



# **Digital Economy and Society Index (DESI) 2021**

**Poland**

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## About the DESI

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*The European Commission has monitored Member States' progress on digital and published annual Digital Economy and Society Index (DESI) reports since 2014. Each year, the reports include country profiles, which help Member States identify areas for priority action, and thematic chapters providing an EU-level analysis in the key digital policy areas.*

*In 2021, the Commission adjusted DESI to reflect the two major policy initiatives that will have an impact on digital transformation in the EU over the coming years: the Recovery and Resilience Facility and the Digital Decade Compass.*

*To align DESI with the four cardinal points and the targets under the Digital Compass, to improve the methodology and take account of the latest technological and policy developments, the Commission made a number of changes to the 2021 edition of the DESI. The indicators are now structured around the four main areas in the Digital Compass, replacing the previous five-dimension structure. 11 of the DESI 2021 indicators measure targets set in the Digital Compass. In future, the DESI will be aligned even more closely with the Digital Compass to ensure that all targets are discussed in the reports.*

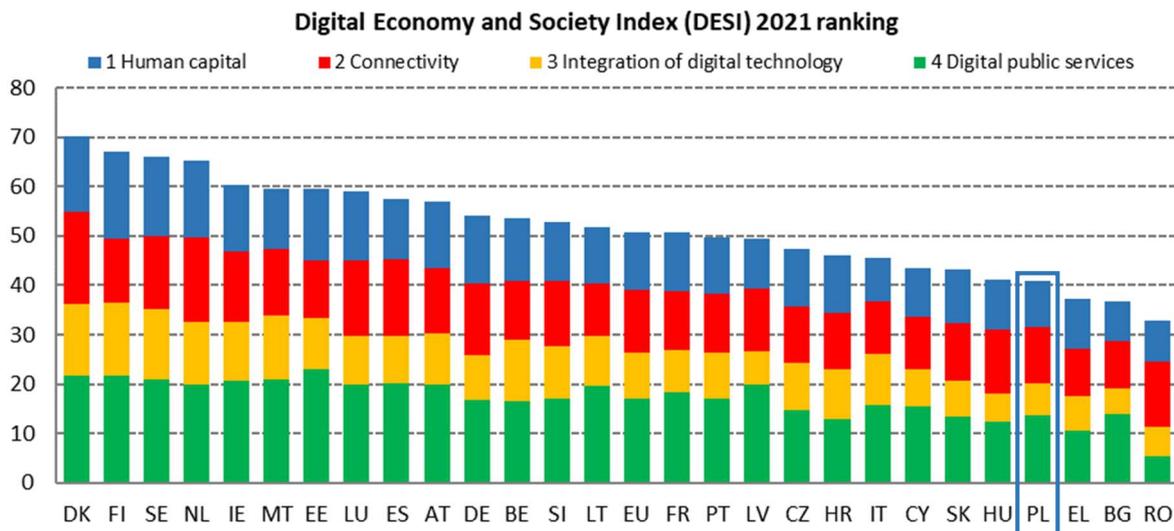
*In addition, DESI now includes an indicator measuring the level of support that adopted ICT technologies provided companies in taking more environmentally-friendly measures (ICT for environmental sustainability) and the take up of gigabit services, plus the percentage of companies offering ICT training and using e-invoicing.*

*The DESI scores and rankings of previous years were re-calculated for all countries to reflect the changes in the choice of indicators and corrections made to the underlying data.*

*For further information, see the DESI website: <https://digital-strategy.ec.europa.eu/en/policies/desi>.*

## Overview

	Poland		EU
	rank	score	score
DESI 2021	24	41.0	50.7



Poland ranks 24th of 27 EU Member States in the 2021 edition of the Digital Economy and Society Index (DESI).

During 2020, Poland made progress in many indicators, but given the equally positive developments in other countries this has not translated into a change in its overall position. There are still persistent significant gaps as regards human capital, where Poland ranks 24th, scoring below average on most of the indicators. Although the country has reached the EU average in the percentage of ICT graduates among total graduates, the shortage of specialists is significantly affecting businesses' integration of digital technology, preventing enterprises, in particular SMEs, from tapping the full potential offered by the digital economy.

