled workforce and expanding research infrastructure.

One example of such activity is the HyperPIC project by VIGO Photonics, which is funded under the Important Project of Common European Interest on Microelectronics and Communication Technologies (IPCEI ME/CT). It aims to develop and implement photonic integrated circuit technology for mid-infrared applications and will position VIGO Photonics as a global leader in this domain.

Limited manufacturing capacity remains a key challenge (particularly in front-end and back-end processes) and is restricting the industry's overall development. Global R&D centres are present in Poland, but further investment in production facilities is necessary in order to fully capitalise on Poland's domestic semiconductor market, which is driven by several different sectors (including consumer electronics and defence).

The decision of Intel in September 2024 to suspend construction of a new semiconductor assembly and test facility near Wrocław for two years is therefore a significant challenge for plans to achieve a 0.5% share in global microelectronics production value chains by 2030 (as planned in the roadmap).

The Polish Ministry of Digital Affairs reacted to this development by announcing its intention to review a resolution establishing the National Framework for Supporting Strategic Investments in Semiconductors for 2024-2026. The draft document *Poland in the game for the future: Policy for the semiconductor sector 2025+* (*Polska w grze o przyszłość: Polityka dla sektora półprzewodników 2025+*) was issued in February 2025 for public consultation. It calls for attracting at least three large investors from the semiconductor sector over the next decade.

Edge nodes

The Edge Node Observatory estimates that Poland had deployed a total of 82 edge nodes in 2024, an increase of 95.2% on 2023. This is almost double (+40 edge nodes) the amount estimated for 2023.

However (according to the information provided by the Polish authorities in February 2025), **the implementation of the 'EdgePL' pilot, which is the only measure in this area included in the roadmap, has not yet started**. This suggests a delay of up to two years compared with the original timeline. The Polish authorities did not (in February 2025) mention any other public intervention in this domain.

The draft State Digitalisation Strategy (*Strategia Cyfryzacji Państwa*) was presented for public consultations in October 2024. It identifies edge computing as one of the breakthrough digital technologies, which may be developed with the State's support. It also includes a **goal of creating 1 000 edge nodes by 2035**, which would imply almost tripling their number from the 370 that Poland committed to deliver by 2030 in its national roadmap. However, the draft does not indicate how this goal should be achieved.

Quantum technologies

Poland is participating in projects for two out of six quantum computers planned under the European High Performance Computing Joint Undertaking (EuroHPC JU). The EuroQCS-Poland project (the first quantum computer integrated with supercomputing resources in Poland) should be established in Poznań in June 2025. Poland is also participating in the international consortium on the LUMI-Q project, which involves providing academic and industrial users with a quantum computer based on superconducting qubits with a star topology. This should also be installed in 2025.

Poland is working with other Member States to develop and deploy a quantum communication infrastructure (QCI) across the EU. Consortium PIONIER-Q, which represents Poland in the EuroQCI initiative, has developed the largest quantum key exchange network in the EU (with 1 770 km of optical fibres) and provides the backbone for the quantum key distribution (QKD) network that connects selected cities in Poland. The system that was demonstrated in March 2025 enables encrypted communication between data centres and public administration institutions, and ensures the highest level of security of information exchange.

Developing quantum technologies to ensure secure communication as well as to enhance the productivity and competitiveness of the Polish economy (e.g. cryptography and metrology) is one of the goals of the draft State Digitalisation Strategy (*Strategia Cyfryzacji Państwa*) that was presented for public consultation in October 2024. However, the presentation of the dedicated policy document on quantum, which was expected in the first quarter of 2025, was postponed to the second quarter of 2025.

Supporting EU-wide digital ecosystems and scaling up innovative enterprises

Poland has come significantly closer to the EU average in terms of the digital intensity of enterprises, but it still scores below the EU average in this respect as well as in the uptake of more advanced technologies by companies. This is usually attributed to a shortage of specialists with the necessary knowledge and skills (including cybersecurity or AI); high costs of applying new digital solutions; limited

access to financing; lack of motivation among the entrepreneurs to implement digital solutions combined with low awareness of potential benefits[6]; and haphazard implementation of new solutions.

At the end of 2024, Poland was home to 11 unicorns and aimed to almost double this number to 20 by 2030. However, this would still represent a limited contribution to the EU's target of nearly 500 unicorns by 2030. Poland's position fell in the Global Start-up Ecosystem Index ranking between 2023 and 2024, and its start-up ecosystem is facing difficulties in accessing funding, high labour costs, and lack of support. The Ministry of Economic Development and Technology is working on a start-up support strategy to address these challenges and improve the country's position in the global startup landscape.[7]

Several public measures (implemented mostly under the national RRP and the cohesion policy programmes) are supporting business digitalisation but have not yet had a decisive impact. To remedy some of the above-mentioned problems and make State intervention more effective, the draft State Digitalisation Strategy (*Strategia Cyfryzacji Państwa*) proposes to establish an entity to coordinate the digital transformation of enterprises and develop a common vision for that process at the national level, as well as to make entrepreneurs more aware of the benefits offered by digitalisation and of the available support options.

The Ministry of Economic Development and Technology is developing the Digital Transformation of Enterprises Programme, to address the current problems of enterprises related to technologies and cybersecurity. The programme will put forward actions aligned with the key objectives of the State Digitalisation Strategy and serve as a practical tool for their implementation[8].

SMEs with at least basic digital intensity

In 2024, 68.95% of SMEs in Poland showed at least a basic level of digital intensity (the 2030 national target is 90%). This resulted from a robust year-on-year growth rate of 6.4% (from 60.95% in 2022). This was still below the EU average of 72.91% but represented significant progress. More specifically, 31.06% of SMEs achieved high or very high digital intensity (almost the EU average of 32.66%). Overall, Poland's SMEs made good progress on digital intensity levels, though efforts are still needed to achieve EU averages.

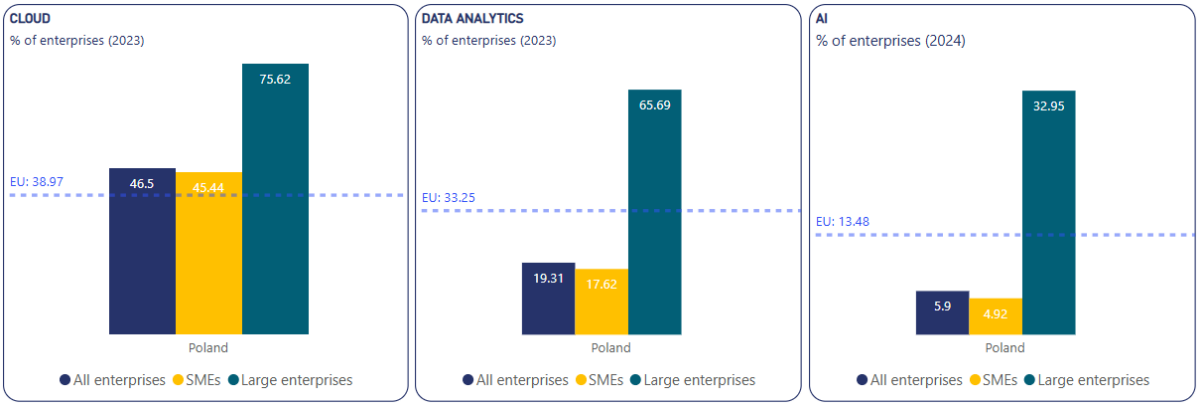
Poland has been implementing several measures to accelerate the digitalisation of enterprises listed in its roadmap. Key initiatives include calls for proposal under the European Funds for a Modern Economy (*Fundusze Europejskie dla Nowoczesnej Gospodarki* – FENG) and the recovery and resilience plan to enhance the digitalisation of SMEs. Businesses of all sizes could use the Digital Kit for Companies (*Cyfrowa wyprawka dla firm*) to receive comprehensive digitalisation advice in one place or Biznes.gov.pl to get information on business start-up funding.

Nine European Digital Innovation Hubs (EDIH) were available to provide comprehensive support to SMEs in the areas of digitalisation and digital transformation. They offer services such as training, testing of new technologies, and support in accessing investments and innovative ecosystems.

[6] This is particularly relevant given the SMEs account for approximately 99.8% of Polish enterprises. The results of the project Advancing The Digital Transformation of Polish Enterprises (*Wzmocnienie cyfrowej transformacji polskich przedsiębiorstw*) indicate that close to one third of them have a low level of digitalization and operate locally, convinced that the minimum is enough, while further 9% are micro-companies eager to digitalize, but lacking knowledge and resources.
[7] Information provided by the Ministry of Digital Affairs (*Ministerstwo Cyfryzacji*) during a meeting on 26 May 2025.
[8] Information provided by the Ministry of Digital Affairs (*Ministerstwo Cyfryzacji*) during a meeting on 26 May 2025.

The national target set in the roadmap is consistent with the EU-level target. It is higher than Poland's current position and will require a continuously high growth rate if it is to be achieved by the deadline.

