

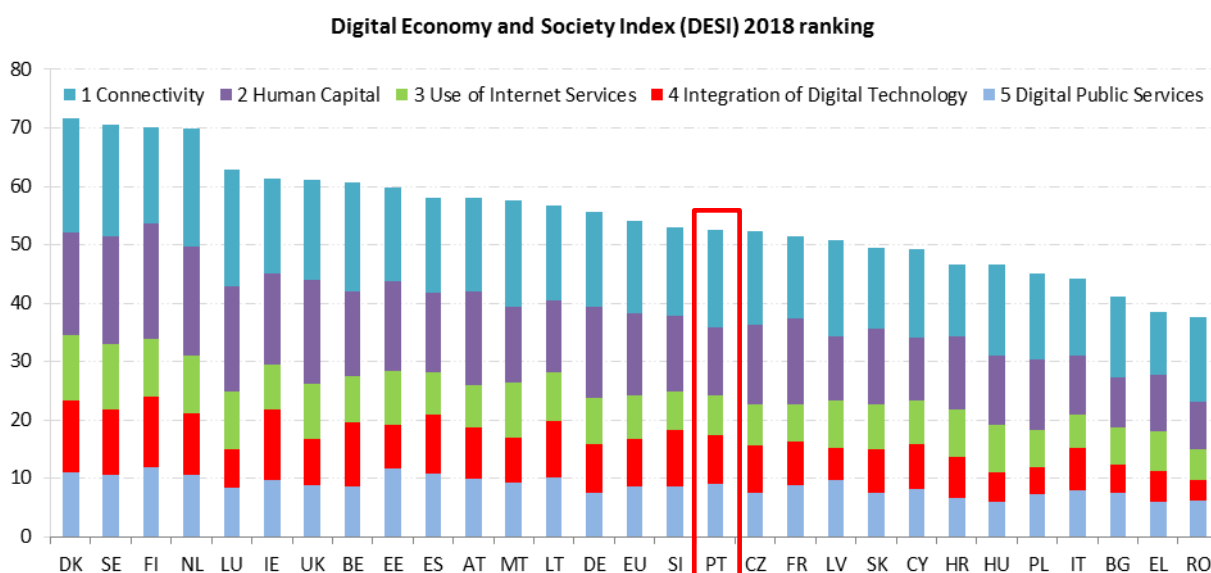
Digital Economy and Society Index (DESI)¹ 2018

Country Report Portugal

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>.



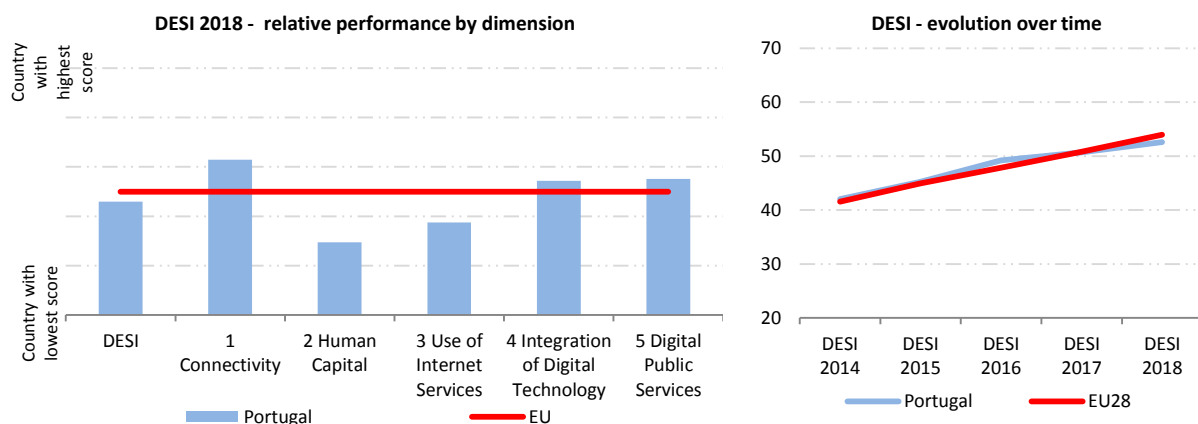
¹ <https://ec.europa.eu/digital-single-market/en/desi>

	Portugal		Cluster	EU
	rank	score	score	score
DESI 2018	16	52.6	54.7	54.0
DESI 2017	15	50.7	51.5	50.8

Portugal ranks 16th out of the 28 EU Member States. The country's overall score increased slightly, although in a smaller proportion than the EU average. Portugal's scores have gone up in all DESI dimensions except for integration of Digital Technologies. Noteworthy improvements relate to take-up of fixed and mobile broadband services as well as internet usage by citizens, although there is still room for further improvement in all of these areas. Although Portugal progressed faster than the EU average in all components of the Human Capital dimension, low digital skills levels, particularly among the elderly and those with low levels of education or on low incomes, continue to entail risks of digital exclusion and hinder progress in most of the other dimensions of DESI.

