

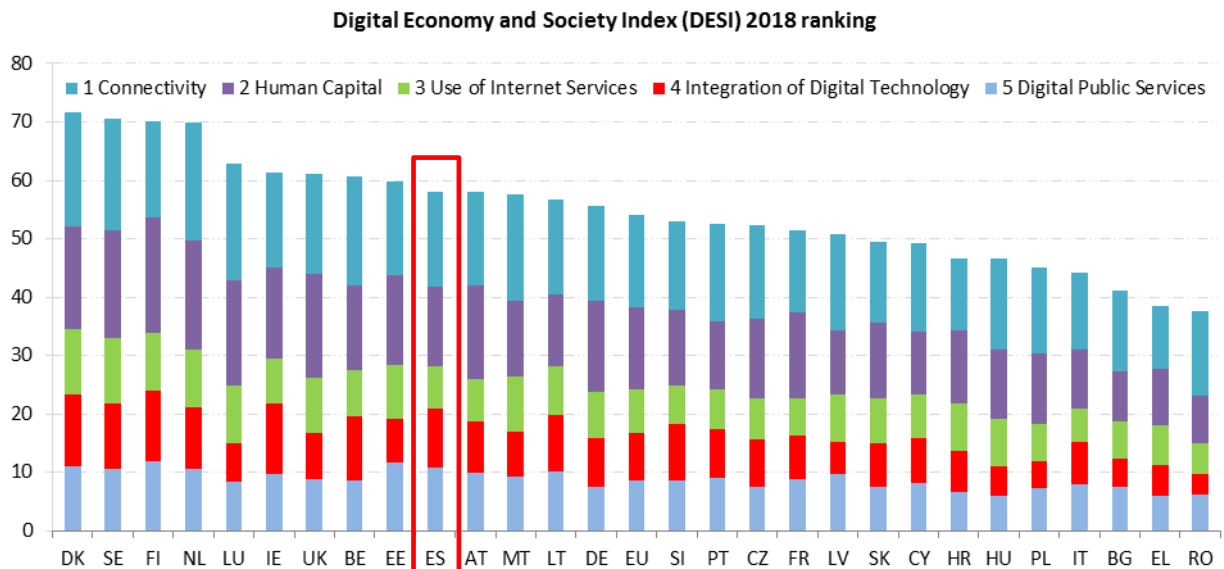
Digital Economy and Society Index (DESI)¹ 2018

Country Report Spain

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>.



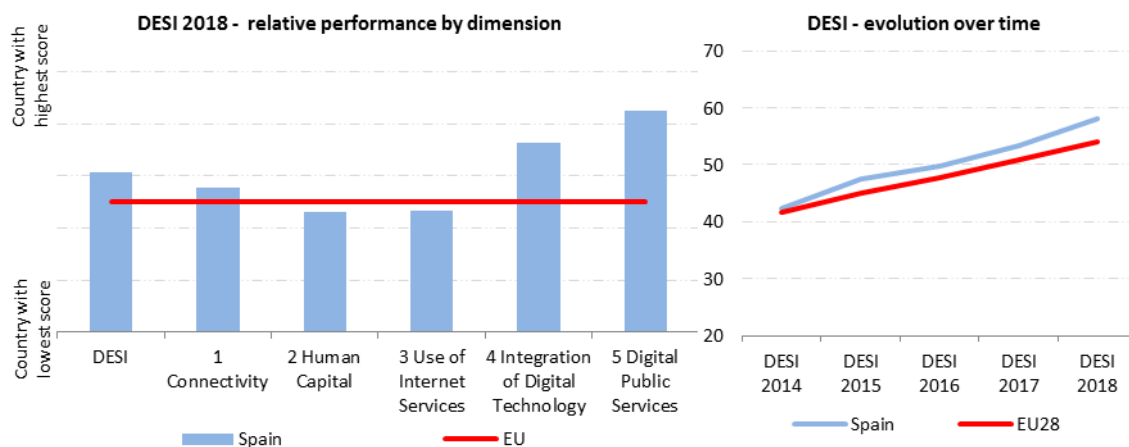
¹ <https://ec.europa.eu/digital-single-market/en/desi>

	Spain		Cluster	EU
	rank	score	score	score
DESI 2018	10	58.0	54.7	54.0
DESI 2017	12	53.3	51.5	50.8

Spain ranks 10th out of the 28 EU Member States in the European Commission Digital Economy and Society Index (DESI) 2018. Its score increased due to an improved performance in all of the DESI dimensions measured. Spain performs well in connectivity, thanks to the wide availability of fast and ultrafast fixed and mobile broadband networks and to the increasing take-up. Most Spaniards make good use of a variety of online services. Spain improved with regards to human capital, but still scores slightly below the average. In particular, one fifth of Spanish citizens are not yet online and close to half of them still do not have basic digital skills. Despite growing demand on the labour market, the supply of ICT specialists are still below the EU average. Spain made the most progress when it came to the use of digital technologies by businesses. More Spanish businesses use social media, eInvoices, cloud and e-commerce. Among all dimensions, Spain ranks highest in the eGovernment domain.