Take up of cloud/AI/data analytics



According to new data collected in 2024, only 5.9% of enterprises in Poland were using AI technology (less than half the EU level average of 13.48%). This indicates a significant increase (60.76%) in AI uptake on 2023 (3.67%) and means that Poland is on track according to its national trajectory, but it also means that Poland was below the EU-level growth rate of 67.2%. The uptake rate among SMEs was 4.92%, but large enterprises showed a higher usage rate of 32.95%. This corresponds to a gap of 28.03 percentage points (pps) between SMEs and large enterprises, which is in line with the EU gap of 28.53 pps.

Adoption of cloud, data analytics and the three technologies together were not measured in 2024.

In 2023, cloud uptake among Polish enterprises was 46.5% – considerably higher than the EU-level uptake of 38.97%. SMEs had a lower adoption rate of 45.44%, while large enterprises had a higher rate of 75.62%. This translates to a 30.18 pps difference in uptake between SMEs and large enterprises in Poland, which is like the EU-level difference (31.68 pps).

Data from 2023 showed that 19.31% of enterprises in Poland were using data analytics – below the EU-level use rate of 33.25%. However, while 17.62% of SMEs engaged in these activities, a substantially higher percentage of large enterprises (65.69%) adopted data analytics. This led to a gap of 48.07 pps between SMEs and large enterprises, which exceeded the EU gap of 39.72 pps.

If all three technologies are together, **over half the enterprises (51.77%) in Poland used either AI, Cloud or data analytics technologies in 2023 (the 2030 national target is 75%) – slightly below the EU average of 54.7%**. SMEs' uptake was slightly lower at 50.43%, while large enterprises had a significantly higher engagement rate of 88.59%. The difference in uptake between SMEs and large enterprises in Poland was 38.16 pps, which was higher than the EU-level gap of 32.97 pps.

In conclusion, Poland's adoption of cloud computing outpaced the EU average, reflecting a strong performance in this area. By contrast, the uptake of data analytics and artificial intelligence lagged behind EU levels. The disparity in uptake between SMEs and large enterprises reflects broader EU trends, with large enterprises consistently leading in technology adoption. These findings highlight the importance of addressing the specific challenges faced by SMEs in order to support broader digital transformation across the whole economy, especially given their weight in Poland's economy.

- **Cloud**

The use of the Cloud by enterprises in Poland in 2023 exceeded the EU average, but many enterprises use cloud computing only for basic purposes (e.g. as file storage). A small fraction use more advanced applications (e.g. big data analysis or running their own internal applications) [9].

The Polish roadmap contains several measures to support business digitalisation. These may contribute to uptake of the Cloud by the enterprises, but only one of them focuses on this aspect of digitalisation. Loans to SMEs to purchase cloud infrastructure and services have not yet been made (the calls were expected in the second half of 2025), but the initiative had already led to publication of the *Cloud for entrepreneurs* (*Chmura dla przedsiębiorców*) manual to assist businesses in digital transformation.

In November 2024, **five beneficiaries signed contracts to receive support under IPCEI Next Generation Cloud Infrastructure and Services (IPCEI-CIS)** under the investment financed by the Polish RRP. The selected projects will focus on development of a national DataSpace for spatial data; a scalable distributed NoSQL database for real-time IoT applications; a secure execution environment for applications in public Cloud settings; a next-generation operating system for Edge-IoT devices; and a Cloud Artificial Intelligence Service Engineering platform to create universal intelligent services for various applications.

- **Data Analytics**

There is no new development relevant for the 2025 Digital Decade to report.

- **Artificial Intelligence**

AI is presented in the draft State Digitalisation Strategy (*Strategia Cyfryzacji Państwa*) as the first of the breakthrough technologies that will be crucial for Poland's development. The draft document also predicts that 50% of Polish enterprises will be using AI by 2035. This is in stark contrast not only to the 5.9% level of use in 2024 but also to the official national target for 2030 of 10%.

Such a significant change will require the overcoming of several barriers, such as limited investment in research and innovation (particularly from SMEs) as well as a lack of awareness among entrepreneurs of the benefits of using AI. According to the CEO survey *Time of Necessary Changes* (*Czas koniecznych zmian*), only 15% of Polish business leaders see AI as a tool to support business development, while the global proportion is 33%. The report *How do Polish companies implement AI?* (*Jak polskie firmy wdrazaja AI?*) states that 40% of employees of medium and large companies in Poland express misgivings about AI.

Insufficient access to specialised knowledge and computing power is hindering the growth of AI in Poland. The draft Strategy also points to a shortage of specialists and experts in AI, with Poland ranking outside the top 15 in EU in terms of graduates in computer science. Poland needs to establish consistent and harmonised legal frameworks and standards for AI development and deployment. It is necessary to update and implement EU and international regulations on AI (e.g. the AI Act) to ensure a coherent and supportive regulatory environment.

The draft Strategy does not propose specific measures in this area, but the Ministry of Digital Affairs stated during a meeting in February 2025 that it intends to revise its *Policy for development of artificial*

[9] Information provided by the Ministry for Economic Development and Technology (*Ministerstwo Rozwoju i Technologii*) during a meeting on 20 February 2025.

intelligence in Poland from 2020 (*Polityka dla rozwoju sztucznej inteligencji w Polsce od roku 2020*) so that it addresses new challenges and technological changes.

One of the steps already taken in this area was the signature of letter of intent by the institutions that distribute public funds for the development of AI in Poland[10]. At the same time, in November 2024, they committed to sign the Agreement on the establishment of the Council of Artificial Intelligence Funds, which is to be established by the end of June 2025.

The Council's task will include providing opinions on the directions of AI policy, funding and the development of AI research in Poland, as well as developing support strategies for the development and implementation of safe and ethical AI, designing programs to concentrate funds on specific projects, monitoring the AI market in Poland and coordinating these funds.

Poland will host one of the AI Factories. It has joined one of the seven consortia that were selected for that purpose in December 2024 by the European High Performance Computing Joint Undertaking (EuroHPC). In March 2025, the Commission granted EUR 50 million in funding to the Poznań Supercomputing and Networking Centre (PCSS) to build the Piast AI Factory.

2024 recommendation on AI/Cloud/Data Analytics: (i) Review the mix of measures to support the adoption of advanced digital technologies (with a particular attention to AI and data analytics). (ii) Ensure the broad uptake of the next generation of cloud infrastructure and services under development in the IPCEI-CIS by companies of all sizes, including by developing a country specific dissemination strategy (complementing what has already been committed under IPCEI-CIS); contributing to the additional dissemination activities led by the Cloud IPCEI Exploitation Office.

In 2024, Poland continued the implementation of existing measures but did not take any new measure. Poland plans to adjust the roadmap but has not yet submitted relevant documents and, except for the ongoing process to establish the Council of AI Funds, Poland, it has not informed the Commission about the implementation of any new measures (other than initiatives included in the current roadmap).

Unicorns, scale-ups and start-ups

At the beginning of 2025, there were 11 unicorns in Poland (up from 10 in 2024), which represents 3.8% of all such companies in the EU. According to the adopted roadmap, Poland expects to have 20 unicorns by 2030. While this would mean almost doubling the baseline value, it would still represent only a limited contribution to the EU-level target of almost 500 unicorns by 2030.

According to the *Global Start-up Ecosystem Index 2024*, which examines start-up ecosystems in 100 countries and 1 000 cities, Poland ranked lower than in 2023. It declined by one spot globally, to 34th place, and by two spots in the EU, to 17th place. Among Polish cities, Warsaw is the only Polish start-up ecosystem in the top 100, although at 73rd place in the ranking, it remains below its best historical rankings. Kraków has overtaken Wrocław as the second-ranked city in Poland. The report concludes that while challenges (like reliance on public funding and difficulties with acquiring talent) persist, Poland's strong economic base, announced policy changes, growing AI talent, and strategic collaborations position it well to enhance its start-up ecosystem in the future.

The report *Polish start-ups 2024* (*Polskie Start-upy 2024*) identifies the **main barriers to start-ups' development as: (i) difficulties in accessing funding** (56% of respondents mentioned challenges in

[10] The Ministry of Digital Affairs, the Ministry of Science, the Ministry of National Defence, the Polish Development Fund S.A., the National Centre for Research and Development, the National Science Centre and Bank Gospodarstwa Krajowego.

securing the necessary funding); (ii) **high labour costs** (for 50% of start-ups it is a major obstacle; 18% of the start-ups surveyed also report a lack of employees); and (iii) the **need for support** (in various areas, particularly in obtaining financing and working with investors).

However, **the challenges for scale-ups may be somewhat different.** According to the study 'Mapping Poland's Tech Sector', **access to qualified managerial talent** is the key barrier for Poland's tech founders, especially for founders of scaled companies. Other major barriers include difficulties for B2B companies to access customers, the unpredictable taxation system, and a lack of conducive legal frameworks. Access to capital is a more pronounced challenge for smaller companies, but the lack of growth-stage financing could also hamper their further development.

In 2024, Poland did not introduce any new measures in this domain but implemented several existing ones. The roadmap does not include any measures focused specifically on start-ups, but there are targeted initiatives that are funded from cohesion policy. Such initiatives include: (i) *Startup Booster Poland - Smart Up*, which offers comprehensive support for innovative ventures at an early stage, including mentoring, matchmaking with corporations, and support for global scaling; and (ii) *Starting platforms for new ideas*, which provides personalised incubation plans for start-ups in Eastern Poland.

