

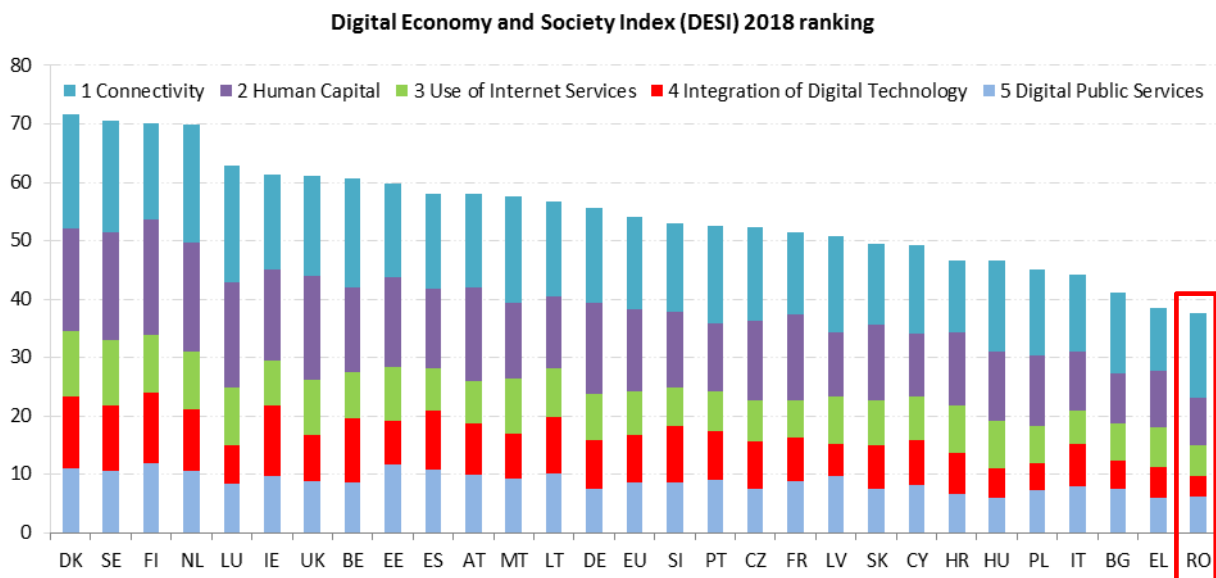
Digital Economy and Society Index (DESI)¹ 2018

Country Report Romania

The DESI report tracks the progress made by Member States in terms of their digitisation. It is structured around five chapters:

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

The DESI was re-calculated for the previous years 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>.



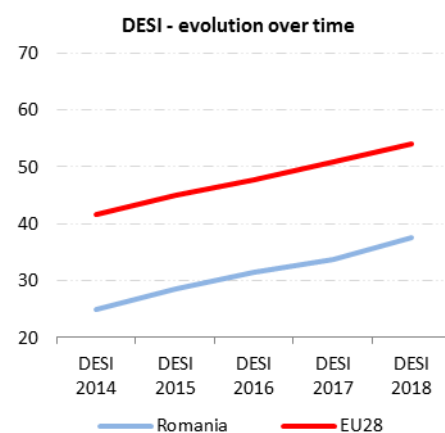
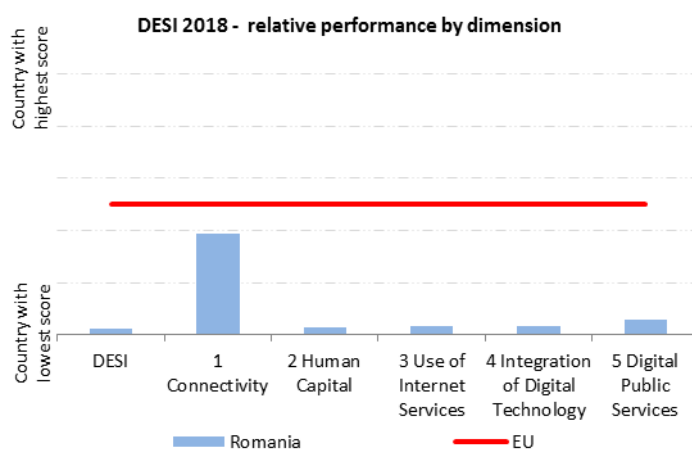
¹ <https://ec.europa.eu/digital-single-market/en/desi>