Spain belongs to the medium performance cluster of countries².

In 2017, the Spanish Ministry of Energy, Tourism and Digital Agenda launched a public consultation for the development of a new national strategy (provisionally called "Estrategia para una España inteligente")³, an updated version of their Digital Agenda with more ambitious targets and policy areas, in line with the Digital Single Market Strategy proposals and 2025 targets. For this purpose, the government has set up an high level group for the digital transformation of the Spanish economy where the main ministries are represented⁴. Giving priority to good connectivity and investing in human capital will help reap the full benefits of the digital transformation.



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

³ <http://www.minetad.gob.es/telecomunicaciones/es-ES/Participacion/Paginas/Cerradas/consulta-estrategia-digital.aspx>

⁴ <http://www.minetad.gob.es/es-es/gabineteprensa/notasprensa/2018/Paginas/transformaci%C3%B3n-digital20180216.aspx>

1 Connectivity

1 Connectivity	Spain		Cluster	EU
	rank	score	score	score
DESI 2018	14	64.7	62.4	62.6
DESI 2017	14	60.2	58.8	58.5

	Spain				EU
	DESI 2018		DESI 2017		DESI 2018
	value	rank	value	rank	value
1a1 Fixed Broadband Coverage % households	96% ↑	21	95%	21	97%
	2017		2016		2017
1a2 Fixed Broadband Take-up % households	73% ↑	15	71%	15	75%
	2017		2016		2017
1b1 4G Coverage % households (average of operators)	92% ↑	16	86%	21	91%
	2017		2016		2017
1b2 Mobile Broadband Take-up Subscriptions per 100 people	92 ↑	11	86	10	90
	2017		2016		2017
1c1 Fast Broadband (NGA) Coverage % households covered by VDSL, FTTP or Docsis 3.0	85% ↑	14	81%	15	80%
	2017		2016		2017
1c2 Fast Broadband Take-up % homes subscribing to >= 30Mbps	43% ↑	12	35%	14	33%
	2017		2016		2017
1d1 Ultrafast Broadband Coverage % households covered by FTTP or Docsis 3.0	84%	9	NA		58%
	2017				2017
1d2 Ultrafast Broadband Take-up % homes subscribing to >= 100Mbps	17.6% ↑	11	15.4%	9	15.4%
	2017		2016		2017
1e1 Broadband Price Index Score (0 to 100)	74 ↑	22	70	23	87
	2017		2016		2017

Spain performs particularly well when it comes to fixed NGA coverage. Currently, 85% of households have access to fast broadband networks capable of providing at least 30 Mbps, although with significant differences between regions and between urban and rural areas. The deployment of fibre networks (FTTP) continues to be an important feature of the Spanish digital society, covering 83.6 % of the population, only surpassed by Portugal in terms of total percentage of households covered. Mobile broadband and fixed broadband take-up ratios are one of the two main sources of improvement in the DESI, although fixed broadband take-up still remains below the EU average. 4G coverage has advanced significantly (from 86 % to 92 %), 1 p.p. above the EU average (91 %). The fixed broadband price index for Spain shows an improvement (from the 23rd to the 22nd position) but prices in Spain remain still more expensive than the EU average. The context is a converging market dominated by bundles and characterized by increasing internet access speeds (supported by the above-mentioned deployment of FTTP networks mentioned above) where price increases in the flagship-bundled products of the main operators are generally linked to different improvements. Mobile broadband prices for handset offers⁵ have substantially

⁵ Offers from February 2017 including 1 GB, 300 calls and 225 SMS.

decreased in the past year (from EUR 39 to EUR 21), and are even below the EU average (EUR 24).

The national 'Programme for the extension of next-generation broadband networks' (Programa de Extensión de la Banda Ancha de Nueva Generación, PEBA-NGA), continues to provide financial support for the roll-out of broadband networks in areas where high speed connectivity is neither available nor planned in the next 3 years. Since 2013, this programme has provided high-speed connectivity to 2.8 million households. In 2017 this support increased by 58 %, reaching 100 million Euros and focused on the roll-out of very high speed access networks providing at least 100 Mbps download speeds. Several regions are also implementing complementary support actions⁶.