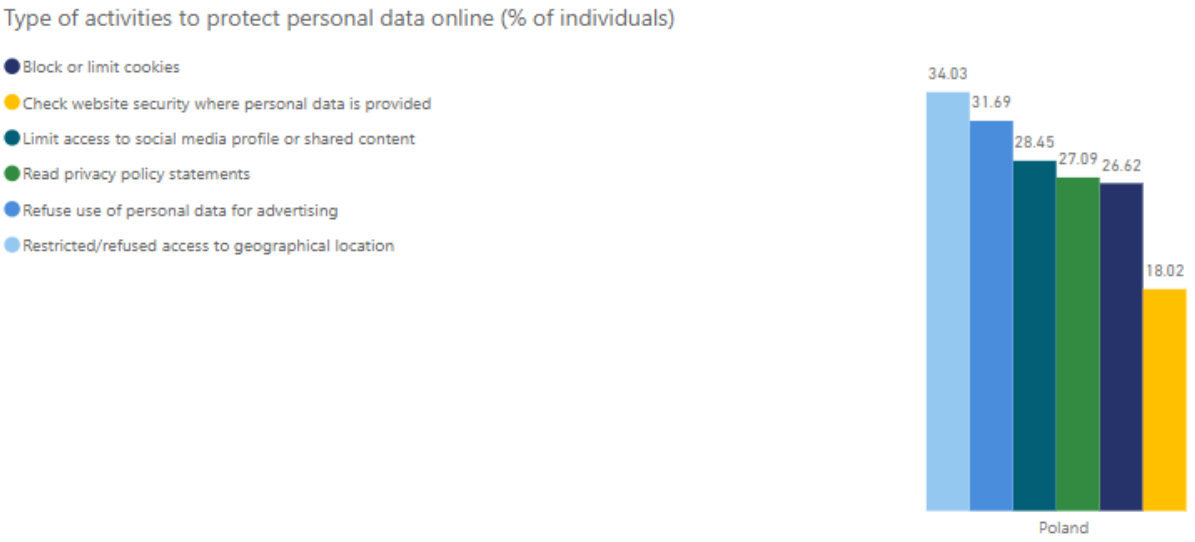
Additionally, institutions like PFR Ventures invest in venture capital and private equity funds to provide capital to innovative Polish enterprises at various stages of development, while the National Centre for Research and Development (*Narodowe Centrum Badań i Rozwoju - NCBR*) focuses on supporting R&D projects carried out by tech companies in cooperation with large enterprises or universities. In May 2025, the Ministry of Finance, the Polish Development Fund (PFR), and PFR Ventures launched the PFR Deep Tech programme. The programme has a budget of PLN 300 million from PFR's own resources, with an additional minimum of PLN 300 million to be contributed by private and institutional investors. The initiative will operate as a fund-of-funds, channelling capital to venture capital fund managers who will finance the most promising technological projects.

Strengthening Cybersecurity & Resilience

Poland faces growing challenges in cybersecurity and the Polish authorities see the need for improving performance in this area. These challenges are largely due to a more unstable global security situation and a rise in online crime. Because of these threats, the Polish authorities want to improve protection against cyberattacks for important computer systems and networks. This is vital due to Poland's central position at NATO's eastern flank. Hence, cybersecurity is one of the main digital themes for the Polish Presidency of the EU in the first half of 2025 and for the draft State Digitalisation Strategy (*Strategia Cyfryzacji* Państwa), which includes cybersecurity in four cross-cutting areas, significantly affecting the activities in other areas.

One of Poland's weaknesses is a low level of digital safety skills, with only slightly above half the population having a basic level of such skills. In 2023, 54.06% of individuals reported taking at least one action (see the six types of digital safety actions in the graph's legend below) to protect their personal data online, which was significantly below the EU average of 69.55%. Moreover, only less than one third (30.55%) of the population could be considered to have above basic digital safety skills (i.e. taking three or more actions). The most common action taken was restricting or refusing access to geographical location (34.03%), while the least common was checking that websites are secure (18.02%).

Poland



According to the Digital Decade Eurobarometer 2025, **74% of Poles believe that improved cybersecurity, better protection of online data and safety of digital technologies would facilitate their daily use of digital technologies.** While no-negligible, the share of people in Poland seeing this aspect as significant is lower than for the EU (81%) and has decreased by 3 percentage points since last year.

In 2024, various public entities raised awareness of threats and worked to improve the general population's cybersecurity skills. Their activities were often – but not exclusively – addressed to children and adolescents.

- NASK-PIB[11] implemented a series of educational and preventive activities - including workshops, lessons, training sessions, and webinars - attended by 36 333 IT professionals and public administration representatives, 286 474 students, 18 507 teachers and professionals working with children and young people, 2 060 parents, and 525 officers responsible for social prevention and minors. The initiative also included conferences and media appearances.
- The Office of Electronic Communications (*Urząd Komunikacji Elektronicznej*) was also active in this area. Its campaign *#KeepCTRL* (*Klikam z głową)* included lessons for school classes (over 6 000 students through 116 in-school lessons) and online webinars for elementary school students (more than 60 000 students through 12 online webinars). These lessons and webinars taught the students how to: (i) use smartphones, computers, games, and online applications responsibly; (ii) protect their personal data; and (iii) defend themselves against cyberbullying.
- The *European Cybersecurity Month* (*Europejski Miesiąc Cyberbezpieczeństwa*) campaign coordinated by NASK-PIB focused on adult users and organisations. The campaign covered topics such as romance scams, fake investments, AI, and deepfakes. It also provided educational materials, including articles, infographics, webinars, posters, and guides, and reached an estimated 1.4 million people.

In 2024, Polish enterprises tended to experience fewer incidents related to cyberattacks than the average number of incidents for the EU. The number of enterprises that experienced ICT security

[11] NASK-PIB is a National Research Institute supervised by the Polish Ministry of Digital Affairs, primarily focused on research and development in cybersecurity, ICT, and AI, and on ensuring the security of cyberspace at the national level. It also serves as the national registry for .pl internet domains and runs CERT Polska, which responds to cybersecurity threats.

incidents leading to the unavailability of ICT services due to attack from outside (e.g. ransomware attacks, denial-of-service attacks) increased slightly in Poland (from 2.93% in 2022, to 3.02% in 2024), but remained below the EU average (3.43%).

The increase in the number of incidents is also reflected in the Cybersecurity Barometer (*Barometr cyberbezpieczeństwa*), published annually by KPMG Poland **and in the Report on Cybersecurity in Polish companies** (*Raport Cyberbezpieczeństwo w polskich firmach*), which is prepared on a yearly basis by Vecto. In 2024, the percentage of companies reporting at least one cyber incident increased by 16 pps to 83% according to the Cybersecurity Barometer, and by 4 pps to 73.9% according to the Report on Cybersecurity.

Notable incidents included a distributed denial-of-service cyberattack on the companies Autostrada Wielkopolska and Gdańsk Transport Company, which manage sections of the A2 and A1 motorways. The attack was carried out by the same pro-Russian group that attacked transport companies in Czechia and public administration websites in France. The **Polish IT company Atende SA became the target of an advanced ransomware cyberattack** that allowed criminals to gain access to the personal data of employees, customers and contractors, and the **Super-Pharm pharmacy chain experienced a cyberattack that led to a leak of customer data**.

Polish enterprises deploy some ICT security measures more often than the EU average, but employees are less aware of their ICT security-related obligations than the EU average. In terms of measures, 94.11% of enterprises deployed some ICT security measures (slightly above the EU average of 92.76%) and 56.84% of enterprises made their employees aware of their obligations regarding ICT security-related issues, which is close to the EU average (59.97%).

In 2024, the difficulty in hiring and retaining qualified specialists was the biggest challenge to ensuring cybersecurity in enterprises. 34% of respondents to the Cybersecurity Barometer mentioned this problem. This represents a decrease of 19 pps compared with 2023, which could suggest that companies are learning how to manage this challenge better. The second most frequently mentioned challenge was insufficient budgets, affecting 33% of respondents. This issue has also become less significant compared with previous years, which could reflect increased awareness of cybersecurity and its prioritisation in corporate budgets. Another challenge, which rose from 17% in 2023 to 26% in 2024, was the lack of support from top management.

In 2024, measures already included in the national roadmap helped enterprises to improve their cybersecurity. The *Fundamentals for Business Cybersecurity programme* (*Program Firma Bezpieczna Cyfrowo*) is implemented in partnership by Ministry of Economic Development and Technology together with NASK-PIB and funded from cohesion policy resources (*Fundusze Europejskie na Rozwój Cyfrowy - FERC*). It aims to help SMEs assess their cybersecurity and improve their situation and was in the second phase of its pilot stage. At the same time, the implementation of the 'SMART path', which is financed from cohesion policy resources under priority 1 of the FENG programme, continued. Enterprises receiving support in this scheme for their R&D or innovation projects can also receive help to improve their level of cybersecurity.

