



Brussels, 10.5.2017
SWD(2017) 160 final

PART 27/62

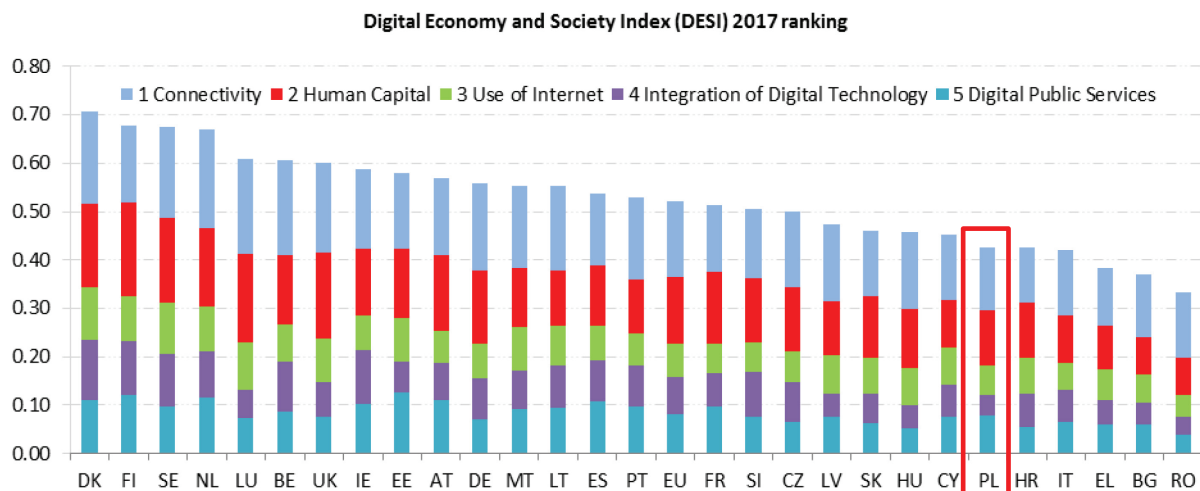
COMMISSION STAFF WORKING DOCUMENT

Europe's Digital Progress Report 2017

Europe's Digital Progress Report (EDPR) 2017 Country Profile Poland

Europe's Digital Progress Report (EDPR) tracks the progress made by Member States in terms of their digitisation, combining quantitative evidence from the Digital Economy and Society Index (DESI)¹ with qualitative information on country-specific policies. It is structured around five chapters:

| | |
|--|---|
| 1 Connectivity | Fixed broadband, mobile broadband, broadband speed and prices |
| 2 Human Capital | Internet use, basic and advanced digital skills |
| 3 Use of Internet | Citizens' use of content, communication and online transactions |
| 4 Integration of Digital Technology | Business digitisation and eCommerce |
| 5 Digital Public Services | eGovernment |



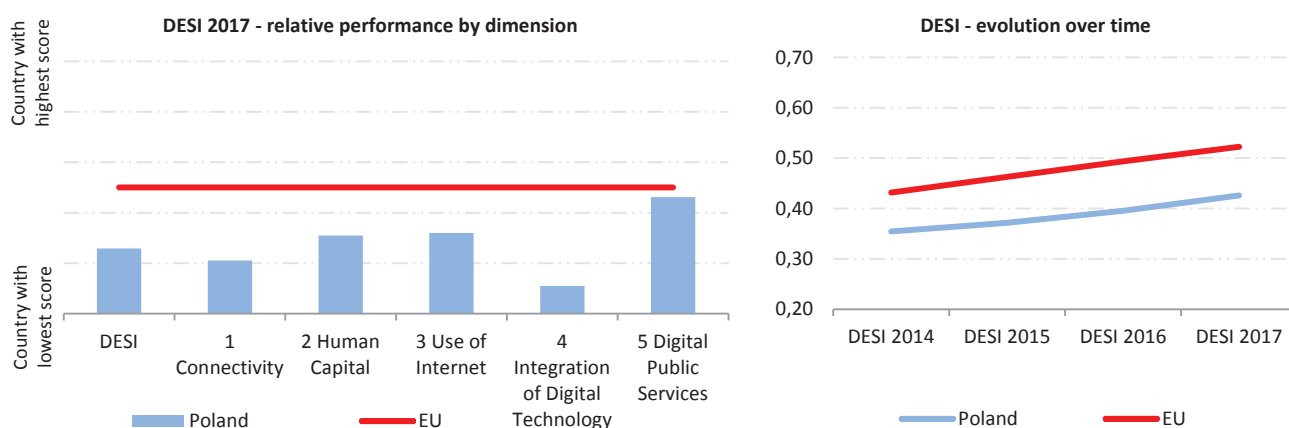
¹ <https://ec.europa.eu/digital-single-market/en/desi>