Portugal belongs to the medium-performing cluster of countries².

Over the course of 2017, Portugal launched and started to implement two comprehensive policy initiatives on digital competences and digitisation of the economy: *INCoDe.2030* and *Indústria 4.0* (see sections 2 and 4 for further details).



² Medium-performing countries are Spain, Austria, Malta, Lithuania, Germany, Slovenia, Portugal, Czech Republic, France and Latvia.

1 Connectivity

1 Connectivity	Portugal		Cluster	EU
	rank	score	score	score
DESI 2018	8	67.4	62.4	62.6
DESI 2017	9	63.8	58.8	58.5

	Portugal				EU
	DESI 2018 value	rank	DESI 2017 value	rank	DESI 2018 value
1a1 Fixed Broadband Coverage % households	99.5% → 2017	8	99.5% 2016	8	97% 2017
1a2 Fixed Broadband Take-up % households	72% ↑ 2017	16	68% 2016	19	75% 2017
1b1 4G Coverage % households (average of operators)	94% ↑ 2017	15	93% 2016	10	91% 2017
1b2 Mobile Broadband Take-up Subscriptions per 100 people	65 ↑ 2017	26	55 2016	25	90 2017
1c1 Fast Broadband (NGA) Coverage % households covered by VDSL, FTTP or Docsis 3.0	95% → 2017	4	95% 2016	4	80% 2017
1c2 Fast broadband take-up % homes subscribing to >= 30Mbps	51% ↑ 2017	9	43% 2016	7	33% 2017
1d1 Ultrafast Broadband Coverage % households covered by FTTP or Docsis 3.0	95% 2017	4	NA		58% 2017
1d2 Ultrafast Broadband take-up % homes subscribing to >= 100Mbps	35.4% ↑ 2017	4	25% 2016	6	15.4% 2017
1e1 Broadband price index Score (0 to 100)	66 ↓ 2017	26	69 2016	23	87 2017

Portugal further improved its overall connectivity ranking in DESI 2018, moving up to 8th place in the EU. Despite good coverage, it is handicapped by its performance on take-up and prices. In Portugal, broadband is available to all homes and ultrafast broadband networks are already available to 95 % of households, well above the EU average of 58 %. 4G coverage improved from 93 % to 94 %, 3 percentage points above the EU average (91 %). Broadband take-up, both fixed and mobile, improved in 2017 but still remains a challenge. Fixed broadband take-up increased by 4 percentage points (from 68 % in 2016 to 72 % in 2017), narrowing the gap with the EU average (75 %). While there was a substantial improvement in mobile broadband take-up (55 subscriptions per 100 people in 2016 compared to 65 subscriptions per 100 people in 2017), it still lags behind the EU average (90). While Portugal's performance in the broadband price index worsened during the reporting period, it should be noted that convergent bundling (i.e. including fixed and mobile internet and voice services) is the most representative method used by operators to sell electronic communications services in the country, which makes the assessment more complex³.

³ Convergent bundles including fixed broadband, fixed telephone service, Pay-TV, mobile telephone service and mobile broadband (known as 5 play), became the most popular bundle in the Portuguese market in Q3-2017.

Investment and competition between private operators have driven the expansion of ultrafast broadband coverage in Portugal. No public funding or European structural and investment funds are currently being used to support broadband roll-out. However, the Portuguese authorities continue to monitor projects in rural areas that benefitted from state aid in the past in order to ensure compliance with requirements of non-discriminatory wholesale access and no more subsidies than necessary. In October 2017, the Portuguese telecoms regulator ANACOM concluded that wholesale access tariffs charged by Fibroglobal in the Centre, Madeira and the Azores were substantially higher than those of DStelecom, which operates the subsidised rural broadband networks in the North, Alentejo and Algarve. As a result, ANACOM proposed to the Portuguese government a reduction (between 24 % and 55 % depending on the type of access) in the wholesale prices charged by Fibroglobal.

