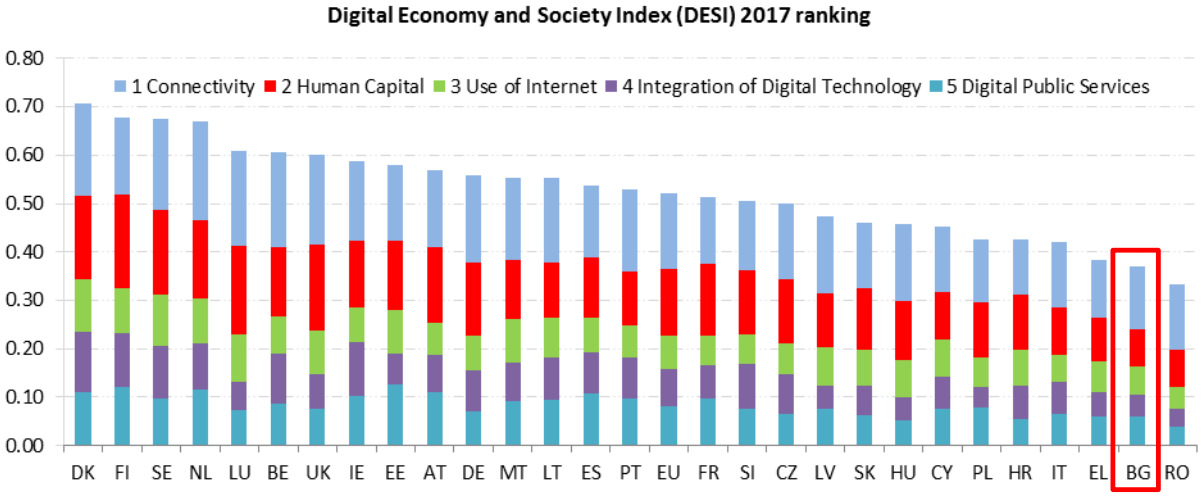
Europe's Digital Progress Report (EDPR) 2017 Country Profile Bulgaria

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



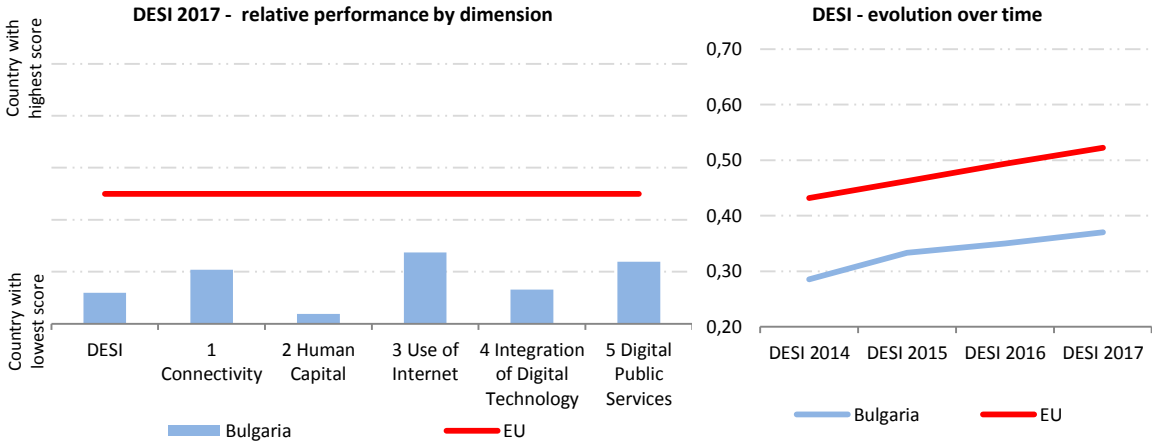
[1] https://ec.europa.eu/digital-single-market/en/desi

	Bulgaria		Cluster	EU
	rank	score	score	score
DESI 2017	**27**	**0,37**	**0,41**	**0,52**
DESI 2016[2]	27	0,35	0,38	0,49

Bulgaria ranks 27th in DESI 2017. Compared with last year, Bulgaria progressed in the enhancement of its broadband infrastructure and in open data developments. However, its low performance in digital skills, digitisation of businesses and of public services are acting as a brake on the further development of Bulgaria's digital economy and society.