| | Poland | | Cluster | EU |
|------------------------|-----------|-------------|-------------|-------------|
| | rank | score | score | score |
| DESI 2017 | 23 | 0.43 | 0.41 | 0.52 |
| DESI 2016 ² | 24 | 0.40 | 0.38 | 0.49 |

In the Digital Economy and Society Index Poland ranks 23rd out of the 28 EU Member States. Poland's progress was very moderate compared with DESI 2016. Poland improved its performance within the dimensions of Connectivity, Human Capital and Use of Internet. Though Poland visibly advanced as regards the number of subscriptions to fast broadband and in spectrum assignment, it did not improve its rank in the Connectivity dimension. Low levels of fixed broadband coverage and take-up issues weighed down its overall connectivity performance. Poland's Digital Technology dimensions advanced a bit but its rank slipped down. The Digital Public Services dimension contracted.

Poland belongs to the low performing cluster of countries³.

Poland adopted the Digital Poland Operational Programme for 2014-2020. The aim of the programme is to strengthen digital foundations for national development: common access to high-speed Internet, effective and user-friendly public e-services and a continually rising level of digital competences. In February 2016 Poland introduced its Action Plan for Responsible Development addressing the development of enterprises, including their productivity and foreign expansion.



² The DESI 2016 was re-calculated for all countries to reflect slight changes in the choice of indicators and corrections to the underlying indicator data. As a result, country scores and rankings may have changed from the previous publication. For further information please consult the DESI methodological note at <https://ec.europa.eu/digital-single-market/en/desi>.

³ Low performing countries are Romania, Bulgaria, Greece, Italy, Croatia, Poland, Cyprus, Hungary and Slovakia. Medium performing countries are Latvia, Czech Republic, Slovenia, France, Portugal, Spain, Lithuania, Malta, Germany and Austria. High performing countries are Denmark, Finland, Sweden, the Netherlands, Belgium, the UK, Ireland, Luxembourg and Estonia.

1 Connectivity

| 1 Connectivity | Poland | | Cluster | EU |
|----------------|--------|-------|---------|-------|
| | rank | score | score | score |
| DESI 2017 | 25 | 0.52 | 0.53 | 0.63 |
| DESI 2016 | 25 | 0.46 | 0.46 | 0.59 |

| | DESI 2017 | | DESI 2016 | | DESI 2017 |
|---|--------------------------------------|------|------------------------------------|------|------------------------------------|
| | value | rank | value | rank | value |
| 1a1 Fixed Broadband Coverage % households | 86% → 2016 | 28 | 86% 2015 | 28 | 98% 2016 |
| 1a2 Fixed Broadband Take-up % households | 59% ↑ 2016 | 26 | 57% 2015 | 26 | 74% 2016 |
| 1b1 Mobile Broadband Take-up Subscriptions per 100 people | 115 ↑ June 2016 | 6 | 94 June 2015 | 5 | 84 June 2016 |
| 1b2 4G coverage⁴ % households (average of operators) | 91% 2016 | 14 | NA | | 84% 2016 |
| 1b3 Spectrum⁵ % of the target | 91% ↑ 2016 | 2 | 82% 2015 | 7 | 68% 2016 |
| 1c1 NGA Coverage % households | 64% ↑ 2016 | 25 | 61% 2015 | 24 | 76% 2016 |
| 1c2 Subscriptions to Fast Broadband % subscriptions >= 30Mbps | 43% ↑ June 2016 | 15 | 30% June 2015 | 18 | 37% June 2016 |
| 1d1 Fixed Broadband Price⁶ % income | 1.2% ↓ price 2016. income 2015 | 16 | 1.0% price 2015. income 2015 | 9 | 1.2% price 2016. income 2015 |

In the Connectivity Dimension, Poland remains in 25th place in the EU. Poland's overall performance is still being challenged by its low fixed broadband coverage, fixed broadband take-up and NGA coverage. While in the latter two indicators, Poland made only very moderate progress, Poland significantly improved in the number of subscriptions to fast broadband and in the use of mobile broadband. Though the assignment of Spectrum for mobile broadband use increased, the process is being disputed. Worth mentioning is that the number of households with a broadband connection remains low; with 76% of connected households, Poland ranks 21st in the EU. Therefore the negative effects of low fixed broadband coverage are not being offset by high mobile broadband take-up. Fixed broadband prices have moderately increased compared with last year and price was reported as a reason for having no internet access at home by 6.5% of households.