Poland lags behind the EU in the roll-out of the secure Internet Protocol version 6 (IPv6). This could have negative consequences for future growth and innovation, as well as for security. The rate of IPv6 adoption is 15% for end users in Poland (the EU average is 36%) and 3% on the server side (the EU average is 17%). IPv6 is an important protocol as it ensures the scalability, stability, and security of the internet. The deployment of this new version is increasingly urgent, as traditional IPv4 addresses have long been depleted. Domain Name System Security Extensions (DNSSEC) is also an important

standard to be rolled out, as it introduces security features to DNS. In Poland, the DNSSEC validation rate (i.e. verification of the authenticity of responses sent by name servers to clients, using a digital signature technology) is 46% (Q3 2024), which is close to the EU average of 47%.

Cybersecurity is also a concern for the public administration in Poland. According to the draft State Digitalisation Strategy (*Strategia Cyfryzacji Państwa*), a low awareness of the threats and a lack of skills are weaknesses in this area.

In 2024, NASK-PIB carried out a series of initiatives to improve cybersecurity awareness and build skills in different institutions. These included: (i) the SecureV project, which trained key persons for the security of the state, members of parliament, members of the Council of Ministers, representatives of local government units, primary healthcare entities and representatives of the National Electoral Office; (ii) training for 35 presidents of state-owned enterprises; and (iii) the EDU-EXE project, which trained close to 27 500 police officers in district and city headquarters, teachers, and employees of bailiffs' chambers and local government units. Moreover, 33 230 people working at the entities forming the national cybersecurity system were trained to improve their practical skills to handle crisis situations.

In 2024, Poland launched project *Cybersafe self-government* (*Cyberbezpieczny Samorząd*) to increase the level of information security in territorial self-government units. 2 495 units (almost 90% of their total number) received grants to improve technical and organisational aspects and skills. Additionally, the Cybersecurity Centre NASK (*Centrum Cyberbezpieczeństwa NASK*) project was launched. It involves the creation of a cybersecurity centre comprising several specialist centres, offices, and laboratories to boost the national cybersecurity system. The project is expected to improve the country's ability to respond to current and future cyberthreats.

In 2025, several new initiatives are expected, including the Cybersafe government (*Cyberbezpieczny Rząd*) project, which aims to improve the cybersecurity of various government institutions, including ministries, central offices, and voivodeship offices. Another initiative is the Local Cybersecurity Centre (*Lokalne Centrum Cyberbezpieczeństwa*) project to create or develop specialised cybersecurity units in various regions of the country to provide services to territorial government units, which is expected to start in the third quarter of 2025.

To improve the coordination of Poland's national cybersecurity system, the draft State Digitalisation Strategy (*Strategia Cyfryzacji Państwa*) proposes **establishing a central institution responsible for cybersecurity** and coordinating the activities of other entities providing cybersecurity at national level. The Strategy did not provide more detail on this subject and at the time of writing it had yet to be adopted by the Polish government. However, the Ministry of Digital Affairs is currently preparing the 2025-2029 National Cybersecurity Strategy, which should be published in mid-2025, possibly alongside the State Digitalization Strategy. The Ministry expects the legal act transposing the provisions of the NIS2 Directive in Polish legal system to be adopted at the same time.

Protecting and empowering EU people and society

Empowering people and bringing the digital transformation closer to their needs

The digital skills of Poland's population require significant improvement, as their low level hinders participation in public life and increases the risk of falling victim to cybercrime. Moreover, data reveal a marked difference in the level of skills between people living in urban and rural settings and between age groups. All this points to the need for well-targeted activities to improve the levels of digital skills and bring them closer to the EU average.

A lack of ICT specialists is one of the factors slowing down the digitalisation of enterprises and of the public administration. Poland is aiming for ICT specialists to represent 6% of the workforce by 2030, which is markedly lower than the EU target of 10%. Currently deployed or planned measures could be sufficient to reach this lower target, but it does not seem ambitious enough to achieve the targets in the draft State Digitalization Strategy for developing the Polish digital sector.

The country has made progress in digitalising public services for citizens and businesses, although it remains below the EU average in both categories. Therefore, there is still room for improvement if Poland is to reach the score of 100 by 2030. **The use of eID is growing** and Poland is participating in projects to develop the new European digital wallet. **The country's score for online access to medical records makes it one of the leaders in this area**, while several ongoing projects should help it to achieve the target by 2030.

According to the Digital Decade Eurobarometer 2025, **78% of Poles think that accessing public services online will be important for their daily life by 2030**. 76% of them consider that human support to help access and use digital technologies and services would facilitate their daily use of digital technologies, and 83% think public authorities should prioritise ensuring that people receive proper human support to help them adapt to the changes in their lives brought about by digital technologies and services.

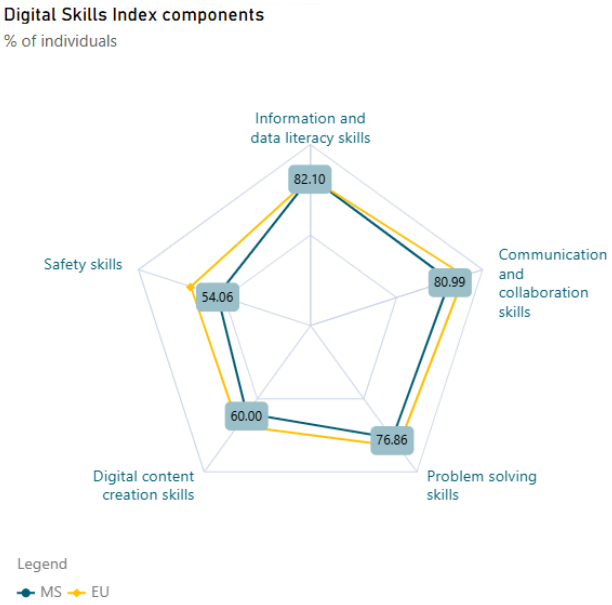
Poland saw high levels of disinformation activities due to its geopolitical situation. Since different state actors are working to counter this disinformation, there is a need for improved coordination. It is also important to enhance people's awareness of disinformation and their critical skills to deal with it.

Equipping people with digital skills

Basic Digital Skills

The digital skills of the population is one of the areas in which Poland should improve its performance. According to 2023 data, 44.30% of Poland's population had at least basic digital skills (the 2030 national target is 80%), which represents an increase of 1.5% compared to the previous year, but remains well below the EU average (55.56%). Although the data were not updated in 2024, detailed demographic analyses provide insights into the digital skill disparities.

- **Gender gap:** Poland has a gender gap in digital skills, with 45.68% of men and 42.99% of women equipped with at least basic digital skills. The gap of 2.69 pps is just above the EU average (2.23 pps), indicating a moderate difference in digital proficiency between genders.
- **Education level:** the link between education and digital skills is clear, as 73.37% of Poles with higher education have at least basic digital skills, which is below the EU average (79.83%). Those with the least formal education are further behind, with only 31.60% having at least basic digital skills, but the gap with the national average (12.70 pps) is narrower than the EU average (21.95 pps).
- **Living areas:** In Poland, the lowest proportion of people with digital skills (33.17%) was recorded in rural areas, which falls short of the EU average for rural areas (47.50%). The difference between rural areas and the country's average is 11.13 pps, which is greater than the EU average (8.06 pps), indicating a need for focused digital upskilling in rural areas.
- **Age groups:** 25 to 34-year-olds in Poland are the most digitally skilled, with 66.85% of them being proficient, which is just below the EU average (70.18%). A much lower proportion of 65 to 74-year-olds have digital skills (12.55%), which is well below the EU average (28.19%).
- **The Digital Skills Index** shows that **Poland scores above the EU average only in information and data literacy, at 82.10%.** Safety skills, however, are a weak point, with the country scoring 54.06%, which is considerably below the EU average (69.55%).



Poland has areas that it must address in its pursuit of digital inclusivity and proficiency. Targeted initiatives are essential in view of a significant rural-urban skills divide and low numbers in the older demographic. Improving safety skills and supporting lower-educated groups could help Poland raise its overall digital skills level and move closer to the EU benchmarks.

Poland's target for the basic digital skills of the population remains at 80%, which is in line with the 2030 EU target. The data collected by the National Statistical Office (*Główny Urząd Statystyczny*) show that the proportion of Poland's population with at least basic digital skills grew in 2024 to 48.80%. This implies a much higher annual growth rate than in previous years. However, the national data still indicate not only a gender gap, but also a low level of digital skills among older people and those with a lower level of education.

In 2024, Poland implemented several measures, which were planned in the national roadmap, to develop digital skills. These included: (i) training to improve individuals' digital skills (focusing in particular on public officials, teachers and those at risk of digital exclusion), funded from the Recovery and Resilience Fund (RRF); (ii) the creation of the Digital Development Clubs (*Kluby Rozwoju Cyfrowego*) in local communities with grants from cohesion policy funds; and (iii) activities of NGOs to improve the digital skills of older people, financed from national funds under the 'Aktywni+' multiannual programme for older people.

Moreover, various activities were undertaken to develop computer science talent in schools in the framework of the 2019-2029 Programme for the Development of IT Talent (*Program Rozwoju Talentów Informatycznych*)**.** The programme, which includes two thematic paths (*Championship in Algorithmics and Programming* and *Championship in Computer Game Design)*, aims to support the development of mathematical and IT talent, by creating a motivating system for gifted students, as well as organising educational trips, e-learning sessions, team-based problem-solving, and competitions to promote digital skills. Another initiative focusing mainly – but not only – on schools was the *Intergenerational school* (*Szkoła Międzypokoleniowa*) pilot project, which brings together students and older people to develop digital skills and promote intergenerational integration.