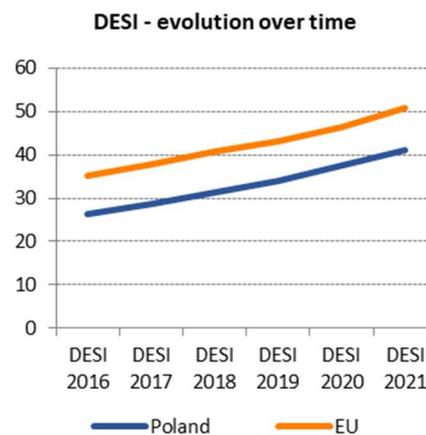
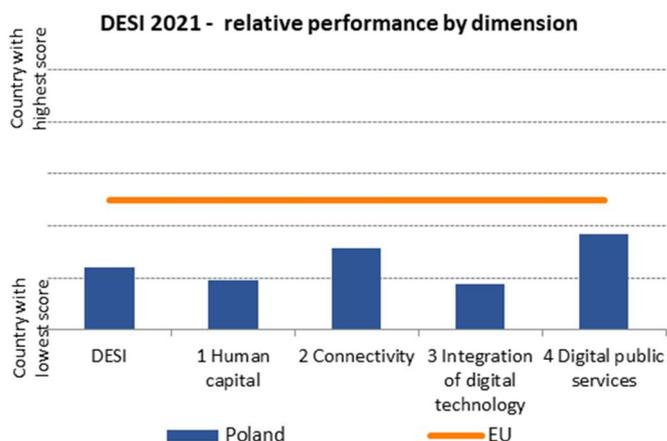
The COVID-19 pandemic had a major impact on the education system, with Poland having to make a sudden switch from stationary to remote learning. This increased the demand from pupils and teachers for equipment, software and digital skills dedicated to remote learning and teaching. Also, many digital tools and e-learning platforms had to be modernised fast. Many funding projects were subsequently launched to fulfil the demand and assist all those involved in the transition.

On connectivity, progress continued in 2020 for fixed broadband take-up and there was an increase in the percentage of households covered by Fixed Very High Capacity Networks – 64.6%, compared to 60.3% in 2019. Nevertheless, efforts are still needed on connectivity, notably on legislation favourable to the development of robust connectivity, ensuring full transposition of the EU regulatory framework. Additionally, as Poland has not assigned any harmonised radio spectrum for 5G deployment, swift assignment will be necessary for the provision of 5G connectivity under transparent, open and non-discriminatory conditions.

Digital technologies kept on gaining popularity among Polish enterprises, with 15% using cloud solutions and 18% integrating some kind of AI technology in their operations. It is important to continue efforts and capacity building among Polish enterprises to digitise further, innovate and create new services and products. Poland will be able to speed up its digital transformation through further incentives to invest, through dedicated support and encouragement (especially for businesses in disadvantaged regions) and by enhancing female digital entrepreneurship.

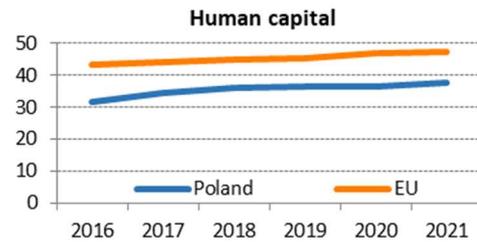
Finally, Poland's performance is offset by below-average scores in digital public services, where additional measures promoting the use of e-government services among businesses and citizens could further boost take-up and improve the country's overall score. Simplification efforts, measures to ensure interoperability and capacity building in the public administration are all-important complementary actions and emerging opportunities for Poland to drive digitalisation across the country. It is important to highlight that one particular Polish digital solution – the *m-Obywatel* digital wallet for documents and services – is currently one of the most developed case studies among European digital identity wallet solutions. Poland could play an even more proactive role in developing and implementing the European Digital Identity Framework.

Autumn 2020 saw a change in the government's organisational structure. As part of a broader government reorganisation, the Ministry of Digital Affairs was merged into the Chancellery of the Prime Minister, with the relevant departments continuing to provide leadership in the government in the digital domain. The pandemic increased the demand for digital public services. This was visible, for example, in the increased subscriptions to the 'Trusted Profile' (central authentication service). In turn, this demand prompted acceleration in the delivery of digital solutions planned many years before. Among the biggest, the Nationwide Education Network (OSE) supplying fast internet access to 23,500 primary and secondary schools in Poland was nearly concluded.