⁴ This is a new DESI indicator measuring the average coverage of telecom operators' 4G networks.

⁵ There is a decrease in most of the Member States due to the additional EU harmonisation of the 700 MHz band in April 2016.

⁶ Due to a slight methodological change, historical data was re-calculated.

Poland has no single National Broadband Plan (NBP). EU funds are made available via the Operational Programme Digital Poland 2014 – 2020 (*Program Operacyjny Polska Cyfrowa 2014 – 2020*). Connectivity is the main objective of the First Axis of the Programme. Poland is working on improving fixed broadband coverage, investing both in the network range as well as in network speed and capacity. Project Centre Digital Poland (*Centrum Projektów Polska Cyfrowa*) launched two consecutive open competitions aimed at selecting the most efficient fixed broadband network projects. While the first competition ensured that more than 282 000 households would be connected to fixed broadband with a minimum of 30Mb/s, the second competition set the minimum threshold at 1 036 000 households to be connected. The total funding of the competitions is 3,6 billion Zloty. Furthermore within the Project of Poland-wide Education Network (*Ogólnopolska Siec Edukacyjna*) all Polish schools will be connected to fast broadband (min 100 Mb/s) by the end of 2018. Poland fully adopted the Broadband Cost Reduction Directive as of as of 1 January 2017.⁷ In 2016 Poland allocated its 800 MHz spectrum. However several operators expressed their concerns about the allocation process and the final result of the auction. The Commission is closely investigating the matter. The letter of formal notice was sent on the 30th of September 2016 to which Poland replied in November 2016.

The rapidly improving pace of the mobile broadband indicators, in contrast to the lagging fixed broadband ones, highlights Poland's asymmetric progress within the Connectivity Dimension. In the context of fixed broadband coverage one should recall that geographical conditions, including large areas with low density of population, means that network roll-out costs are relatively high. Many rural areas are not attractive to operators. Lack of access to NGA networks affects, in particular, villages with less than 100 inhabitants. Furthermore there is low demand for high speed networks (over 100 Mbit/s) in these areas. However if Poland continues its current efforts towards fixed broadband network development, including incentives for operators to invest in lagging areas, Poland should start catching up with the other EU countries.

⁷ Fact-finding mission to Poland, January 2017; "Ustawa z dnia 9 czerwca 2016 r., o zmianie ustawy o wspieraniu rozwoju usług i sieci telekomunikacyjnych (Dz. U. z 2015 r. poz. 880, 1045, 1777 i 2281)"

2 Human Capital

| 2 Human Capital | Poland | | Cluster | EU |
|-----------------|--------|-------|---------|-------|
| | rank | score | score | score |
| DESI 2017 | 21 | 0.45 | 0.40 | 0.55 |
| DESI 2016 | 23 | 0.41 | 0.38 | 0.53 |

| | Poland | | | | EU |
|--|--------------|---------|--------------|------|--------------|
| | DESI 2017 | | DESI 2016 | | DESI 2017 |
| | value | rank | value | rank | value |
| 2a1 Internet Users % individuals | 70% 2016 | ↑ 23 | 65% 2015 | 24 | 79% 2016 |
| 2a2 At Least Basic Digital Skills % individuals | 44% 2016 | ↑ 23 | 40% 2015 | 26 | 56% 2016 |
| 2b1 ICT Specialists⁸ % employed individuals | 2.6% 2015 | → 19 | 2.6% 2014 | 20 | 3.5% 2015 |
| 2b2 STEM Graduates Per 1000 individuals (aged 20-29) | 19 2014 | 10 | NA 2013 | | 19 2014 |

In the Human Capital dimension, Poland has made moderate progress. Numbers of Poles having at least basic digital skills and using internet has slightly increased compared with 2015. Though for total population breakdown, Poland ranks at the 23rd place in the EU, Poland's rank has improved for individuals aged 16-24, for which it is above the EU average. Poland's STEM (science, technology, engineering, mathematics) graduate level is relatively high. Although only 2,6% of Poles have written a computer programme, Poles are considered to be among the best IT developers.⁹