At the same time, the implementation of the key national policy document – the Digital Competence Development Programme (*Program Rozwoju Kompetencji Cyfrowych - PRKC*) as part of the Polish RRP **– faced several challenges in 2024, including delays and changes to the scope of its activities**. As a result, uneven progress was made in achieving the programme's objectives for digital skills, with an achievement level of 50% or more for 35% of the indicators (15 out of 43), while 47% of the indicators (20 out of 43) showed no change from their initial values. During the meeting in February 2025, the Ministry of Digital Affairs indicated that the revision of the programme to update its measures and introduce new ones would start in 2025.

In 2024, Poland fulfilled several milestones under its RRP by adopting a set of policy documents that propose: (i) a new digitalisation policy for education; (ii) standards for equipping schools with digital infrastructure; and (iii) procedures for distributing ICT equipment and providing infrastructure to schools. These documents provide the necessary framework for the projects (including those funded by the RRF) to equip schools with the connectivity and tools that they need. However, the adoption of the projects was delayed by almost two years compared with the original timing in the RRP, which had a knock-on effect on the subsequent actions.

2024 recommendation on basic digital skills: Include in the roadmap measures to improve the basic skills of younger population (e.g., actions to improve digital equipment in schools, qualifications of ICT teachers, changes to programmes to increase the attractiveness of STEM disciplines).
In 2024, Poland made some efforts to address the recommendation through new policy actions. The Polish authorities implemented measures listed in the national roadmap, as well as others not included there, such as the 2019-2029 Programme for the Development of IT Talent and the adoption of the policy framework for equipping schools with ICT. However, due to delays in certain fields and the fact that the roadmap has yet to be revised, this recommendation cannot be considered to have been addressed fully.

ICT specialists

In Poland, the proportion of ICT specialists in total employment is 4.5% (the 2030 national target is 6%) after increasing by +4.7% in 2024, but is below the EU average of 5.0%. The country is on track according to its national trajectory.

The proportion of ICT specialists in total employment in 2023 was 4.3%, and Poland's growth rate for this indicator in 2024 was higher than the EU's of +4.2%. This indicates that Poland is making progress, but still has substantial ground to cover.

Poland's trend for women as a proportion of ICT specialists is very concerning. In 2023, Poland had a higher proportion of female ICT specialists (19.1%) than the EU average of 19.4%. However, by 2024,

this figure had dropped to 17.5%, falling below the EU average of 19.5%. Poland's growth rate for female ICT specialists (-8.4%) was significantly lower than the EU's of +0.5%. As a result, 7 400 fewer female ICT specialists were employed in 2024 than in 2023, while the number of male ICT specialists grew by 33 800. This suggests that despite some efforts in this area, Poland is failing to retain or attract female talent in the ICT sector.

On the other hand, the data on the provision of ICT training by enterprises give reasons for optimism. In 2022, 24.69% of Polish enterprises with 10 or more employees provided ICT training, surpassing the EU average of 22.37%. This trend continued in 2024, with Poland at 31.39% compared with the EU average of 22.29%. Poland's annual growth rate of 12.8% in this area significantly outpaces the EU's of -0.2%.

According to the Eurostat experimental statistics, which rely on web scraping of online job advertisements for ICT specialists, the most sought-after profile in Poland was 'software and applications developers and analysts', representing 69.0% of online job advertisements for ICT specialists (58.0% at EU level). Two types of profile are more sought-after in Poland than in the EU on average: 'information and communications technology service managers' (7.8% of online job advertisements for ICT specialists) and 'database and network professionals' (10.5%).

Poland is aiming for ICT specialists to represent 6% of employment by 2030. If the current rate of growth is maintained, achieving this target should be possible. However, the EU target for ICT specialists is set at 10% and, given Poland's weighting in overall employment, its lower target could have significant consequences for achieving the Digital Decade Policy Programme's goals. For the moment, the Polish authorities are not considering revising the national target, but do not rule this out after the Digital Competence Development Programme has been amended.

2024 recommendation on ICT specialists: Take measures to increase the number of ICT specialists (e.g., improved visibility and accessibility of training and reskilling options; incentive schemes to attract new / retain current ICT specialists) and promote ICT studies and careers to women and girls.

In 2024, the Poland continued the implementation of existing measures but did not take any new measure. The Polish authorities intend to adjust the roadmap, but have not yet completed this process. Therefore, it is not possible to determine whether the recommended changes have been carried out. At the same time, in 2024, Poland implemented some measures to make ICT studies and careers attractive to women and girls and to train ICT specialists in specific areas (see below). However, no initiatives to improve the visibility and accessibility of training and reskilling options were reported.

In 2024, Poland did not introduce any new measures in this domain but implemented those already ongoing or planned earlier. They included:

- the *'Become a digital expert'* (*Zostań cyfrową ekspertką*) project to finance training for women in more advanced digital skills;
- *Education for digital accessibility* (*Edukacja DC*) to train 2 200 specialists in digital accessibility;
- the *'Training of high-class specialists in the field of HPDA+'* (*Kształcenie wysokiej klasy specjalistów w zakresie HPDA+*) programme aimed at training 300 specialists in high-performance data analysis (HPDA) and related fields, including big data, AI, and quantum computing.

Key digital public services and solutions – trusted, user-friendly, and accessible to all

Poland scored 70.69 for digital public services for citizens (the 2030 national target is 100) after an increase of +10.9%. However, this figure is below the EU average of 82.32 and country is lagging behind its national trajectory. In 2023, Poland's total score for digital public services for citizens was 63.73, compared with the EU's score of 79.44, and in 2024, it reached 70.69, which was still below the EU's score of 82.32. However, Poland's growth rate of 10.9% outpaced the EU's of 3.6%. Poland scored 42.38 in 2023 and 49.58 in 2024 for cross-border digital public services for citizens, which were both lower than the EU's scores of 68.37 and 71.28, respectively. Nevertheless, Poland's growth rate of 17.0% was significantly higher than the EU's of 4.3%. The proportion of people using government internet websites or apps in Poland is increasing year after year (from 62.62% in 2022 to 67.94% in 2024), but remains below the EU average of 74.71% in 2024.

Poland scored 85.0 for digital public services for businesses (the 2030 national target is 100) after an increase of +16.6%. While this figure is below the EU average of 86.23, the country is on track according to its national trajectory. Poland's total score was 72.88 in 2023 and 85.0 in 2024, which were both below the EU's scores of 85.42 and 86.23, respectively. However, the country's growth rate of +16.6% was substantially higher than the EU's of 0.9%. For cross-border digital public services for businesses, Poland's scores were 51.39 in 2023 and 70.0 in 2024, which were both below the EU's scores of 73.13 and 73.76, respectively. However, Poland's growth rate of 36.2% was significantly higher than the EU's of 0.9%.

Poland's access to e-Health records shows a different pattern with regard to the growth rate. Poland had a score of 91.82 in 2024 (the 2030 national target is 100), which is above the EU average of 82.7. The country is on track according to its national trajectory. In 2023, Poland's total score was 90.03, which was higher than the EU's of 79.12, and in 2024, it was 91.82, which was higher than the EU's of 82.7. However, Poland's growth rate of 2.0% was lower than the EU's of 4.5%.

eID

Poland has three eID means and it notified two of them – the personal profile (*profil osobisty*) and the trusted profile (*profil zaufany*)– to the European Commission. The 'mCitizen profile' (*profil mObywatel*) – which was made available in July 2023 as a feature of the mObywatel 2.0 public mobile application, will not be notified. This is due to the work on implementing solutions related to the European digital wallet standard. The mCitizen profile should be replaced by new solutions developed under the European Digital Identity Regulation.

The mObywatel public mobile application, which individuals can use to confirm their identity online and access the main public systems and registers (including e-Health) has been widely adopted. By February 2025, it had been downloaded 21.7 m times, which represents a 34% increase compared with the end of 2023 (16.2 m downloads) and is an impressive figure, given that the entire adult population of Poland is almost 30.8 m.

Poland is participating actively in several Large Scale Pilots (LSPs) to test the specifications of EU Digital Identity Wallets in a wide range of use cases, before their roll-out to Member States. Polish stakeholders, both public and private, are taking part in three of the four LSPs' projects, which began in April 2023:

- POTENTIAL, which involves work on identification for e-Government Services, bank account opening, registration of SIM cards, mobile driving licences and health credentials for e-Prescription;

- EWC, which pilots the use cases for digital travel credentials, payments and organisational digital identities;
- DC4EU, which involves education/professional qualifications and social security documents.

Polish stakeholders are also participating in two of the LSPs' projects that were selected in 2025:

- WE BUILD, which pilots the use of EUDI Wallets across 13 use cases in the areas of businesses, supply chain, and payments;
- APTITUDE, which involves work on the use of EUDI Wallets across four use cases: payments and banking, mobile vehicle registration certificates, digital travel credentials, and tickets and travel check-in.