	Romania		Cluster	EU
	rank	score	score	score
DESI 2018	28	37,5	43,5	54,0
DESI 2017	28	33,7	40,4	50,8

Romania ranks last out of the EU-28 in the DESI 2018. While its ranking remained unchanged over 2017, its score increased thanks to an improved performance in four of the five DESI dimensions. However, overall progress last year was slow and Romania did not manage to catch up. Digitisation of the economy and digital skills in the population is low and hinders progress in most of the DESI dimensions. On the other hand, 44% of Romanian homes subscribe to ultrafast broadband (which is the 2nd highest in the EU). ICT contributes 6-7% to Romania's GDP and the digital sector is growing, with two major hubs in Bucharest and Cluj as well as significant ICT investments in other cities.

Romania belongs to the low-performing cluster of countries².

Romania adopted its National Strategy for the Romanian Digital Agenda 2020 in February 2015³. It is the Chief Information Officer that coordinates the development of digital policy in Romania. Progress in implementing digital policy has been limited over the last years.



² Low-performing countries are Romania, Greece, Bulgaria, Italy, Poland, Hungary, Croatia, Cyprus and Slovakia.

³ Strategia Națională privind Agenda Digitală pentru România https://www.comunicatii.gov.ro/?page_id=3496

1 Connectivity

1 Connectivity	Romania		Cluster	EU
	rank	score	score	score
DESI 2018	22	58,1	55,0	62,6
DESI 2017	26	49,5	50,1	58,5

	Romania				EU
	DESI 2018		DESI 2017		DESI 2018
	value	rank	value	rank	value
1a1 Fixed Broadband Coverage % households	88% 2017	↓ 27	89% 2016	26	97% 2017
1a2 Fixed Broadband Take-up % households	67% 2017	↑ 22	63% 2016	23	75% 2017
1b1 4G Coverage % households (average of operators)	72% 2017	↑ 27	45% 2016	28	91% 2017
1b2 Mobile Broadband Take-up Subscriptions per 100 people	82 2017	↑ 19	71 2016	22	90 2017
1c1 Fast Broadband (NGA) Coverage % households covered by VDSL, FTTP or Docsis 3.0	74% 2017	↑ 24	72% 2016	24	80% 2017
1c2 Fast broadband take-up % homes subscribing to >= 30Mbps	53% 2017	↑ 5	44% 2016	6	33% 2017
1d1 Ultrafast Broadband Coverage % households covered by FTTP or Docsis 3.0	73% 2017	15	NA		58% 2017
1d2 Ultrafast Broadband take-up % homes subscribing to >= 100Mbps	43,8% 2017	↑ 2	31,9% 2016	2	15,4% 2017
1e1 Broadband price index Score (0 to 100)	87 2017	↑ 12	85 2016	16	87 2017

In 2017, Romania continued to make progress in achieving the Digital Agenda for Europe objectives, for example in improving the connectivity index. However, Romania's fixed broadband coverage stagnated around 88% in the past year and still lags behind most Member States (ranked 27th in the EU). Broadband take-up reached 67% of households but was still below the EU average of 75%. Romania's urban-rural digital divide is best illustrated by the figures for next-generation access (NGA) coverage, where under 40% of rural areas are covered. Romania also lags behind on mobile 4G broadband coverage despite a leap from 45% in 2016 to 72% in 2017. The strong infrastructure-based competition in Romania, mainly in urban areas, is reflected in the indicators where Romania's performance is outstanding, namely the fast broadband take-up. A significantly higher ratio of homes (53%) are subscribing to fast broadband (>=30 Mbps) than the EU average of 33%. With almost three times as many subscriptions to ultra-fast broadband (43.8% of subscriptions to >100Mbps), Romania largely outperforms the EU average of 15.4%. This is due to the large share of fibre deployment in urban markets. In the fixed broadband market, an alternative operator has the biggest market share by relying on fibre access network infrastructure and has further increased its market share in 2017.