# 1 Human capital

1 Human capital	Poland		EU
	rank	score	score
<b>DESI 2021</b>	<b>24</b>	<b>37.7</b>	<b>47.1</b>



	Poland			EU
	DESI 2019	DESI 2020	DESI 2021	DESI 2021
<b>1a1 At least basic digital skills</b>	<b>46%</b>	<b>44%</b>	<b>44%</b>	<b>56%</b>
% individuals	2017	2019	2019	2019
<b>1a2 Above basic digital skills</b>	<b>21%</b>	<b>21%</b>	<b>21%</b>	<b>31%</b>
% individuals	2017	2019	2019	2019
<b>1a3 At least basic software skills</b>	<b>49%</b>	<b>46%</b>	<b>46%</b>	<b>58%</b>
% individuals	2017	2019	2019	2019
<b>1b1 ICT specialists</b>	<b>3.0%</b>	<b>3.1%</b>	<b>3.4%</b>	<b>4.3%</b>
% individuals in employment aged 15-74	2018	2019	2020	2020
<b>1b2 Female ICT specialists</b>	<b>14%</b>	<b>14%</b>	<b>15%</b>	<b>19%</b>
% ICT specialists	2018	2019	2020	2020
<b>1b3 Enterprises providing ICT training</b>	<b>13%</b>	<b>13%</b>	<b>18%</b>	<b>20%</b>
% enterprises	2018	2019	2020	2020
<b>1b4 ICT graduates</b>	<b>3.5%</b>	<b>3.8%</b>	<b>3.8%</b>	<b>3.9%</b>
% graduates	2017	2018	2019	2019

On Human capital, Poland ranks 24th of 27 EU countries and is thus below the EU average. Levels of digital skills remain low compared to the EU average, with only 44% of people between 16 and 74 years having at least basic digital skills (EU 56%) and only one in five (21%) have above-basic digital skills. On at least basic software skills, Poland scores only 46%, significantly below the EU average of 58%. ICT specialists and female ICT specialists account for a lower percentage of the workforce in Poland than the EU average. Conversely, ICT graduates currently account for 3.8% of all graduates in Poland. Nevertheless, Polish enterprises are investing in ICT training and last year 18% of them offered specialised ICT training to their employees.

The COVID-19 pandemic had a very strong impact on the development of digital skills. The switch to remote learning increased the demand for additional equipment and called for development or modernisation of digital platforms, as well as for training in digital skills. From April 2020 onwards, under the Operational Programme Digital Poland for 2014-2020, co-funded by the European Regional Development Fund (ERDF), the Ministry of Education and Science, and the Digital Poland Project Centre government agency offered local government funding, around EUR 81 million through Remote School projects (*Zdalna Szkoła, Zdalna Szkoła+*), to buy equipment for students and teachers for distance learning (computers, laptops or tablets). Local authorities could also buy software, hardware, mobile internet access or other accessories needed for distance learning. Many other funding projects

were subsequently launched to fulfil these new needs. An example of such a project is the Active Blackboard (*Aktywna Tablica*<sup>1</sup>).

Irrespective of the pandemic, the Operational Programme Digital Poland for 2014-2020, co-funded by the European Regional Development Fund, was in the final stages of implementation, delivering solutions planned many years before. Among the biggest, the Nationwide Education Network providing fast internet access to 23,500 primary and secondary schools in Poland was nearly concluded.

Building on the experience and results of the previous financial planning period, Poland held a consultation on the programmes for the next financial period (2021–2027). As in the previous years, the national Coalition for Digital Skills and Jobs<sup>2</sup> assisted in coordinating opinions from, and actions undertaken by the public society to support digital skills, upskilling and reskilling. However, the policy that it helped to craft, the Digital Competence Development Programme (*Program Rozwoju Kompetencji Cyfrowych*), has not been adopted by the government as a binding document.

Outside of the formal education system, EU Code Week turned out to be a major event for pupils. Thanks to broad involvement by schools, NGOs and other institutions, the number of participants in Poland (632,000) was the second highest among all countries participating, while the number of activities per citizen was the highest in Europe<sup>3</sup>.