Digital skills are covered by the Third Axis of the Operational Programme Digital Poland 2014 – 2020. The Program channels funds to education and information campaigns that promote benefits of digital technologies. Within the Poland-wide Education Network Project (*Ogólnopolska Sieć Edukacyjna*), all Polish schools will be connected to fast broadband with a minimum speed of 100 Mb/s by the end of 2018. Poland addressed the importance of programming skills and implemented compulsory coding for all pupils starting in the first year of primary education; entering into force as of 1 September 2017. Furthermore Poland has a growing number of university majors (*kierunki zamawiane*) that are introduced upon special request and support of businesses to fill the gap in the supply of ICT specialists.

Connection of schools to fast broadband internet as well as compulsory coding should have a positive effect on both the internet use and the digital skills. Poles in the 16 – 24 age group are already above the EU average in the use of internet and basic digital skills. There is

⁸ Historical data have been revised by Eurostat

⁹ According to Hacker-Rank Polish programmers rank at the third place in the world right after programmers from China and Russia. <http://blog.hackerrank.com/which-country-would-win-in-the-programming-olympics/>

however space for improvement in the higher age groups, in the working population particularly.

Highlight 2017¹⁰: Broad Alliance on Digital Skills in Poland („Szerokie Porozumienie na rzecz Umiejętności Cyfrowych w Polsce”)

The Broad Alliance on Digital Skills in Poland aims at creating a common understanding and acknowledgment that increased efforts are required in order to achieve an advanced use of digital technologies. It also accents the need to prepare graduates for a radically different marketplace, where digital technologies are becoming more and more present. The alliance brings together both public institutions and private sector to jointly act towards common goal of digital literacy. The alliance has been already supported by 61 institutions and businesses, including some of the major industry players in the field of digitization (among others Google, Microsoft, Intel, Orange and Cisco).

Among the recent initiatives supported by the Broad Alliance on Digital Skills is the SuperCoders programme that covers 35 schools where coding and robotics classes were provided to 800 pupils by Orange Foundation.

¹⁰ Highlight 2016: "Paperless, cashless Poland" Poland's Digitalization and Development Ministries are working on the "Paperless, cashless Poland" project that covers the areas of e-Identity, e-Health, e-Courts, eTaxes, e-Invoices and cashless transactions. Its aim is to create a digital infrastructure that enables individuals to use services spreading from driving licence application to university payments

3 Use of Internet

| 3 Use of Internet | Poland | | Cluster | EU |
|-------------------|--------|-------|---------|-------|
| | rank | score | score | score |
| DESI 2017 | 24 | 0.40 | 0.39 | 0.48 |
| DESI 2016 | 26 | 0.37 | 0.37 | 0.45 |

| | Poland | | | | EU |
|---|---------------|------|-------------|------|-------------|
| | DESI 2017 | | DESI 2016 | | DESI 2017 |
| | value | rank | value | rank | value |
| 3a1 News % individuals who used Internet in the last 3 months | 79% ↑ 2016 | 12 | 69% 2015 | 20 | 70% 2016 |
| 3a2 Music, Videos and Games¹¹ % individuals who used Internet in the last 3 months | 68% 2016 | 26 | NA | | 78% 2016 |
| 3a3 Video on Demand¹² % individuals who used Internet in the last 3 months | 6% 2016 | 26 | NA | | 21% 2016 |
| 3b1 Video Calls % individuals who used Internet in the last 3 months | 38% ↓ 2016 | 22 | 41% 2015 | 17 | 39% 2016 |
| 3b2 Social Networks % individuals who used Internet in the last 3 months | 60% ↓ 2016 | 23 | 61% 2015 | 22 | 63% 2016 |
| 3c1 Banking % individuals who used Internet in the last 3 months | 53% ↑ 2016 | 19 | 46% 2015 | 22 | 59% 2016 |
| 3c2 Shopping % internet users (last year) | 56% ↑ 2016 | 16 | 53% 2015 | 17 | 66% 2016 |

Poles are still hesitant to go online; with 70% of regular internet users, Poland ranks 23th in the EU (EU average of 79%). 22% of individuals have never used Internet, which explains the overall low use of internet based services. Few Poles make video calls, download music, use video on demand services, do online courses (3.7%), look for a job or send job applications online (10%), upload self-created content (15%) or participate in online social networks. In contrast Poles are however very prompt to read news online. Furthermore a growing number of individuals use Internet for online banking and shopping.