To address the urban-rural digital divide, under the 2014-2020 financial framework, the Romanian Operational Programme for Competitiveness (2014-2020) has earmarked EUR 100 million from the European Regional Development Fund (ERDF), while the 2014-2020

Rural Development Operational Programme has allocated EUR 25 million from the European Agricultural Fund for Rural Development (EAFRD). The RoNet project to support deployment of backhaul networks in “white areas” was granted ERDF financing of EUR 57 million in the previous financing period but could only absorb EUR 12.6 million by the end of the eligibility period (December 2015). Consequently, Romania re-allocated structural funds (EUR 44.95 million from the ERDF) to finalise the RoNet project in the current financing period, ensuring broadband backhaul infrastructure for 684 localities. At the end of 2017, the national authorities reported the reception of works in 212 localities while in 367 localities the works have been finalised and are ready for reception. For a significant part of the remaining white areas, a grant scheme of EUR 65 million (EUR 55.45 million from the ERDF) will provide support to private operators deploying last-mile access infrastructure. A public consultation was launched in September 2017 by the Ministry of communications and information society on the grant scheme. The state aid scheme is under preparation and the call should be launched in 2018.

While Romania lags behind on both fixed and 4G coverage, the Romanian legislative framework, and in particular the Infrastructure law, provides for the removal of bottlenecks in broadband network deployment, in particular the cumbersome authorisation and permitting process at local level. A better coordination between national ministries, National Authority for Management and Regulation in Communications (ANCOM) and local authorities is needed to deliver the secondary legislation ‘that was planned for 2017’, which would ensure a streamlined assistance to operators interested in investing in broadband.

2 Human Capital

2 Human Capital	Romania		Cluster	EU
	rank	score	score	score
DESI 2018	28	32,1	42,2	56,5
DESI 2017	28	30,9	40,6	54,6

	Romania				EU
	DESI 2018		DESI 2017		DESI 2018
	value	rank	value	rank	value
2a1 Internet Users % individuals	61% ↑ 2017	28	56% 2016	28	81% 2017
2a2 At Least Basic Digital Skills % individuals	29% ↑ 2017	28	28% 2016	27	57% 2017
2b1 ICT Specialists % total employment	2.0% ↑ 2016	27	1.9% 2015	27	3.7% 2016
2b2 STEM Graduates⁴ Per 1000 individuals (aged 20-29)	14.4 ↓ 2016	20	16.6 2014	16	19.1 2015

In human capital, Romania ranks well below the EU average in terms of internet users, but there is progress with more and more people getting online and gradually improving their digital skills. Only 61% Romanians are regular internet users compared to the EU average of 81%. When it comes to basic digital skills, Romania does not show significant improvement on last year, and the EU average is almost twice as high (57%). On ICT specialists, Romania shows little progress, with only 2% of employed people working in the field. That said, the increasing number of IT vacancies may trigger an increase in ICT specialists in the future. However, this could be affected by recent changes in the taxation of wages, which may affect the tax exemptions for ICT professionals. The number of Romanians aged 20-29 holding a science, technology, engineering and maths (STEM) degree has been reduced from 16.6 to 14.4, compared to 19.1 in the EU.

Private companies have introduced IT specialisation programmes, while the number of places at universities is limited. Several Romanian universities have started offering a limited number of online courses (MOOC)⁵. The number of STEM students has doubled in 2017, but the number of teachers has remained the same.

As of this year, coding and technology classes are introduced as of the 5th grade in school. This complements what is already introduced at high-school level. The required hardware will be available in all schools (especially in rural areas), while the software used will be open source or freeware in order to ensure low costs.

Following the same direction as last year's GovIThub⁶, the University of Bucharest aims to create an innovation hub for digital skills. This initiative, supported by the national digital coalition of Romania, the industry and academia, will increase the number of competent

⁴ The most recent data has been used in DESI 2018. It may refer to 2016 or 2015 depending on the Member State. This is reflected in the 2018 DESI ranking. Historical data has been updated by Eurostat.

⁵ <https://www.mooc-list.com/countries/romania>

⁶ <http://ithub.gov.ro/>

digitally skilled university graduates that are available to the business sector.

Progress in industry and academia requires increasing the number of ICT specialists and filling the gap between supply and demand for STEM graduates, by considering the needs of the industry. Overall, there continues to be a significant mismatch between market demand and what universities are supplying. Only about 20% of market needs are currently met. This is also caused by a significant lack of teachers at the STEM University. In addition, it is important that teachers continue to receiving training to ensure that they are kept up to date with fast moving developments in the field.