2020 saw the launch of a significant project to foster advanced digital skills, the Academy of Innovative Applications of Digital Technologies (AI Tech)<sup>4</sup>. Its goal is to develop a model to educate high-class specialists in artificial intelligence, machine learning and cybersecurity. The project is being implemented in partnership between the Chancellery of the Prime Minister and a consortium of five universities<sup>5</sup> that are well advanced in research in these field. The investment will not only open the door to professional careers for students, but will also intensify the competitiveness of the fastest growing sector of the economy.

Poland needs to enhance digital skills within and outside the education system. A participatory approach in the development of important policies involving, local and regional governments and civil society would be of particular value. It is vital to provide further support for local communities to adjust to the digital age challenges in order to tap the full potential offered by digital economy.

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<sup>1</sup> <https://www.gov.pl/web/edukacja-i-nauka/kolejne-srodki-na-zakup-sprzetu-do-szkol-w-ramach-rzadowego-programu-aktywna-tablica>.

<sup>2</sup> <http://umiejtnoscicyfrowe.pl/>.

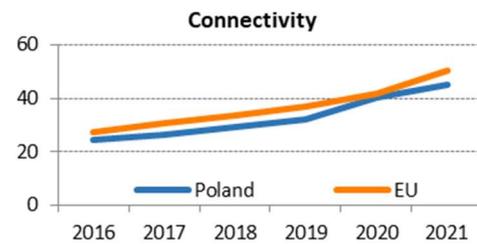
<sup>3</sup> <https://digital-strategy.ec.europa.eu/en/news/eu-code-week-organisers-register-over-72000-activities-second-year-row>.

<sup>4</sup> <https://www.gov.pl/web/govtech/akademia-innowacyjnych-zastosowan-technologiei-cyfrowych-ai-tech>.

<sup>5</sup> The consortium consist of Gdańsk University of Technology, Wrocław University of Science and Technology, Poznań University of Technology, University of Warsaw and Adam Mickiewicz University.

## 2 Connectivity

2 Connectivity	Poland		EU
	rank	score	score
<b>DESI 2021</b>	<b>21</b>	<b>45.3</b>	<b>50.2</b>



	Poland			EU
	DESI 2019	DESI 2020	DESI 2021	DESI 2021
<b>2a1 Overall fixed broadband take-up</b> % households	<b>60%</b> 2018	<b>62%</b> 2019	<b>68%</b> 2020	<b>77%</b> 2020
<b>2a2 At least 100 Mbps fixed broadband take-up</b> % households	<b>23%</b> 2018	<b>28%</b> 2019	<b>37%</b> 2020	<b>34%</b> 2020
<b>2a3 At least 1 Gbps take-up</b> % households	<b>NA</b>	<b>0.47%</b> 2019	<b>1.10%</b> 2020	<b>1.3%</b> 2020
<b>2b1 Fast broadband (NGA) coverage</b> % households	<b>67%</b> 2018	<b>76%</b> 2019	<b>76%</b> 2020	<b>87%</b> 2020
<b>2b2 Fixed Very High Capacity Network (VHCN) coverage</b> % households	<b>29%</b> 2018	<b>60%</b> 2019	<b>65%</b> 2020	<b>59%</b> 2020
<b>2c1 4G coverage</b> % populated areas	<b>&gt;99.9%</b> 2018	<b>99.9%</b> 2019	<b>&gt;99.9%</b> 2020	<b>99.7%</b> 2020
<b>2c2 5G readiness</b> Assigned spectrum as a % of total harmonised 5G spectrum	<b>0%</b> 2019	<b>0%</b> 2020	<b>0%</b> 2021	<b>51%</b> 2021
<b>2c3 5G coverage</b> % populated areas	<b>NA</b>	<b>NA</b>	<b>10%</b> 2020	<b>14%</b> 2020
<b>2c4 Mobile broadband take-up</b> % individuals	<b>47%</b> 2018	<b>58%</b> 2019	<b>58%</b> 2019	<b>71%</b> 2019
<b>2d1 Broadband price index</b> Score (0-100)	<b>NA</b>	<b>81</b> 2019	<b>88</b> 2020	<b>69</b> 2020

Poland ranks 21<sup>st</sup> in connectivity. In 2020, Poland observed an increase in the percentage of households covered by Fixed Very High Capacity Networks – 64.6% compared to 60.3% in 2019. The figure places the country above the EU average for this indicator (59.3%). Poland's total Fiber-to-the-Premises (FTTP) coverage also saw increase – 44.6% in 2020 compared to 38.3% in 2019. FTTP coverage in rural areas remains at a lower level – only 24.1% of rural households were covered by the technology in 2020 (only slightly below the EU average of 24.9%). However, this is an upward trend in comparison with 2019, when 17.9% of rural households had access to the technology.