¹¹ Break in series due to a change in the Eurostat survey.

¹² Break in series due to a change of data source. New source is Eurostat.

4 Integration of Digital Technology

| 4 Integration of Digital Technology | Poland | | Cluster | EU |
|-------------------------------------|--------|-------|---------|-------|
| | rank | score | score | score |
| DESI 2017 | 27 | 0.22 | 0.27 | 0.37 |
| DESI 2016 | 24 | 0.21 | 0.25 | 0.35 |

| | Poland | | | | EU |
|--|---------------|------|--------------|------|--------------|
| | DESI 2017 | | DESI 2016 | | DESI 2017 |
| | value | rank | value | rank | value |
| 4a1 Electronic Information Sharing % enterprises | 21% 2015 | 25 | 21% 2015 | 25 | 36% 2015 |
| 4a2 RFID % enterprises | 2.8% 2014 | 22 | 2.8% 2014 | 22 | 3.9% 2014 |
| 4a3 Social Media % enterprises | 9% ↑ 2016 | 27 | 8% 2015 | 27 | 20% 2016 |
| 4a4 eInvoices % enterprises | 13% ↓ 2016 | 19 | 14% 2015 | 12 | 18% 2016 |
| 4a5 Cloud % enterprises | 5% ↑ 2016 | 27 | 4% 2015 | 27 | 13% 2016 |
| 4b1 SMEs Selling Online % SMEs | 10% → 2016 | 23 | 10% 2015 | 22 | 17% 2016 |
| 4b2 eCommerce Turnover % SME turnover | 6.6% 2016 | 21 | NA 2015 | | 9.4% 2016 |
| 4b3 Selling Online Cross-border % SMEs | 3.8% 2015 | 25 | 3.8% 2015 | 25 | 7.5% 2015 |

The digitisation of Polish businesses is lagging behind and Poland's performance has worsened compared with the last year. Use of social media and cloud services (including at least one of the services: data hosting, accounting software, CRM software, computing power) remains at a very low level. Only one in ten Polish SMEs is selling online¹³, compared with the EU average of 17% of SMEs; and SME eCommerce turnover is only 6,6%. Furthermore only 3,8% of Polish SMEs sell online cross border. 67% of Polish enterprises have a website.¹⁴

Though Poland has no national Industry 4.0 strategy it is currently working on a digital economy strategy devoted to challenges of digital transformation. The strategy envisages launch of Polish Platform of Industry 4.0. in October 2017. In January 2013, the Council of Ministers adopted the "Strategy for Innovation and Efficiency of the Economy" (SIEG) that is one of the nine integrated strategies to implement the provisions of the medium-term National Development Strategy 2020. The main objective of SIEG is the creation of a highly

¹³ (sales via computer network and representing at least 1% of total turnover)

¹⁴ Considering the Polish business environment and a very strong dominance of micro enterprises it is important to further investigate the Integration of Digital Technology within the micro enterprises group. According to The Digitalization of the Polish Economy Report, that also includes micro enterprises, absolute majority of Polish enterprises have a website and 60% of them have their product catalogues online providing an option to buy or order products online.

competitive economy - innovative and effective - based on knowledge and cooperation. It anticipates support for the development of “Internet of Things” with emphasis on the energy sector. In February 2016 Poland adopted an Action Plan for Responsible Development of Poland¹⁵. The plan among others envisages stimulation of innovation expenditures, as well as the fostering of cooperation between science and business. The Polish Development Fund (Polski Fundusz Rozwojowy), with a goal of filling in the market gaps in areas where it is difficult to obtain private sector funding, was established in April 2016. In June 2016, Poland's Minister of Development announced the “Start in Poland” programme for the development and support of start-ups. Poland joined the OpenPeppol Association and launched a national e-invoicing project in order to support the implementation of Directive 2014/55/EU and started building the national services platform (PeF) supporting electronic invoicing for public procurement.

In Poland e-businesses represent around 4.1% of GDP by comparison, in the UK, Sweden and Denmark their share is between 6-8 per cent.¹⁶ There are some risks that Polish businesses are missing out on the commercial potential of digital technologies. In the long run Polish businesses should profit from the positive synergies of better connectivity and higher digital skills. The more individuals go online the stronger will be the incentive for business to expand their digital presence.¹⁷ Furthermore the long term evolution of individuals' digital life styles should also translate into more innovative practices and processes within businesses.