The extensive deployment of fibre-to-the-home (FTTH) puts Portugal in a good position to achieve the European broadband coverage objectives for 2020 and 2025. However, additional effort is required to reach the last 5 % of households without next generation access (NGA) coverage and to increase take-up.

2 Human Capital

2 Human Capital	Portugal		Cluster	EU
	rank	score	score	score
DESI 2018	22	45.8	58.6	56.5
DESI 2017	23	42.9	56.5	54.6

	Portugal				EU
	DESI 2018		DESI 2017		DESI 2018
	value	rank	value	rank	value
2a1 Internet Users % individuals	71% ↑ 2017	24	68% 2016	24	81% 2017
2a2 At Least Basic Digital Skills % individuals	50% ↑ 2017	20	48% 2016	21	57% 2017
2b1 ICT Specialists % overall employment	2.4% ↑ 2016	24	2.3% 2015	22	3.7% 2016
2b2 STEM Graduates⁴ Per 1000 individuals (aged 20-29)	18.6 ↑ 2015	12	17.8 2014	14	19.1 2015

Portugal made progress in all of the indicators in this dimension and moved up one place in DESI 2018. The share of Portuguese citizens who use the internet at least weekly increased by 3 percentage points (to 71 %) in 2017 compared to a year earlier, but it is still 10 percentage points below the EU average. The share of those who have never used the internet fell by almost 4 percentage points and now stands at 22 % compared with 13 % for the EU as a whole. Half of the Portuguese population does not have the basic digital skills required to function effectively online, and 30 % has no digital skills at all (mostly because they do not use the internet or do so only seldom). This compares with an EU average of 43 % and 17 % respectively. Furthermore, 18 % of the Portuguese active labour force (employed and unemployed individuals) has no digital skills, compared with an EU average of about 10 %. Certain population groups such as the elderly (particularly in rural areas) or those on low incomes or with low education levels face serious digital exclusion risks in Portugal. This is shown by the fact that only 31 % of people belonging to at least one of these groups⁵ had basic digital skills in 2017 (9 percentage points below the EU average).

Portugal is one of the EU Member States with the lowest share of professionals with specialised ICT skills in total employment: in 2016, it reached 2.4 % compared to an EU average of 3.7 %. However, the share of enterprises employing ICT specialists is slightly above the EU average, at nearly 20 %. It is also worth noting that comparatively fewer companies reported hard-to-fill vacancies requiring ICT specialist skills in Portugal than in the EU as a whole (respectively, 31 % and 47.5 % of companies having recruited or tried to recruit personnel for jobs requiring ICT specialist skills⁶). The proportion of people aged 20 to

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 have been updated by Eurostat.

⁵ This figure refers to individuals with at least one of the 3 following characteristics: 55 to 74 years old; low education; unemployed or inactive or retired. Both low levels of education and unemployment are correlated with low income levels.

⁶ Figures exclude financial sector and companies with fewer than 10 employees.

29 years old with science, technology, engineering and mathematics (STEM) degrees in Portugal is roughly in line with the EU average of around 19 %.

In April 2017, Portugal launched INCoDe.2030⁷, its new national digital competences initiative. It aims to enhance digital literacy and promote employability and professional training as well as R&D (including participation in international networks) in all areas associated with the digital transformation. INCoDe.2030 also acts as Portugal's national coalition in the context of the Digital Skills and Jobs Coalition. Flagship projects covering the initiative's five main action lines (inclusion, education, qualification, specialisation, research) have been presented as part of the first implementation phase. These include, among others, the setting-up of internet access points, an interactive platform to gather and disseminate examples of promising measures to fight digital exclusion, and a range of training measures to promote 'digital citizenship' (*cidadania digital*) by using online public services as well as tools such as *Qualifica+*, which seeks to address skills deficits among social groups at high risk of social exclusion.

The Permanent Forum for Digital Competences has been designated as the governance body in charge of monitoring and evaluating INCoDe.2030 initiatives. It held its first annual conference on 6 December 2017⁸. Action to ensure that all citizens benefit from the digital transformation has also come from the Portuguese private sector and civil society, as illustrated by the launch of MUDA (*Movimento pela Utilização Digital Ativa*)⁹. It aims to help reduce the number of people who have never used the internet while promoting the acquisition of advanced digital competences.