On fixed broadband take-up, 68% of households subscribed to some kind of broadband connection in 2020, a small increase on the 2019 figure of 62% of households. Poland performs well on access to a fixed broadband connection of at least 100Mbps – 37% of Polish households used such a connection in 2020, above the EU average of 34% for the same indicator.

As for 5G coverage, 10.3% of households were covered by the technology in 2020, only slightly below the EU average of 13.8% for the same indicator. While 4G coverage stands at 99.9%, mobile broadband take-up (58%) lies significantly below the EU average (71%).

On public funding for infrastructure deployment (both fixed and wireless), the Polish authorities plan to continue the 'Digital Poland' Operational Programme in the period 2021-2027. The programme is funded through the EU cohesion funds and is used to provide support to projects implemented in areas where 'Next Generation Access' (NGA) networks do not exist and are unlikely to be established on a commercial basis in the next 3 years. Still under the previous financial programming period, the facility has so far funded investments in broadband networks expected to reach around 2 million households, mainly using the 'Fibre to the Home' (FTTH) technology.

Another source of public funding used to support investments in the deployment of NGA networks in Poland is the Broadband Fund, which began operation at the end of 2020. The Fund is financed through charges borne by telecommunications firms for numbering resources, rights to use radio spectrum, etc.

In its Roadmap implementing the Common Union Toolbox for Connectivity<sup>6</sup>, Poland identifies as desirable a range of reforms concerning e.g. digitisation of permit-granting procedures, issuing guidelines on access to physical infrastructure, and further strengthening the Single Information Point.

Poland has not assigned any harmonised radio spectrum for 5G deployment as of April 2021. Poland considers to establish a wholesale operator in the 700 MHz band and to create a Strategic Communications Operator, a state-owned entity that would provide telecommunications services to the public administration. At the time of drafting of this report, legislative work on the proposals was still ongoing in the executive branch.

The Polish government cancelled the 5G auction for the 3.6 GHz band in May 2020 due to the COVID pandemic. The move came about 6 weeks after the regulator initiated the procedure, offering four licences in the 3.6 GHz spectrum band with validity until 30 June 2035. A new auction proceeding is about to be finalised and submitted to public consultation.

A public consultation carried out between July and September 2020 showed that there was no demand for the 26 GHz band before 2022-2023 among Polish operators.

### Main market & regulatory developments

In June 2020, P4 took control of Virgin Mobile Poland, a virtual mobile network operator and part of the Virgin international investment group. Virgin Mobile Poland will continue its activities within the Play Communications Group.

In the second half of 2020, Orange Poland started establishing a separate company (Światłowód Inwestycje) to build fibre infrastructure in poorly urbanised areas of Poland. Orange Poland intends to transfer in kind to Światłowód Inwestycje around 600,000 fibre lines (of which 150,000 are used for active services, including wholesale). It is understood that Światłowód Inwestycje will be a wholesale operator ensuring open access to its services for other operators.

Poland did not transpose the European Electronic Communications Code (EECC) by the deadline of 21 December 2020 – it is one of the 24 Member States currently facing an infringement

<sup>6</sup> Pursuant to Commission Recommendation (EU) 2020/1307 of 18 September 2020 on a common Union toolbox for reducing the cost of deploying very high capacity networks and ensuring timely and investment-friendly access to 5G radio spectrum, to foster connectivity in support of economic recovery from the COVID-19 crisis in the Union.

procedure for failure to transpose the Directive. The legislative work on the measures transposing the EEC Directive is now expected to be finalised around November 2021.