Poland is also a member of the EUROPEUM European Digital Infrastructure Consortium (EDIC), which aims to strengthen and expand the activities of the European Blockchain Partnership, including the use of this technology in relation to eID. Poland plans to develop its blockchain capabilities through the Europeum initiative. The first Polish node in the European Blockchain Services Infrastructure (EBSI) network operates at the NASK PIB, which will also establish a Polish blockchain skills centre to support the development of the country's blockchain ecosystem and promote the growth of the EBSI network. The centre will focus on enhancing cybersecurity for blockchain applications, also by developing algorithms and addressing potential threats and vulnerabilities, such as those related to post-quantum cryptography and quantum technologies.

Digitalisation of public services for citizens and businesses

Poland aims to reach a score of 100 for the digitalisation of public services for citizen and businesses. Its current observed rate of growth is significantly higher than EU average and should be more than sufficient to achieve the target.

In 2024, Poland continued its actions to digitalise public sector. In addition to those listed in the roadmap, like development of the electronic documentation management system (*Elektroniczne Zarządzanie Dokumentami, EZD*), or the advancement of e-health services discussed in the next section of the report, citizens and businesses alike were able to benefit from the improvements of the e-Tax Office (e-Urząd Skarbowy), which included making it possible to export the tax declaration history or launching the e-WIS feature (which enabled electronic handling of requests for binding tariff information).

Furthermore, the 'Your e-PIT' (*Twój e-PIT* - electronic personal income tax) service was extended to include business owners and agricultural producers, facilitating the filing of over 13 million tax returns in 2024, compared with fewer than 11 million in 2023.

Moreover, Poland developed some innovative digital solutions for public administration. In late 2023, a consortium of six Polish institutions leading in the field of AI and linguistics launched a project to develop the first open Polish LLM and an associated smart assistant that can help provide public services. The result of their work - a PLLuM (Polish Large Language Model) – was presented by the Ministry of Digital Affairs in February 2025.

At the same time, the Ministry announced the creation of a new consortium – HIVE – which will continue and strengthen the research in this area, develop Polish large language models and implement them. Among potential applications for the PLLuM is creation of a virtual assistant in

mObywatel or an intelligent assistant for administration officials. The budget allocated for these activities in 2025 will be PLN 19 m (EUR 4.4 m)

Development of digital public services remains an important priority for Poland. The draft State Digitalisation Strategy (*Strategia Cyfryzacji Państwa*) calls for improving the functionality, efficiency, and interoperability of these services, and integration of advanced technologies like AI is identified as a key direction for enhancing the delivery of services.

Furthermore, to better coordinate digitalisation in Poland, and in its public services in particular, the Polish government intends to enhance collaboration across its departments. This will be achieved by appointing Digitalisation Plenipotentiaries within ministries and a strengthened Committee for Digitalisation within the Council of Ministers to oversee the process, define objectives and assess needs.

The Ministry of Digital Affairs is preparing an amendment to the Act on computerisation of activities by bodies performing public tasks (*ustawa o informatyzacji działalności podmiotów realizujących zadania publiczne*), to introduce solutions promoting digital transformation through improved interoperability, public registers, electronic information exchange, IT system inventory, and support for local government. These new provisions are targeted for implementation in 2025.

2024 recommendation on key digital public services: Make efforts to digitalise public services, with particular attention to re-use of information available to public administrations and user support.
In 2024, Poland made some efforts to address the recommendation through new policy action. In addition to measures already included in the roadmap, which expanded the scope and user base of some of the digital services, the country also developed the Polish Large Language Model. This novel solution using AI technology will find application in public administration to improve users' experience.

e-Health

Poland is aiming for a score of 100 on access to medical records, in line with the 2030 EU target. Given the high score it achieved in 2024 the current rate of progress, this is realistic, and more than EUR 1 bn have been allocated to the two measures in the national roadmap, whose goal is to increase to scope of health data available through the Internetowe Konto Pacjenta (IKP).

Currently, over 19 million people in Poland (more than 60% of the adult population) use a free online account for patients in the Polish healthcare system, called the Internetowe Konto Pacjenta (IKP). It is also accessible in its mobile version, mojeIKP and provides secure access to various health-related information and services.

In 2024, IKP and mojeIKP were updated with new functionalities, enabling patients to check their eligibility for treatment under the National Health Fund (NFZ), access detailed information on e-prescriptions for medical devices, and view their individual medical care plans agreed upon with their doctors.

Moreover, a new feature was added in MojeIKP, allowing patients to submit applications for the European Health Insurance Card (EHIC) and track the status of their application. A pilot project for central e-registration for selected healthcare services, including mammography, cytology, and first-time cardiology visits, was also conducted in 2024.

In this period Polish citizens were actively encouraged to use the e-health services. The e-Health Centre (*Centrum e-Zdrowia – CEZ*), which develops digital services and solutions for public health, promoted the use of key e-health services in publications explaining the features and benefits of IKP and mojeIKP across various platforms like pacjent.gov.pl, ezdrowie.gov.pl, and cez.gov.pl, and through paid advertising campaigns targeting specific demographics, such as parents.

CeZ promoted other digital health services, such as the Central e-Registration pilot and the Top SOR service for checking waiting time at the hospital emergency departments (*Szpitalny Oddział Ratunkowy – SOR*), through articles, printed leaflets, and social media engagement.

The Polish authorities were also actively involved in developing the European Health Data Space (EHDS). In 2024, Poland participated with other Member States in (i) the Xt-EHR project to develop European formats for the electronic exchange of health records, in the TEHDAS2 project to prepare for implementation of the EHDS regulation (in the part concerning secondary use of data), and (ii) the Capacity Building on Primary Use of Health Data project for public administration staff dealing with national digital health services.

Furthermore, in 2024, Poland launched a project to deliver the cross-border patient summary by the end of 2026. This will contain information on major health aspects, such as blood type, allergies, currently taken medications, chronic diseases, surgeries and implanted devices. The patient summary will help doctors develop appropriate treatment, avoid potential risks and overcome language barriers.

In 2024, work on the analysis was underway. The implementation of the Patient Summary, together with other cross-border e-services, such as cross-border e-prescriptions (which now allows data to be shared with 9 countries: Estonia, Finland, Czech Republic, Croatia, Portugal, Greece, Spain, Latvia, and Lithuania) will make people's healthcare-related data more secure, especially those who often travel within the EU and EFTA countries.

2024 recommendation on e-health: (i) make the data types of current problems and medical images available to citizens through the online access service. (ii) Ensure that all data types are made available in a timely manner.

In 2024, Poland made some efforts to address the recommendation through new policy action. The data category 'current problems' is now made available to citizens, but the data on medical images have yet to become available. Of the 12 data categories available to citizens, four are available in a timely manner, which represents an increase of two categories (data on identification and personal information), compared to the previous year.

However, Poland has reached full maturity on the other aspects of the eHealth framework. Beyond the initiatives included in the current roadmap, Polish authorities also worked to promote the use of the online account for patients among the population and implementing the European Health Data Spaces.

Building a safe and human-centric digital environment and preserving our democracy

The 2025 Eurobarometer shows that **79% of Poles think that public authorities should prioritise shaping the development of Artificial Intelligence and other digital technologies to ensure that they respect our rights and values**. It represents only a slight decrease (one percentage point) compared to last year in Poland, but in the same period the EU average grew by five percentage points to 83%.

In Poland, online participation in political and civic life is increasing. In 2024, 15.82% of people used the internet to participate in consultations, vote or share opinions online. This share is below the EU average, but is trending upward from 13.93% in 2022, following a slight dip in 2023 (13.43%). This is broadly in line with the trend observed at EU level (17.59% in 2022 and 20.45% in 2024).

Disinformation continued to be a significant concern in Poland. In 2024 the Department of Countering Disinformation at NASK-PIB identified fewer instances of obvious, easily recognisable disinformation than in 2023. However, this may be since the authors of disinformation were increasingly using AI tools and relying more on manipulating context than creating entirely new information, making it more difficult to identify and refute the messages.

According to the 2024 report 'Disinformation through the eyes of Poles', (*Dezinformacja Oczami Polaków. Edycja 2024*), 79% of Poles declared that they had encountered disinformation, and that compared to the first survey in 2021 this percentage had not changed significantly (81%).

One particularly notable disinformation incident that occurred last year was publication of a fake dispatch with alleged statements by Prime Minister Donald Tusk announcing the mobilisation of Polish reservists. Because it was planted following a cyber-attack on the systems of a well-known press agency, many services repeated it on their channels, before the false information was denied and removed, causing considerable confusion and widespread public concern.

According to the Digital Decade Eurobarometer 2025, **84% of Poles believes that countering and mitigating the issue of fake news and disinformation online should be a priority for the public authorities.**

Tasks related to counteracting disinformation are carried out by several institutions, and a lack of appropriate coordination and communication between them remains a challenge. The draft State Digitalisation Strategy (*Strategia Cyfryzacji Państwa*) lists the following bodies as being active in this area in 2024: NASK-PIB, the Ministry of Foreign Affairs, the National Broadcasting Council (media education), the Government Security Centre (analysis of threats, including those related to disinformation), other relevant services (including the SKW – Military Counterintelligence Service and the ABW – Internal Security Agency) and the commission for investigating Russian and Belarusian influences. So, one of the goals for the draft Strategy is identifying a government body to supervise and integrate the activities of these various bodies, to improve coordination and communication.