¹⁵ https://www.mr.gov.pl/media/14909/ResponsibleDevelopmentPlan_pressrelease.pdf

¹⁶ Time to speed up The digitalization of the Polish economy <http://thinktankcyfrowy.pl/docs/ttc.raport.en.pdf>

E-businesses are companies applying model of business management based on broadly defined ICT solutions, and therefore using such tools as Customer Relations Management (CRM), new technologies of exchanging information with other companies (B2B) or for the electronic invoicing of customers.

¹⁷ According to Deloitte's experts, the Internet has a multiplier effect a 10 per cent increase of Internet users translates into GDP growth of 0.9-1.5%

5 Digital Public Services

| 5 Digital Public Services | Poland | | Cluster | EU |
|---------------------------|--------|-------|---------|-------|
| | rank | score | score | score |
| DESI 2017 | 14 | 0.53 | 0.43 | 0.55 |
| DESI 2016 | 14 | 0.54 | 0.42 | 0.51 |

| | Poland | | | | EU |
|--|--|------|--|------|-----------|
| | DESI 2017 | | DESI 2016 | | DESI 2017 |
| | value | rank | value | rank | value |
| 5a1 eGovernment Users % internet users (last year) | 25% ↑ | 19 | 22% ↓ | 21 | 34% |
| | 2016 | | 2015 | | 2016 |
| 5a2 Pre-filled Forms Score (0 to 100) | 58 ↓ | 12 | 63 ↓ | 11 | 49 |
| | 2016 | | 2015 | | 2016 |
| 5a3 Online Service Completion Score (0 to 100) | 79 ↓ | 18 | 80 ↓ | 18 | 82 |
| | 2016 | | 2015 | | 2016 |
| 5a4 Open Data ¹⁸ % of maximum score | 56% ↓ | 16 | 57% ↓ | 8 | 59% |
| | 2016 | | 2015 | | 2016 |

In Digital Public Services, Poland ranks below the EU average and made slower progress in comparison with the EU as a whole. While more individuals are using pre-filled forms, the number of individuals submitting completed forms to public authorities (eGovernment Users) and the share of the steps in a Public Service life event that can be completed online (Online Service Completion) both remain low.

eGovernment is among the priorities of “Digital Poland” Program 2014-2020,¹⁹ which seeks to improve the quality and efficiency of public services through digitisation. The National Development Strategy 2020 promotes introduction of uniform rules for eGovernment in administration. Planned actions are envisaged to digitise public administration, to simplify administrative processes, to create structured digital knowledge resources, and to enable auditing of public information quality. A new Programme for the Integrated Digitisation of the Country *Program Zintegrowanej Informatyzacji Państwa* was adopted in 2016. With the arrival of the national Head of Computer Science (*Główny Informatyk Kraju*), Poland is taking steps towards the integration of its currently very fragmented public sector digital services. The newly launched online Citizen’s Platform (Obywatel.Gov.PI)²⁰ focuses on “life events” and provides category-oriented integration of information and available services.

¹⁸ Change of data source. The historical data have also been restated. The new source is the European Data Portal.

¹⁹https://mac.gov.pl/files/program_operacyjny_polska_cyfrowa_05122014.pdf
https://mac.gov.pl/files/program_operacyjny_polska_cyfrowa_05122014.pdf

²⁰ <https://obywatel.gov.pl/>

Poland's parliament has adopted the Directive on the Re-use of Public Sector Information and launched the Programme of Opening Public Data in 2016. Poles can consult public data on Public Data Portal *Dane Publiczne*.²¹ The Ministry of Digitisation is also working on the new law on Privacy Protection aiming at the implementation of the General Data Protection Regulation (EU) 2016/679.

Poland is still lagging behind with the introduction of an electronic ID. The new roadmap for electronic ID implementation was presented in October 2016. Moreover the use of electronic banking personal identification in application for "Family 500 plus" programme shows that online banking identification could also be applied to other public services.

Poland is on the right path for the improvement of its digital public services. Assuming these improvements continue, it is expected that number of users will increase as a result of easier access and the overall friendliness of the services. Active promotion and increased visibility of eGovernment applications would accelerate their adoption among citizens. There is a need in parallel for development of services directed at businesses.

²¹ <https://danepubliczne.gov.pl/>