Bulgaria belongs to the low performing cluster of countries[3].

Bulgaria has a broadband, eSkills and eGovernment strategy.



[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.

1 Connectivity

1 Connectivity	Bulgaria		Cluster	EU
	rank	score	score	score
DESI 2017	**26**	**0,52**	**0,53**	**0,63**
DESI 2016	23	0,48	0,46	0,59

	Bulgaria					EU
	DESI 2017			DESI 2016		DESI 2017
	value		rank	value	rank	value
1a1 Fixed Broadband Coverage % households	**95%** 2016	→	**23**	**95%** 2015	**22**	**98%** 2016
1a2 Fixed Broadband Take-up % households	**57%** 2016	↑	**27**	**55%** 2015	**27**	**74%** 2016
1b1 Mobile Broadband Take-up Subscriptions per 100 people	**82** June 2016	↑	**13**	**70** June 2015	**13**	**84** June 2016
1b2 4G coverage[4] % households (average of operators)	**66%** 2016		**26**	**NA**		**84%** 2016
1b3 Spectrum[5] % of the target	**37%** 2016	→	**27**	**37%** 2015	**26**	**68%** 2016
1c1 NGA Coverage % households	**74%** 2016	↑	**22**	**72%** 2015	**21**	**76%** 2016
1c2 Subscriptions to Fast Broadband % subscriptions >= 30Mbps	**55%** June 2016	↑	**11**	**49%** June 2015	**10**	**37%** June 2016
1d1 Fixed Broadband Price[6] % income	**1,7%** price 2016, income 2015	↓	**20**	**1,6%** price 2015, income 2015	**19**	**1,2%** price 2016, income 2015

A small increase in Bulgaria for most of the connectivity related indicators can be observed. However, this trend is minor and is maturing more slowly than in other EU countries, which drags Bulgaria's overall ranking on connectivity down from 23rd position in 2015 to 26th position in 2016. While the coverage of fixed broadband networks remains at 95% of households, slightly below the EU average (98%), the main challenge is to increase the number of broadband subscribers: only 57% of homes subscribe to fixed broadband (27th in the EU) limiting Bulgaria's ability to exploit the benefits of the digital economy. Networks capable of providing at least 30 Mbps (NGA) are available to more than two-thirds (74%) of Bulgarian homes, which is still below the EU average (76%). Bulgaria's strength is in terms of take-up of high-speed broadband, with more than half (55%) of fixed Internet subscriptions offering high-speed connections (11th in the EU), above the EU average. It is worth mentioning the significant growth of people subscribing to mobile broadband, now 82% compared with 70% in 2016, but still below the EU average of 84%. On 4G coverage

[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.

however[7] Bulgaria is lagging behind and ranks 26th with 66%, while EU average coverage is 84%. Furthermore, only 37% of the common European target (1200 MHz) on spectrum to be put into use on the market at EU level has been reached, compared with 68% EU wide[8]. This is partially due to the delays in making available some crucial spectrum below 1 GHz for electronic communication services, combined with the lack of commercial interest for some other frequency bands. Finally, the low take-up of fixed broadband might not be only justified by the subscription price, even thought that an individual seeking to subscribe to a fixed broadband connection must spend on average 1.7% of her gross income, which is higher than the EU average of 1.2%. Other reasons such as demographical, different social interest, consumers behaviour preferences for broadcasting products, or the relatively low levels of digital skills and ageing population in some remote areas might better explain the low take-up. .