On 13 November 2020, the Commission registered a notification from the Polish national regulatory authority, UKE, concerning wholesale high-quality access provided at a fixed location in Poland<sup>7</sup>. The content of the notified draft measures covered the analysis of the two separate product markets within the high-quality access market: high-quality access at a fixed location with capacity up to and including 2 Mbps, and a separate market above 2 Mbps. Regarding the former, UKE found that the competitive conditions in the market for leased lines below and including 2 Mbps indicate that the market is effectively competitive. As for the market above 2 Mbps, UKE maintained its conclusion from the previous market review that no operator has significant market power in the market for high-quality access provided at a fixed location above 2 Mbps. The Commission had examined the notification and had no comments.

Poland is currently facing another infringement procedure concerning the termination in May 2020 of the mandate of Marcin Cichy, the then President of UKE. The European Commission considers that the dismissal breached the EU law's safeguards protecting the independence of the national regulatory authorities.

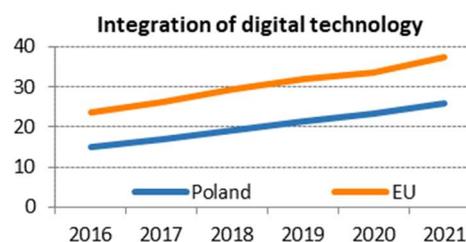
While Poland has at its disposal a range of robust investment instruments, with the potential to advance the deployment of very high capacity networks in the country, it is important that the authorities ensure that legislation is favourable to the development of robust connectivity and that it fully transposes the current EU regulatory framework. A swift assignment of radio spectrum necessary for the provision of 5G connectivity under transparent, open and non-discriminatory conditions is also of crucial importance.

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<sup>7</sup> Corresponding to market 4 in Commission Recommendation 2014/710/EU of 9 October 2014 on relevant product and service markets within the electronic communications sector susceptible to ex ante regulation in accordance with Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communications networks and services (Recommendation on Relevant Markets), OJ L 295, 11.10.2014, p. 79.

### 3 Integration of digital technology

3 Integration of digital technology	Poland		EU
	rank	score	score
<b>DESI 2021</b>	<b>24</b>	<b>25.9</b>	<b>37.6</b>



	Poland			EU
	DESI 2019	DESI 2020	DESI 2021	DESI 2021
<b>3a1 SMEs with at least a basic level of digital intensity</b> % SMEs	NA	NA	52%	60%
			2020	2020
<b>3b1 Electronic information sharing</b> % enterprises	26%	29%	29%	36%
	2017	2019	2019	2019
<b>3b2 Social media</b> % enterprises	10%	14%	14%	23%
	2017	2019	2019	2019
<b>3b3 Big data</b> % enterprises	8%	8%	8%	14%
	2018	2018	2020	2020
<b>3b4 Cloud</b> % enterprises	7%	7%	15%	26%
	2018	2018	2020	2020
<b>3b5 AI</b> % enterprises	NA	NA	18%	25%
			2020	2020
<b>3b6 ICT for environmental sustainability</b> % enterprises having medium/high intensity of green action through ICT	NA	NA	60%	66%
			2021	2021
<b>3b7 e-Invoices</b> % enterprises	16%	16%	13%	32%
	2018	2018	2020	2020
<b>3c1 SMEs selling online</b> % SMEs	12%	13%	13%	17%
	2018	2019	2020	2020
<b>3c2 e-Commerce turnover</b> % SME turnover	NA	NA	NA	12%
	2018	2019	2020	2020
<b>3c3 Selling online cross-border</b> % SMEs	4%	5%	5%	8%
	2017	2019	2019	2019

Poland ranks 24th among EU countries on the Integration of digital technology in businesses' activities. 52% of Polish SMEs have at least a basic level of digital intensity, which is below the EU average of 60%. As for ICT for environmental sustainability, Poland achieved a figure 60% of enterprises with medium/high intensity of green action through ICT, a value below the EU average of 66%. Polish enterprises slowly continued to take advantage of the opportunities offered by digital technologies engaging in online commerce, with 13% of SMEs selling online and 5% selling across borders to other EU countries. Advanced technologies are slowly gaining popularity among Polish enterprises, with 15% of them using cloud solutions and 18% integrating AI technology into their operations. Nevertheless, only 14% of Polish enterprises actively use social media, while 29% engage in electronic information sharing. e-Invoices and Big Data are not yet widely popular.

Poland invests in digital technologies through EU-coordinated programmes and is a member of the EuroHPC Joint Undertaking on high-performance computing. It participates in PRACE (Partnership for

Advanced Computing in Europe) and the PIONIER-LAB National Platform for Integration of Research Infrastructures, and is an active member of the European Blockchain Partnership Policy Group.