Given the challenges that Portugal faces to enhance its citizens' digital skills, particularly among vulnerable groups, as well as the importance of digital skills for reaping the benefits of digitisation, it will be crucial to closely monitor how these initiatives help attain strategic policy goals in this respect.

⁷ www.incode.2030.pt

⁸ <http://www.incode2030.gov.pt/en/forum/conferencia2017>

⁹ <https://www.muda.pt/quem-somos/>

3 Use of Internet Services

3 Use of Internet	Portugal		Cluster	EU
	rank	score	score	score
DESI 2018	21	46.3	48.3	50.5
DESI 2017	19	43.9	45.0	47.5

	Portugal				EU
	DESI 2018		DESI 2017		DESI 2018
	Value	rank	value	rank	value
3a1 News % individuals who used Internet in the last 3 months	80% ↑ 2017	13	78% 2016	15	72% 2017
3a2 Music, Videos and Games % individuals who used Internet in the last 3 months	83% 2016	10	83% 2016	10	78% 2016
3a3 Video on Demand % individuals who used Internet in the last 3 months	9% 2016	22	9% 2016	22	21% 2016
3b1 Video Calls % individuals who used Internet in the last 3 months	44% ↑ 2017	21	39% 2016	21	46% 2017
3b2 Social Networks % individuals who used Internet in the last 3 months	76% ↑ 2017	8	74% 2016	9	65% 2017
3c1 Banking % individuals who used Internet in the last 3 months	42% ↑ 2017	24	41% 2016	24	61% 2017
3c2 Shopping % internet users (last year)	45% ↑ 2017	24	43% 2016	24	68% 2017

Despite registering improvements in nearly all of the indicators in this dimension, Portugal slipped to 21st place in the DESI 2018 ranking (it was 19th in the previous edition). It continues to be among the top 10 Member States by share of internet users using social networks and playing or downloading games, images, films or music. However, it lags behind on online shopping and online banking: only 45 % and 42 % respectively of internet users compared with EU average values of 68 % and 61 %. Although this situation can be partly explained by idiosyncratic factors, the country ranks 24th out of 28 Member States in both these activities.

4 Integration of Digital Technology

4 Integration of Digital Technology	Portugal		Cluster	EU
	rank	score	score	score
DESI 2018	11	41.9	42.1	40.1
DESI 2017	9	42.9	38.5	36.7

	Portugal				EU
	DESI 2018		DESI 2017		DESI 2018
	value	rank	value	rank	value
4a1 Electronic Information Sharing % enterprises	40% 2017	↓ 8	44% 2015	4	34% 2017
4a2 RFID % enterprises	5.6% 2017	↓ 10	8% 2014	2	4.2% 2017
4a3 Social Media % enterprises	16% 2017	↓ 19	17% 2016	17	21% 2017
4a4 eInvoices % enterprises	NA 2017		19% 2016	9	NA 2017
4a5 Cloud % enterprises	14.4% 2017	↑ 18	11.2% 2016	18	NA 2017
4b1 SMEs Selling Online % SMEs	17.3% 2017	↓ 12	18.1% 2016	10	17.2% 2017
4b2 E-commerce Turnover % SME turnover	13.1% 2017	↑ 6	12% 2016	7	10.3% 2017
4b3 Selling Online Cross-border % SMEs	8% 2017	↑ 16	7.9% 2015	16	8.4% 2017

Portugal's score in this dimension improved in 2017, albeit only to a limited extent (1 percentage point). As a result, it slipped from 9th to 11th place in the ranking. The country's scores worsened substantially in some of the indicators where it had outperformed the majority of its counterparts in the past, such as the proportion of companies using information sharing and radio frequency identification (RFID) technologies. Around 25 % of Portuguese companies can be considered to have high or very high levels of digital intensity as measured by the Commission's Digital Intensity Index, compared to an EU average of 21.5 %. Conversely, the share of e-commerce in corporate turnover (16 %) is almost 2 percentage points below the EU average, and the proportion of companies selling online seems to be flattening out. SMEs are significantly less active in both respects than their larger counterparts.

Portugal's national digital agenda includes a target to increase the number of companies using e-commerce by 55 % by 2020 (baseline 2011) as well as measures to increase SME participation in the digital economy. In January 2017, Portugal's Prime Minister presented the national strategy for the digitisation of the economy, *Indústria 4.0*. It encompasses 64 measures involving both public and private sector players and has a strong focus on human capital development. It is expected to mobilise EUR 4.5 billion, including EUR 2.26 billion from the European structural and investment funds over a 4-year period. Implementation has already begun, with five calls for applications closed as of the end of 2017 for measures to promote digitisation of SMEs by means of technology upgrades, productive innovation and training and re-skilling.