The National Broadband Infrastructure Plan for Next Generation Access published in 2014 sets targets of 100% coverage with 30 Mbps by 2020, and 50% take-up rate for 100 Mbps. Furthermore, it aims at 80% take-up rate (100 Mbps) for businesses by 2020 and estimates the total investment to be €150 Million. Concrete measures for the effective execution of the plan and the use of funding allocated under the European Structural and Investment Funds have been set out in a dedicated roadmap. Due to ongoing internal adjustment discussions, the implementation of the wide broadband deployment project co-financed by the European Agricultural Fund for Rural Development (EAFRD) has not started yet, despite the timetable foreseen in the National Broadband plan and its roadmap.

Further spectrum release efforts might have considerable positive impact on the deployment of high-quality wireless broadband services in Bulgaria. Additional focus on deploying broadband in rural areas as well as developing digital skills and services would impact positively on the country's overall connectivity, in particular on NGA coverage and take-up. Bulgaria still has to transpose the Broadband Cost Reduction Directive, which should enhance and speed up broadband roll-out.

[7] This is a new indicator for 2017 measuring the coverage of homes for the average of operators.

[8] New frequency band was added in 2017, so the total EU harmonised band is larger.

2 Human Capital

2 Human Capital	Bulgaria		Cluster	EU
	rank	score	score	score
DESI 2017	**27**	**0,31**	**0,40**	**0,55**
DESI 2016	27	0,29	0,38	0,53

	Bulgaria				EU
	DESI 2017			DESI 2016	DESI 2017
	value		rank	value	rank	value
2a1 Internet Users	**58%**	↑	**27**	**55%**	**27**	**79%**
% individuals	2016			2015		2016
2a2 At Least Basic Digital Skills	**26%**	↓	**28**	**31%**	**27**	**56%**
% individuals	2016			2015		2016
2b1 ICT Specialists[9]	**2,3%**	↑	**22**	**1,9%**	**25**	**3,5%**
% of employed individuals	2015			2014		2015
2b2 STEM Graduates	**14**	→	**22**	**14**	**22**	**19**
Per 1000 individuals (aged 20-29)	2014			2013		2014

In Human capital, Bulgaria's performance is well below EU average; but Bulgaria made some progress compared with last year. More people are getting online; 58% of individuals regularly use the Internet, up from 55%; but only a quarter (26%) of its citizens possess even basic digital skills. On the positive side, the share of ICT specialists in the workforce is rising, which is a very good sign for the Bulgarian economy. However, the number of STEM (science, technology and mathematics) graduates remained the same (1.4% of graduates) posing some risks for Bulgaria's capacity to fulfil increased demand for ICT skilled specialists.

A number of IT companies[10], have set-up their own academies and provide extensive IT training to students; however, this form of alternative education is not recognised by the Government. The Digital National Alliance (DNA) leads many initiatives aiming at improving the digital skills of different groups – students, teachers, women, etc – free of charge. Currently the DNA is undertaking a joint project with the Ministry of Education and Science targeting teachers from primary schools, since they are key in spreading digital skills. A new law foresees additional time for teachers to develop new skills and the aim of the project is to integrate the use of technology much more into the learning process and make it more attractive.

Bulgaria could benefit from a digital skills strategy for equipping the workforce with the required digital skills and supporting existing private initiatives. The Ministry of Transport, Information Technology and Communications started the development of such strategy. It will contain measures, funded mainly by European Structural and Investment Funds. E-government related skills projects scheduled for 2018 are included in the Roadmap of the e-government Strategy

[9] Historical data have been revised by Eurostat.