Another challenge is the insufficiently critical approach to content that may be disinformation. In 2023, according to data collected by Eurostat,[12] 47.23% of Polish people said they had encountered untrue or doubtful information or content on internet news sites or social media, above the EU average of 49.25%.

Of these, 18.40% checked its truthfulness, representing a modest level of critical evaluation among those who perceived such content as misleading. Young people (16-24) (61.43%) reported more exposure than adults (25-64) (51.20%), which may be linked to different trends in internet usage, but the difference was on par with the EU average (61.66% vs 51.70%).

However, the difference in verification rates - 25.97% of young people verified content compared to 20.19% of adults – was much lower than the EU average (34.68% vs 25.18%). Males (48.17%) and females (46.34%) reported similar exposure rates, with males being slightly more likely to verify content, at 19.0% compared to 17.84% for females.

[12] This employed a different methodology than the 2024 'Disinformation through the eyes of Poles' report, so is not comparable.

In 2024, the Department of Countering Disinformation at NASK-PIB monitored social media platforms and the internet for potential disinformation, and reported suspicious content to the relevant authorities. Moreover, to enhance public awareness of disinformation and encourage a critical approach, especially among young people, NASK-PIB continued to run the 'Make it clear - educating young people against disinformation online' project, together with partners in Latvia and Romania. This project is funded under Creative Europe programme and aims to develop information skills in young people, as well as a conscious and critical approach to content shared in the media, especially social media.

Another initiative implemented in 2024 was the 'Security in Cyberspace' project by the Warsaw Institute of Banking and NASK-PIB. A total of 34 webinars on disinformation and cyberbullying were conducted for primary and secondary schools, covering a total of 23 794 students.

To help adults improve their digital skills, including those necessary to protect themselves online, from October to December 2024 Polish Radio broadcast a campaign called *In the digital world* (*W cyfrowym świecie*) across 17 regional stations. The goal was to encourage citizens to constantly improve their digital skills, raise their awareness of the threats and problems occurring in the digital world and build awareness of the need for conscious and safe use of broadly understood technology. The campaign was addressed to all citizens, with an emphasis on people aged 45+.

Almost one third of the Polish population, especially young people, encounters hostile or degrading messages online. In 2023, 29.95% of people encountered such messages, such as those based on religion or racial origin. Although concerning, this figure was below the EU average of 33.5%. Young people (16–24) (41.95%) reported significantly higher exposure than adults (25–64) (31.74%), pointing to a marked age-related gap. Males (30.61%) and females (29.33%) experienced almost identical levels of exposure.

According to the Digital Decade Eurobarometer 2025, **86% of Poles think the public authorities should urgently take action to protect children online and put in place age assurance mechanism to restrict age-inappropriate content.** 85% of them has the same view about the measures to counter the negative impact of social media on the children's mental health and 84% - to counter the cyberbullying and online harassment.

One of the solutions available to victims of the hostile or degrading messages is reporting them anonymously to *Dyżurnet.pl*, which is NASK-PIB contact point for reporting potentially illegal online material. In 2024, *Dyżurnet.pl* received significantly more reports (28 000) than in 2023 (over 18 000). 19 000 of them concerned CSAM (child sexual abuse content), three times more than the previous year.

Over 11 000 of those reports were confirmed, a six-fold increase compared to previous years. Another worrying trend was the increase in number of incidents related to the creation of child sexual abuse or exploitation content - since 2022 the amount of such content has doubled, from 44 to 103 cases – pointing to an increase in the use of AI tools to produce such material.

Another solution for combating certain forms of abuse in electronic communication - fake SMS messages (smishing) – is the law combating abuse in electronic communications adopted in 2023. Under this legislation, the CSIRT (computer security incident response team) at the NASK-PIB, one of the national-level CSIRTs, analysed text messages containing smishing and sent their patterns to telecoms operators so that they can block text messages that match this pattern. In 2014, 746 such patterns were distributed to limit the spread of SMS messages used by fraudsters.

Leveraging digital transformation for a smart greening

Polish authorities recognise the interrelation between the digital and green transformations. The draft State Digitalisation Strategy (*Strategia Cyfryzacji Państwa*), shared for consultation in November 2024, was the first national policy document calling for a more comprehensive approach in this area. It sets out to ensure the availability and reuse of data on energy sector activities, improve monitoring of the environmental impact of digital technologies by public administrations, promote digital technologies that support the green transformation and an environmentally-friendly ICT sector, and raise citizens' awareness of digital ecology. However, the Strategy has yet to be revised after the public consultation and adopted by the government in a finalised form, and neither the precise steps to be taken in this area nor any deadlines have been set.

At the same time the energy consumption of the digital sector is growing rapidly, especially due to data centres' needs. According to the PMR consultancy, in 2023 the capacity allocated to data centres in Poland amounted to 173 MW, almost 43% more than in 2022. In turn, the forecast for 2030 is at least 500 MW, which translates into a cumulative annual growth rate (CAGR) of 25%. This trend may continue well into the future: the Transmission Network Development Plan (Plan rozwoju sieci przesyłowej) for 2025-2034, prepared by the PSE (*Polskie Sieci Elektroenergetyczne*), predicts that at the end of this period, data centres will have 1 063 MW of power and their energy consumption will be 9.3 TWh.

The Polish population recycles only a small part of its ICT equipment and the share of the population who regularly recycle these devices decreased between 2022 and 2024. In 2024, for each category of device, Poles recycled them less often than in the whole EU on average: laptops and tablets (7.59% vs. 11.31%), desktop computers (9.57% vs. 14.66%) and mobile/smart phones (10.28% vs. 10.93%). The figures observed last year were also lower than those in 2022, when 9.4% of people in Poland had their laptops or tablets recycled, 12.8% their desktop computers, and 12.4% their mobile/smart phones.

Poles pay more attention than the EU average to energy efficiency when purchasing ICT devices, but less to the eco-design of the device (e.g. durable, upgradeable and reparable designs that require fewer materials; environmentally-friendly materials used for packaging). 21.01% of people in Poland considered energy efficiency as important when purchasing ICT devices (EU: 19.35%) but the eco-design of the device was considered important by only 8.54%, below the EU average (12.04%). However, those two eco-friendly criteria take on less importance for the buyer than the price, performance and design of the device.

In 2024, Poland implemented the following measures from its national roadmap:

- the Agrifood TEF (test and experiment facility) to help technological companies in the agri-food sector develop and validate AI and robotics solutions in real-world conditions, to create and produce more efficient machines and processes,
- participation in the Destination Earth initiative, aiming to create the earth's digital twin,
- support for transformation of enterprises to contribute to the circular economy, under its RRP (a call to select beneficiaries was completed in late 2024)

- development of national systems analysing satellite data, including to better protect the environment, under the RRP (to be completed by August 2026)

Rural and rural-urban municipalities (gminas), which are a majority of the over 2 500 local government units in Poland, often lack qualified personnel to implement modern technologies. Hence, the initiatives that integrate modern technologies, sustainable development, and energy savings to create a better urban environment were implemented by several larger cities. For example, **Przemyśl** has implemented a monitoring system to track water levels and weather conditions, allowing for early warnings and better preparedness for potential floods. **Gdańsk** has developed the Tristar system, a comprehensive traffic management platform that optimises traffic flow and improves public transportation. And **Grudziądz** uses a combination of sensors hidden in garbage cans and a SaaS system that collects data on when the containers are full, to optimise routes for municipal rubbish collection vehicles.

The market for Smart Cities solutions in Poland is expected to grow. According to the intelligence platform Statista, by 2025 market revenue is expected to reach close to EUR 456 million. This growth is expected to continue at a compound annual growth rate of 12.74% from 2024 to 2029, with the market value reaching EUR 737.5 million by the end of that period.

2024 recommendation on green ICT: (i) Mainstream considerations for the impact on the environment, including potential synergies, in the strategical reflection on national digital policy and develop a coherent approach to twinning the digital and green transitions. First, promote improvements in energy and material efficiency of digital infrastructures, in particular data centres. Second, support the development and deployment of digital solutions that reduce the carbon footprint in other sectors, such as energy, transport, buildings, and agriculture, including the uptake of such solutions by SMEs. (ii) Monitor and quantify the emission reductions of the deployed digital solutions in line with the relevant EU guidance and with the support of the methodology developed by the European Green Digital Coalition, in view of future policy development, as well as of attracting relevant financing
No information available on measures taken to address the recommendation. Poland plans to take a more comprehensive approach regarding the digital and green transformations, but for the moment specific information on relevant measures is lacking and systems for improved monitoring, to ensure the availability and reuse of data on energy sector activities, have not yet been put in place.