3 Use of Internet

3 Use of Internet	Romania		Cluster	EU
	rank	score	score	score
DESI 2018	28	35,0	41,0	50,5
DESI 2017	28	29,0	38,7	47,5

	Romania				EU
	DESI 2018		DESI 2017		DESI 2018
	Value	rank	value	rank	value
3a1 News % individuals who used Internet in the last 3 months	69% ↑ 2017	24	63% 2016	25	72% 2017
3a2 Music, Videos and Games % individuals who used Internet in the last 3 months	67% 2016	27	67% 2016	27	78% 2016
3a3 Video on Demand % individuals who used Internet in the last 3 months	6% 2016	27	6% 2016	27	21% 2016
3b1 Video Calls % individuals who used Internet in the last 3 months	53% ↑ 2017	13	45% 2016	15	46% 2017
3b2 Social Networks % individuals who used Internet in the last 3 months	82% ↑ 2017	4	74% 2016	8	65% 2017
3c1 Banking % individuals who used Internet in the last 3 months	11% ↑ 2017	27	8% 2016	27	61% 2017
3c2 Shopping % internet users (last year)	23% ↑ 2017	28	18% 2016	28	68% 2017

Although there is gradual progress year-on-year, Romania continues to rank last among the EU-28. Romanians read the news online (69%), listen to music, watch videos and play games (67%) and use the Internet for voice or video calls (53%). While Romanians are keen to engage in social networks and video calls, they are not so keen to use the Internet for online shopping (23% — ranked 28th) and eBanking (11% — ranked 27th) compared to the EU average.

The Romanian authorities have yet to present a policy on promoting e-commerce that includes shopping online. Initially, the policy was planned to be finalised in 2017, but the deadline was extended and it is now planned for 2018. Romanians are very reluctant to take up eBanking services, as there appears to be an overall lack of trust. Similarly to e-commerce, there is no clear public policy to stimulate the use of eBanking.

To increase public trust in shopping online and using eBanking services, it is important for the government to develop a strategy and promote the use of online services (e.g. via an awareness-raising campaign). Additional measures, such as encouraging banks to limit or not charge fees for eBanking and promoting eBanking in public institutions could encourage Romanians to use these services.

4 Integration of Digital Technology

4 Integration of Digital Technology	Romania		Cluster	EU
	rank	score	score	score
DESI 2018	28	17,8	29,2	40,1
DESI 2017	28	18,6	26,7	36,7

	Romania				EU
	DESI 2018		DESI 2017		DESI 2018
	value	rank	value	rank	value
4a1 Electronic Information Sharing % enterprises	17% 2017	↓ 27	22% 2015	24	34% 2017
4a2 RFID % enterprises	2,4% 2017	↓ 24	4,0% 2014	14	4,2% 2017
4a3 Social Media % enterprises	9% 2017	↑ 27	8% 2016	28	21% 2017
4a4 eInvoices % enterprises	10,9% 2017	↑ 24	8,7% 2016	24	NA 2017
4a5 Cloud % enterprises	6,0% 2017	↑ 26	5,2% 2016	26	NA 2017
4b1 SMEs Selling Online % SMEs	7,7% 2017	↑ 27	7,2% 2016	27	17,2% 2017
4b2 e-commerce Turnover % SME turnover	5,2% 2017	↑ 25	4,3% 2016	26	10,3% 2017
4b3 Selling Online Cross-border % SMEs	1,8% 2017	↓ 28	1,9% 2015	28	8,4% 2017

In the integration of digital technologies by businesses, Romania remains at the bottom of the ranking and is not progressing. Romania scores 17.8, recording a drop of 4% compared to last year, while the EU average increased by 9% compared to the DESI 2017. The percentage of businesses using technologies such as electronic information sharing (17% - ranked 27th) and RFID (2.4% - ranked 24th), have decreased. On RFID, the decrease was sharp, since Romania dropped 10 places, from 14th to 24th. Also, no significant progress has been registered in terms of SMEs selling online (7.7% - ranked 27th), use of Cloud services (6% - ranked 26th) and e-commerce turnover for SMEs (5.2% - ranked 25th), while a small decrease was observed in selling online cross-border (1.8%) where Romania ranks last, while the EU average is 8.4%.