[10] Including SoftUni, Telerik, SAP and VMware

3 Use of Internet

3 Use of Internet	Bulgaria		Cluster	EU
	rank	score	score	score
DESI 2017	**26**	**0,39**	**0,39**	**0,48**
DESI 2016	23	0,39	0,37	0,45

	Bulgaria				EU
	DESI 2017		DESI 2016		DESI 2017
	value	rank	value	rank	value
3a1 News % individuals who used Internet in the last 3 months	**68%** ↓ 2016	**21**	**70%** 2015	**18**	**70%** 2016
3a2 Music, Videos and Games[11] % individuals who used Internet in the last 3 months	**64%** 2016	**28**	**NA**		**78%** 2016
3a3 Video on Demand[12] % individuals who used Internet in the last 3 months	**8%** 2016	**23**	**NA**		**21%** 2016
3b1 Video Calls % individuals who used Internet in the last 3 months	**80%** ↓ 2016	**1**	**82%** 2015	**1**	**39%** 2016
3b2 Social Networks % individuals who used Internet in the last 3 months	**76%** ↑ 2016	**6**	**74%** 2015	**6**	**63%** 2016
3c1 Banking % individuals who used Internet in the last 3 months	**7%** ↓ 2016	**28**	**9%** 2015	**28**	**59%** 2016
3c2 Shopping % internet users (last year)	**27%** ↓ 2016	**27**	**31%** 2015	**27**	**66%** 2016

Bulgarians are intensive Internet users when it comes to making on-line video calls and using social networks. However, on average, they engage in online activities much less than other Europeans. Bulgarian Internet users engage the least in online transactions such as online banking (7%) and online shopping (27%) These figures have also decreased compared with last year.

[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	Bulgaria		Cluster	EU
	rank	score	score	score
DESI 2017	**26**	**0,22**	**0,27**	**0,37**
DESI 2016	23	0,22	0,25	0,35

	Bulgaria				EU
	DESI 2017		DESI 2016		DESI 2017
	value	rank	value	rank	value
4a1 Electronic Information Sharing % enterprises	**25%** 2015	**22**	**25%** 2015	**22**	**36%** 2015
4a2 RFID % enterprises	**9,2%** 2014	**1**	**9,2%** 2014	**1**	**3,9%** 2014
4a3 Social Media % enterprises	**9%** ↑ 2016	**26**	**8%** 2015	**26**	**20%** 2016
4a4 eInvoices % enterprises	**10%** ↑ 2016	**21**	**9%** 2015	**21**	**18%** 2016
4a5 Cloud % enterprises	**5%** ↑ 2016	**28**	**4%** 2015	**28**	**13%** 2016
4b1 SMEs Selling Online % SMEs	**5%** ↓ 2016	**28**	**6%** 2015	**28**	**17%** 2016
4b2 eCommerce Turnover % SME turnover	**1,7%** ↓ 2016	**28**	**3,1%** 2015	**26**	**9,4%** 2016
4b3 Selling Online Cross-border % SMEs	**2,8%** 2015	**27**	**2,8%** 2015	**27**	**7,5%** 2015

Bulgaria' performance is well below the EU average in the Integration of Digital Technologies by businesses. Bulgaria is an important user of RFID but is not managing to close the gap with the rest of the EU as regards business digitisation despite small improvements in the business use of social media, e-Invoices and cloud services. Particularly in e-Commerce, SMEs rarely sell online - only 5% of SMEs currently - and their turnover from online sales is low, only 1.7% of total turnover. This can be explained by the age gap: SME owners are often older than potential customers and lack the necessary skills to operate online.

A growing ecosystem of digital and tech entrepreneurs has emerged in the past years. In order to tap into the pool of highly qualified ICT specialists, many international companies have their IT offices in Bulgaria; but the overall economy is still not digitised. The Bulgarian Government has set up the Sofia Tech Park in an effort to encourage innovation but it only functions at half of its capacity.

The Ministry of Economy initiated the development of an Industry 4.0 Strategy.