In December 2020, the Council of Ministers adopted the Polish national AI strategy, entitled *Policy for the development of artificial intelligence in Poland from 2020*<sup>8</sup>. It discusses AI developments in six areas: society, education, science, business, public affairs and international relations. The strategy defines the values to be observed and goals to be achieved through government action in various contexts. The overarching goal is to protect human dignity while supporting fair competition in the international relations as the use of AI is essential for the competitiveness of economies.

Cooperation between the public and the private sector on authentication continues, with some banks providing their customers with authentication services through the 'Trusted Profile' (*Profil Zaufany*), which makes it possible to log in to all online public services and securely sign official documents.

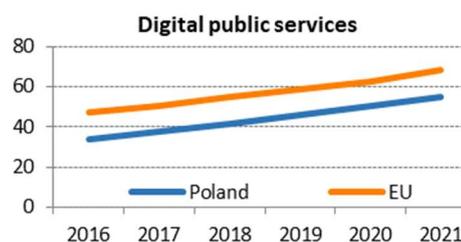
To continue boosting the digital transformation of the Polish economy, it is important to further develop governmental cloud services. Another area for further investment might be the introduction of electronic structured invoices to allow for the issuing, receiving and storing of structured invoices and to analyse and control data. Finally, Poland can speed up its digital transformation by giving further support to SMEs in their efforts to raise their uptake of advanced technologies and by encouraging start-up ecosystems, businesses in disadvantaged regions, and female digital entrepreneurs.

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<sup>8</sup> <https://monitorpolski.gov.pl/M2021000002301.pdf>

## 4 Digital public services

4 Digital public services	Poland		EU
	rank	score	score
<b>DESI 2021</b>	<b>22</b>	<b>55.1</b>	<b>68.1</b>



	Poland			EU
	DESI 2019	DESI 2020	DESI 2021	DESI 2021
<b>4a1 e-Government users</b> % internet users	45%	49%	49%	64%
<b>4a2 Pre-filled forms</b> Score (0 to 100)	NA	NA	65	63
<b>4a3 Digital public services for citizens</b> Score (0 to 100)	NA	NA	65	75
<b>4a4 Digital public services for businesses</b> Score (0 to 100)	NA	NA	67	84
<b>4a5 Open data</b> % maximum score	NA	NA	90%	78%

Poland ranks 22th in Digital public services. 49% of internet users relied on e-government services, compared to 64% in the EU. On pre-filled forms, Poland scores slightly above the EU average (65 compared to 63). On the availability of digital online services, Poland is still below the EU average, 65 on digital public services for citizens (EU average: 75) and 67 for businesses (EU average: 84). Poland scores well on open data (90% compared to 78% for the EU).

The lockdown of the economy that followed the COVID-19 crisis turned out to be a boom for the use of e-government services. The main authentication service 'Trusted Profile' (*Profil Zaufany*) gained greatly in popularity. In 2020, over 4 millions profiles were set up, doubling the number of active profiles in comparison to 2019. A video-verification function was launched as one of the identity confirmation methods enabling to setup the temporary trusted profile. A user of the e-government services can use the Trusted Profile to perform online administrative tasks like registering a place of residence or sending a request for a maternity allowance. Its popularity is therefore an important proxy of the popularity of all e-government services<sup>9</sup>.

The open data policy pursued by the Polish government is bearing fruit: there are more data available for re-use and an increasing number of companies are harnessing their potential. *Otwarte Dane*<sup>10</sup>, the national one-stop-shop portal for open data, gained significantly in popularity and received international recognition<sup>11</sup> in 2020. In the 'Open Data Maturity 2020' ranking, which puts countries

<sup>9</sup> An example of growing popularity of services is the number of marital status certificates issued, up from 53,000 in 2019 to 198,000 in 2020. Another popular service was parents' notification of the birth of children; the number of such notifications tripled from 45,000 in 2019 to 147,000 in 2020.

<sup>10</sup> <https://dane.gov.pl/>.