Promising initiatives have been recently adopted to enhance Portugal's competitiveness in the digital economy. For example, the Startup Visa Programme¹⁰, which was launched in November 2017¹¹ and involves the national network of incubators, seeks to support the development of the Portuguese start-up ecosystem by attracting start-up founders from abroad. The 'Suppliers Clubs' (Clubes de Fornecedores) initiative¹² aims to promote the integration and participation of Portuguese companies, especially SMEs, in international value chains through cooperation with leading (or 'nuclear') companies, thereby improving their access to markets, technologies and skills. The protocol to set up the support network for the creation of 'Suppliers Clubs' was agreed in February 2017 and includes EUR 1.4 billion worth of funding over a 6-year period. The first implementation phase resulted in Bosch being selected as a 'nuclear company'. The second phase, which is currently underway, involves the launch of calls dedicated to capacity building in companies that will be part of the Bosch supplier network.

¹⁰ <http://startupportugal.com/startup-visa>

¹¹ Regulation No 344/2017, 13 November 2017.

¹² <https://www.iapmei.pt/PRODUTOS-E-SERVICOS/Incentivos-Financiamento/Portugal-2020/Clube-de-Fornecedores.aspx>

5 Digital Public Services

5 Digital Public Services	Portugal		Cluster	EU
	rank	score	score	score
DESI 2018	12	59.6	58.5	57.5
DESI 2017	11	59.0	54.9	53.7

	Portugal				EU
	DESI 2018		DESI 2017		DESI 2018
	value	rank	value	rank	value
5a1 eGovernment Users¹³ % internet users needing to submit forms	56% ↓	16	58%	17	58%
	2017		2016		2017
5a2 Pre-filled Forms Score (0 to 100)	74 →	7	74	4	53
	2017		2016		2017
5a3 Online Service Completion Score (0 to 100)	96 →	2	96	4	84
	2017		2016		2017
5a4 Digital Public Services for Businesses Score (0 to 100) - including domestic and cross-border	88 →	12	88	12	83
	2017		2016		2017
5a5 Open Data % of maximum score	47% ↓	27	41%	25	73%
	2017		2016		2017
5b1 eHealth Services % individuals	14%	17	NA		18%
	2017				

In general, Portugal made limited progress in this dimension compared to a year earlier. To some extent, this may be explained by the relatively large share of the population with insufficient digital skills and who do not use the Internet or do so only seldom (see section 2 for further details).

The share of eGovernment users decreased by 2 percentage points between 2016 and 2017, whereas open data use increased by around 6 percentage points. The level of online service completion remained roughly the same (with Portugal one of the leaders in this respect), as did both the amount of data being pre-filled in public services' online forms and the country's score on digital public services for businesses.

About 14 % of the country's citizens used eHealth services in 2017, compared to an EU average of 18 %. Further efforts will therefore be required to ensure that broader segments of the population enjoy the benefits from digitisation in this area. Portugal recently launched a promising online-based initiative to promote health literacy, which could be instrumental in this regard (see Highlight 2018 below).

¹³ 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.

Highlight 2018: Health Literacy Library¹⁴

The Portuguese national health system is undergoing modernisation thanks to the *SNS+Proximidade* project¹⁵, which aims to place the citizen at the centre of the health system. One of the cornerstones of this process is health literacy promotion, under which the Health Literacy Library¹⁶ was created in June 2017. This online tool facilitates access to health information, thus promoting people's autonomy in this area.

The Health Literacy Library collects, analyses, selects and disseminates resources for good practice in health education, literacy and self-care. The available resources currently cover topics such as active living and health promotion and protection in different stages of life, without focusing on specific conditions. These topics will be gradually expanded and an intelligent network on health literacy will be developed. The Library also provides access to a personal health agenda, which is an online, personalised and confidential tool that includes relevant information on an individual's health. These instruments are pivotal in empowering citizens and promoting their participation in decisions about their healthcare.

¹⁴ Chapter 5 — Section 5.1 in Online HiT Portugal. Available at

<http://www.hspm.org/countries/portugal25062012/countrypage.aspx>

¹⁵ <http://sns24.gov.pt/home/informacao-de-saude-2/sns-proximidade/>

¹⁶ <http://biblioteca.sns.gov.pt>