In terms of policy, although in 2016 the Prime Minister launched the Manifesto for Digital Romania⁷, which sets out principles aligned with the vision for a digital future, Romania does not yet have a clear national strategy for digitising its industry.

In order to exploit digital opportunities, it is very important to have a clear strategy to digitise businesses covering the ICT and creative industries, communities of programmers, entrepreneurs as well as civil and professional associations.

⁷ <https://see40.org/2017forum/>

5 Digital Public Services

5 Digital Public Services	Romania		Cluster	EU
	rank	score	score	score
DESI 2018	26	41,4	48,0	57,5
DESI 2017	26	37,1	44,2	53,7

	Romania				EU
	DESI 2018		DESI 2017		DESI 2018
	value	rank	value	rank	value
5a1 eGovernment Users⁸ % internet users needing to submit forms	80% ↓	7	84%	4	58%
	2017		2016		2017
5a2 Pre-filled Forms Score (0 to 100)	12 →	28	12	27	53
	2017		2016		2017
5a3 Online Service Completion Score (0 to 100)	61 ↑	28	55	28	84
	2017		2016		2017
5a4 Digital Public Services for Businesses Score (0 to 100) - including domestic and cross-border	51 ↑	28	48	28	83
	2017		2016		2017
5a5 Open Data % of maximum score	79% ↑	10	63%	11	73%
	2017		2016		2017
5b1 eHealth Services % individuals	11%	21	NA		18%
	2017				

Romania's performance is well below the EU average in terms of digital public services, but has made progress compared to last year. Romania has advanced mainly on the supply side by increasing the number of services that can be completed online and by improving on automatically pre-filling forms for citizens. That said, Romania still ranks 28th on digital public services. Romania has also made progress in promoting an Open Data policy and ranks 10th on this indicator. eGovernment users stands at 80%, which is still higher than the EU average despite a slight decline compared to last year.

The national administration's IT system is fragmented, adding to the administrative burden for citizens and businesses. Additionally, the GovITHub project launched in 2016 by the previous government, which entailed a public-private partnership based on fellowships and voluntary work in order to develop public services, has been put on hold as the managing team resigned in early 2017. The Chief Information Officer explained that some of the projects that were started by GovITHub may be finalised at a later stage, but there are several issues that need to be solved, such as getting enough skilled people to further advance the projects. In the current competitive environment, the national administration has difficulties in attracting and retaining ICT specialists that can develop efficient digital public services. In order to address this issue, Romania is running two main projects that focus on simplification:

- A guide for the simplification of the national companies' registrar, provided as an eService. The goal is to make launching a start-up business easier, as this is the focal point in their interaction with the state.
- A guide for eGovernment, which aims to identify the links between business processes

⁸ The definition of this indicator has been changed. The new indicator measures eGovernment users as a percentage of those internet users needing to submit forms to the public administration.

and legislation, resulting in a mapping of existing procedures and relevant changes in the legislation.

In addition, a new centre for financial information will allow the government to communicate by electronic means with taxpayers, whether companies or citizens, and to receive tax declarations online. This will also include being able to submit and pay tax dues by Romanians working abroad. Discussions in this respect are ongoing with the tax authorities in Italy and Spain (the countries with the highest number of Romanians living abroad).

Establishing a consistent and long-term eGovernment strategy is very important for Romania. Further improvement and investment in online services is crucial.

Highlight 2018: Electronic Identification System (eID)

Romania is planning to introduce an electronic identification system (eID), an ambitious project, to provide chip-based ID cards. The Romanian Government is planning to use the eID as the legal tool for the interaction between citizens and companies with the government.

The envisaged system would, on a voluntary basis, include a certified electronic signature, as well as an interconnection with the national health card. In terms of timeline, the first large-scale deployment of the new ID cards is scheduled for 2019 (18 months from the adoption of the legislative act). The system will be financed from the national budget, with an allocated sum of around RON 2 million (around EUR 450 000) per year.

The establishment and use of an easy to use and highly secure eID system would significantly facilitate electronic interactions between citizens and SME's with the Romanian Government. Additionally, the system would considerably reduce administrative burdens, such as the current additional costs for relying on different electronic signature certifications schemes.