Annex I – National roadmap analysis

Poland's national Digital Decade strategic roadmap

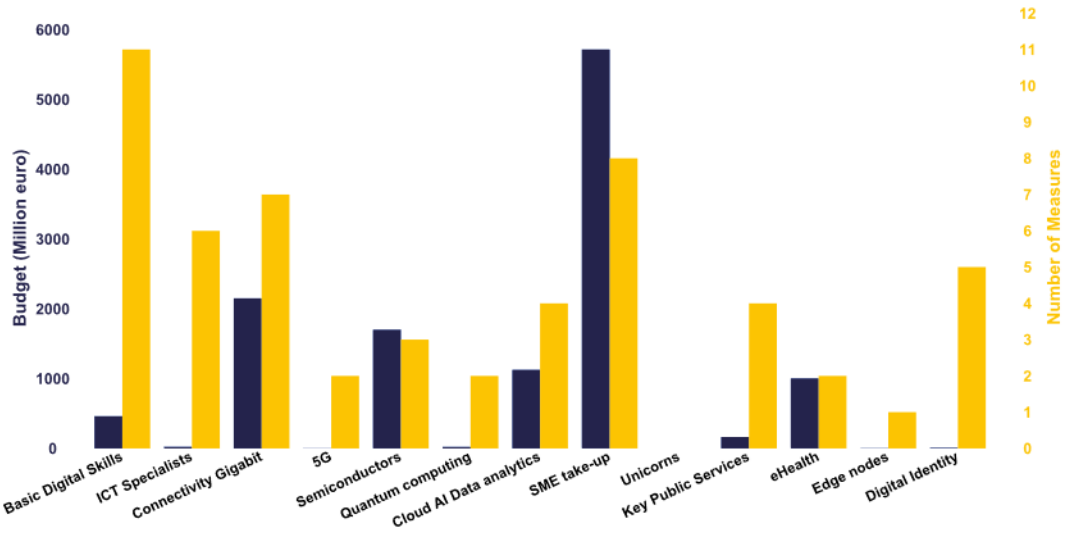
Poland adopted its national Digital Decade roadmap on 22 October 2024. The country report published in July 2024, relied on the draft roadmap, shared on 30 January 2024 by the Polish authorities. The differences between this draft and the formally endorsed document were not substantial and do not alter the relevant findings of the above-mentioned report.

Polish authorities have yet to submit the adjustments to the roadmap. They declared their intention to do so, in line with article 8 (3) of the decision establishing the Digital Decade Policy Programme, but at time of writing neither the formally endorsed document nor its draft has been shared with the Commission.

There is hence **no information available on measures taken to address the following recommendation issued in 2024:**

- **TARGETS**: (i) Consider aligning with EU targets the level of ambition of targets for the number of ICT specialists and for enterprises' take-up of AI and data analytics.
- **MEASURES**: (i) Strengthen measures contributing to the targets that are the most difficult to achieve for digital skills. (ii) Review the description of measures on the digitalisation of businesses and connectivity to clarify their contribution to specific KPI. (iii) Provide information on relevant measures at regional level, including regional operational programmes funded from the cohesion policy. (iv) Provide information about the estimated investment gap, where this was not available (i.e., on digital skills, ICT specialists, semiconductors, edge nodes, implementation of key digital online public services, e-health and e-ID). (v) Provide more information on the implementation of digital rights and principles (and Digital Decade general objectives), including what national measures contribute to it.

Measures and budget in national roadmap[13]



The roadmap includes 55 measures, with a total value of almost EUR 12.4 billion (about 1.5% of GDP). They cover all Digital Decade targets, but some measures are deemed to contribute to more than one target (e.g. measures related to digitalisation of businesses), making precise attribution difficult. The roadmap also lists measures relating to general objectives, but without providing information about their budget or timing.

[13] When referring to national roadmaps, the data in this report are those declared by the Member States in their national roadmaps, on the basis of the Commission's guidance (C(2023) 4025 final). This data might reflect possible variations in reporting practices and methodological choices across Member States. No systematic assessment was made of the extent to which Member States followed the guidance.

Annex II – Factsheet on multi-country projects (MCPs) and funding

Multi-country projects and best practices

Poland is a member of the Alliance for Language Technologies EDIC and of the EUROPEUM EDIC, and is working towards setting up an EDIC in the area of connected public administration. Poland is directly participating in the IPCEI on Microelectronics and Communication Technologies (IPCEI-ME/CT) and in the IPCEI on Next Generation Cloud Infrastructure and Services (IPCEI-CIS). It is also a participating state in the EuroHPC Joint Undertaking (JU) and the Chips JU.

Poland has not yet presented any projects under the Digital Decade's Best Practice Accelerator.[14]

EU funding for digital policies in Poland

Poland allocates 21% of its total recovery and resilience plan to digital (EUR 7.5 billion)[15]. In addition, under cohesion policy, EUR 5.7 billion (representing 8% of the country's total cohesion policy funding), is dedicated to advancing Poland's digital transformation[16]. According to JRC estimates, EUR 10.10 billion directly contribute to achieving Digital Decade targets (of which EUR 6.17 billion comes from the RRF and EUR 3.93 billion from cohesion policy funding)[17].

The largest amount from the Recovery and Resilience Plan is dedicated to ensuring access to high-speed internet (EUR 1.4 billion), followed by investment in digital infrastructure and equipment for schools, as well as digital skills for teachers (EUR 1.2 billion) and those focused on e-Health (EUR 1 billion).

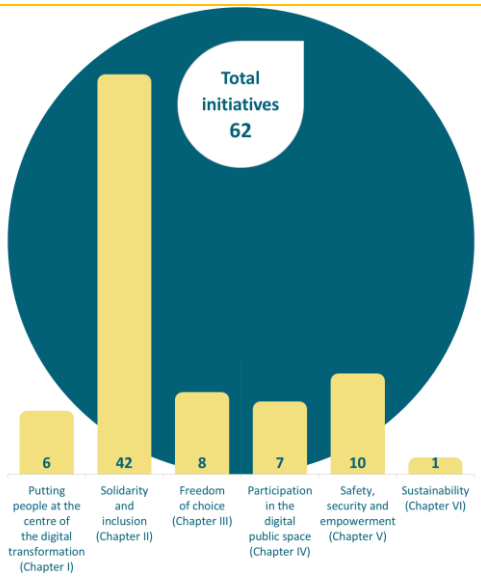
[14] The Best Practice Accelerator (BPA) is a platform that enables Member States to share successful measures and challenges encountered in their efforts to meet their Digital Decade targets and objectives. Best practices are made available to Member States via the BPA Repository and showcased in regular workshops, currently focused on three thematic clusters: Digital Skills, Green IT, and the Uptake of Digital Technologies.

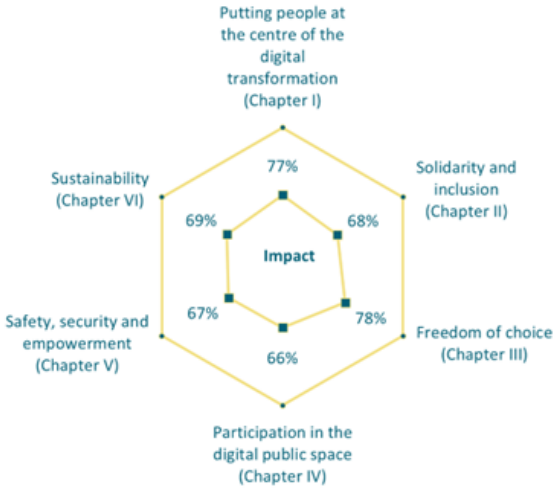
[15] The share of financial allocations that contribute to digital objectives has been calculated using Annex VII to the Recovery and Resilience Facility Regulation. Last data update: 16 May 2025.

[16] This amount includes all investment specifically aimed at or substantially contributing to digital transformation in the 2021-2027 Cohesion policy programming period. The source funds are the European Regional Development Fund, the Cohesion Fund, the European Social Fund Plus, and the Just Transition Fund.

[17] Joint Research Centre, Nepelski, D. and Torrecillas, J. Mapping EU level funding instruments 2021-2027 to Digital Decade targets – 2025 update, Publications Office of the European Union, Luxembourg, 2025, JRC141966. Last data update: 10 March 2025.

Annex III – Digital Rights and Principles[18]





Activity on Digital Rights and Principles (figure 1)

According to the support study, Poland has been relatively active in implementing digital rights and principles, with 62 initiatives overall and 6 new initiatives launched in 2024, showing notable progress towards its commitments. Poland is most active in the area of Digital education, training and skills (II). There is room for improvement, especially with regards to A fair digital environment (III) and Sustainability (VI) where less activity has been identified.

Impact of Digital Rights Initiatives (figure 2)

Quantitative impact indicators developed by the support study illustrate the level of implementation of digital rights initiatives on the ground. Based on available data, they estimate the impact of measures implemented by key stakeholders in Poland (mainly national government) and how these are perceived by citizens.

The indicators suggest that **Poland is most successful in implementing commitments related to Freedom of choice** (III). Poland should strengthen efforts in areas where the impact of digital rights initiatives appears to be limited, notably on Participation in the digital public space (IV).

According to the Special Eurobarometer 'Digital Decade 2025', **57% of citizens in Poland think that the EU protects their digital rights well** (a 9% decrease since 2024). This is above the EU average of 44%. Citizens are particularly confident about getting more freedom of expression and information online (68%, above the EU average of 60%). They are most worried that their right to a safe digital environment and content for children and young people is not well protected (35%, below the EU average of 48%).

[18] Based on a study to support the Monitoring of the Implementation of the Declaration on Digital Rights and Principles, available here. For a more detailed country factsheet accompanying the study, click here.