5 Digital Public Services

5 Digital Public Services	Bulgaria		Cluster	EU
	rank	score	score	score
DESI 2017	**25**	**0,40**	**0,43**	**0,55**
DESI 2016	23	0,35	0,42	0,51

	Bulgaria				EU
	DESI 2017			DESI 2016	DESI 2017
	value		rank	value	rank	value
5a1 eGovernment Users	**10%**	↓	**27**	**15%**	**26**	**34%**
% internet users (last year)	2016			2015		2016
5a2 Pre-filled Forms	**19**	↓	**25**	**23**	**21**	**49**
Score (0 to 100)	2016			2015		2016
5a3 Online Service Completion	**71**	↑	**23**	**64**	**23**	**82**
Score (0 to 100)	2016			2015		2016
5a4 Open Data[13]	**76%**	↑	**7**	**56%**	**9**	**59%**
% of maximum score	2016			2015		2016

As a whole, Bulgaria's performance with respect to digital public services remains well below the EU average and the country slipped two positions – from 23rd in DESI 2016 to 25th in DESI 2017. One particular area showed strong progress though, Open Data, where Bulgaria comes in 7th place, i.e. rising two positions since last year.

On 5 April 2016, Bulgaria adopted a Roadmap for implementation of the Strategy for the Development of e-Government for the period 2016-2020. It outlines the measures and activities for the implementation of the strategic goals, as well as the institutions responsible and the financial resources required.

The Electronic Governance Act was amended in June 2016, introducing a key change: the establishment of a new State e-Government Agency (SEGA), the aim of which is to conduct e-governance policies. In terms of structure, SEGA integrates the "Electronic Governance" Directorate of the Ministry of Transport, Information Technology and Communications and the Executive Agency "Electronic Communication Networks and Information Systems". SEGA has only been operational since 1 December 2016 and recently (on 14 February 2017) launched its website –https://www.e-gov.bg

SEGA aims to centralise all processes related to e-Government. It is tasked with issuing and introducing control-related policies, rules, regulations and good practices in the field of electronic governance, strategic planning, budget planning and control, coordinating all sector-related policies and interdepartmental projects. The agency is also responsible for maintaining the central registers, the government cloud (G-cloud) and the communication network of the State Administration.

A new Electronic Identification Act was adopted in May 2016 and came into force on 21 November 2016. In addition, amendments to the law on national identification documents

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

were made. This is a key step towards the accelerated introduction of e-Government as it defines a unified scheme for electronic identification of citizens and businesses. It allows Bulgaria to start issuing electronic identification cards as of 1 January 2018.

These are some of the organisational and legislative changes that Bulgaria undertook in 2016 in an effort to overcome the obstacles that have prevented the country from making noticeable progress in the area of provisioning and usage public services. The country needs to capitalise on these efforts and work towards delivering concrete and visible results.

Highlight 2017[14]: Open Data

Significant progress has been made in the area of O*pen Data,* for which Bulgaria has become a trendsetter in Europe Top 10. The open data portal (https://opendata.government.bg/) is a central web-based public information system that allows publishing and management of reusable information in an open, machine-readable format. The platform is constructed in a manner that allows complete extraction of the published information or parts of it. Data are freely available and can be used for commercial or non-commercial purposes, as well as for applications development based on them.

There are currently over 1700 datasets from about 50 national and regional administrations and agencies, and the system supports a variety of formats. The records include data on public procurement, the education system, healthcare facilities, regional public transport facilities, transport data,control , lists of schools and kindergartens, information about air pollution, registers of employment agencies, public non-profit organizations, etc.

[14] Highlight 2016: Sofia Tech Park creates a unique environment for innovation Sofia Tech Park opened its doors at the end of last year. Sofia Tech Park is a state-owned company working to boost innovation, research and technological development through various projects for which it creates partnerships with private and public institutions. Eleven laboratories for information and communications technology (ICT), biotechnology and green energy are located on the territory of the park based on Tsarigradsko Shose Blvd, on the outskirts of Sofia. The Park aims to foster knowledge exchange between academia and business while supporting startups and innovative ideas, thus providing a catalyst for commercialisation of research and making Bulgarian science and entrepreneurship more competitive. The Sofia Tech Park also plans continuing hosting major ICT events in the Balkans.