<sup>11</sup> [https://data.europa.eu/sites/default/files/country-factsheet\\_poland\\_2020.pdf](https://data.europa.eu/sites/default/files/country-factsheet_poland_2020.pdf).

into one of four categories depending on their maturity in this field, Poland advanced from the third category (fast trackers) to the highest fourth category (trend setters). One of the best illustrations of the use of open data by the citizens was the *CzyNaCzas* application, which shows public transport buses and trams on the map in real time. During the health pandemic, another portal, *SwiatPrzychodni*, was widely used to search for public healthcare facilities with the shortest queues to doctors<sup>12</sup>. Building on these successes, the government is continuing to implement its 'Open Data Programme' prompting public bodies to increase the number of datasets available and making the administration use the standards that allow for the opening of data. In 2020, the specifications on national open data standards were updated after an evaluation and public consultation<sup>13</sup>, and the relevant institutions are putting them in use in everyday practice.

In the area of public healthcare, the immediate action in response to the pandemic was the extension of the e-health projects funded from the EU structural policy funds, and introduction of e-registration and basic telemedicine services to allow remote consultation and access to basic healthcare services. In addition, the government's Patient's Portal<sup>14</sup> successfully introduced drug prescriptions in electronic form into the internet patient account (*Internetowe Konto Pacjenta*) that can be accessed on the *mObywatel* application (see box below). The patient account made it possible to get rid of the paper prescriptions in favour of electronic ones. This is a significant step ahead as for many years this solution met obstacles from doctors and patients alike. On one side, doctors were reluctant to submit to external control of their prescription-issuing practices, and on the other, patients were keen to have personal control of their prescription. During the pandemic, these hindrances were overcome out of sheer necessity. Certain features of the portal (e.g. storing health histories or handling appointments) are not yet popular among users, but several improvements are planned to increase uptake. The Ministry of Digital Affairs has also implemented the sanitary inspection record system (*System Ewidencji Państwowej Inspekcji Sanitarnej*, SEPIS), which aims to automate and centralise the handling of quarantine and infection notifications.

The national Computer Security Incident Response Team recorded an increase in cyber-attacks and incidents – 2020 saw a 60% increase on 2019. In view of this growing threat to digital security, the challenge for Poland is to increase the resilience of public administration information systems and to improve public and private institutions' capacity to prevent and respond to incidents. In response to this challenge, the 2019-2024 Cybersecurity Strategy was actively implemented. The strategy includes both legislative and organisational changes, such as setting up operational cybersecurity centres at various levels – regional, sectoral and industrial.

In summary, e-services for the public and businesses that are more user-friendly and easier to access could lead the way to even more improvements in digital public administration. Additional measures to promote the use of e-government services among businesses and the public could further boost the take-up of these e-services.

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<sup>12</sup> <https://dane.gov.pl/pl/application/application-1250,swiatprzychodnipl>.

<sup>13</sup> <https://dane.gov.pl/pl/article/article-1264,standardy-otwartosci-danych-po-konsultacjach-publicznych>.

<sup>14</sup> <https://pacjent.gov.pl/>.

### Highlight 2020-2021: mDriver's licence in m-Citizen application

In 2017, the Ministry of Digital Affairs launched the *m-Obywatel* (m-Citizen) mobile application. The idea behind the project was to create an application that would act as a digital wallet to store documents that citizens used frequently in their everyday life, such as a driver's licence.

Freeing up drivers from the requirement to carry a physical driver's licence with them at all times has been in demand for a long time. For the issue to be resolved, changes to the law had to be implemented, connecting relevant registers and providing mobile access systems and devices to the police. In 2020, the road traffic law was enacted and an option was introduced to have a digital driving licence in the *m-Citizen* application.

This added one more feature to the app, which already contained a few important features for the public. One is *mTożsamość* (m-Identity), which contains ID card data and can be used instead of an identification document when checking transport tickets, collecting a registered mail at the post office or performing other similar activities. Another is *mPojazd* (m-Vehicle), which contains all the necessary vehicle information, from the registration certificate and insurance to the vehicle ID. An additional feature is the *e-Recepta* (e-prescription) which allows people to pick up necessary medication at the pharmacy using their smartphone and a specially generated QR code.

The use of the *mObywatel* application is voluntary. The need for non-physical contacts during the COVID-19 pandemic contributed to the increase in its popularity in 2020. In the wake of this widespread use, features were added in 2021 relating to COVID-19 (EU vaccination certificate, negative test, recovery from the disease).