In addition, in 2017 a new initiative was adopted supporting the subscription by users, including SMEs and municipalities, to connectivity offering at least 30 Mbps download speeds in rural areas. These include areas that had no connectivity offering at least 10 Mbps download speeds with a latency of less than 100 milliseconds was available.

A National Plan for 5G (2018-2020) was also published in December 2017. With this approval, Spain appears to be preparing the appropriate regulatory environment to enable 5G rollout in Spain. According to the National Plan roadmap, in 2018 the core L band, 1452-1492 MHz and the 3.6-3.8 GHz band are to be auctioned⁷. Other actions in the plan include several pilot projects calls⁸ and the 700MHz band roadmap definition. Particular attention will need to be paid to the definition of the national 700 MHz-band roadmap expected in the first half of 2018.

Building on widely deployed fibre networks and significant efforts in 4G coverage, Spain is well positioned to deliver further on the aim of ensuring that everyone in Spain benefits from a future-proof and innovative digital economy. However, within the context of ultrafast broadband technology, Spain should tackle the interrelated broadband pricing and take-up issues while closely monitoring the convergent bundling trend.

⁶ In 2018, the government announced an ambitious plan – "Plan 300x100"- to boost its support for the deployment of very high-speed broadband networks for the period 2018-2021. The aim is to reach 95% coverage of the population by extending 300 Mbit/s access to 100 % of the population centres (Plan 300x100). Population centres include a set of at least 10 buildings or more and, as an exception, less than 10 buildings as long as there are more than 50 inhabitants.

⁷ The process has already started with the public consultation for the proposal of the spectrum caps for the auction.

⁸ These were already approved in 2018.

2 Human Capital

2 Human Capital	Spain		Cluster	EU
	rank	score	score	score
DESI 2018	14	54.6	58.6	56.5
DESI 2017	16	50.2	56.5	54.6

	Spain				EU
	DESI 2018		DESI 2017		DESI 2018
	value	rank	value	rank	value
2a1 Internet Users % individuals	80% ↑ 2017	13	76% 2016	17	81% 2017
2a2 At Least Basic Digital Skills % individuals	55% ↑ 2017	17	53% 2016	15	57% 2017
2b1 ICT Specialists % total employment	3.0% ↑ 2016	18	2.4% 2015	21	3.7% 2016
2b2 STEM Graduates⁹ Per 1000 individuals (aged 20-29)	21.6 ↑ 2016	7	21.0 2014	7	19.1 2015

Spain ranks 14th among EU countries and below the EU average. Despite an increasing number of Spaniards going online, basic and advanced digital skills levels remain below the EU average. Only 55 % of individuals between 16 and 74 years have basic digital skills (57 % in the EU). Despite the increase in the percentage of ICT specialists from last year, they represent a lower proportion of the workforce compared to the EU (3 % compared to 3.7 % in the EU). When it comes to graduates holding a STEM (science, technology, engineering and mathematics) degree, Spain is performing well above the EU average with 21.6 graduates per 1000 individuals.

The public consultation for the development of the new national digital strategy ("*Estrategia para una España inteligente*")¹⁰, has five pillars. One pillar (Citizenship and Digital Employment - "*Ciudadanía y Empleo Digital*") has already identified the need to improve the digital skills, competences and ICT training of individuals in general and of people in the workforce. Additionally, Spain acknowledges that increasing the number of ICT specialists and promoting the role of the education system in the advancement of digital skills is a challenge that the country faces. Analysis of the public consultation has identified several key challenges, such as: digital inclusion, re-training of the workforce for a digital environment, digital skills training and digital entrepreneurship. Given their relevance, digital education and the digital transformation of employment might be specially considered in a joint "Citizenship, Education and Digital Employment" pillar in the new digital strategy.

In October 2017, the government adopted the latest Spanish Digital Competence Framework for Teachers to improve teaching skills in ICT. Based on that framework, a new Digital Competence Portfolio for Teachers has been designed to acknowledge and improve their

⁹ 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.

¹⁰ <http://www.minetad.gob.es/telecomunicaciones/es-ES/Participacion/Paginas/Cerradas/consulta-estrategia-digital.aspx>

digital competence through continuous self-assessment and the up-to-date recording of teaching, learning and training experiences.

The Spanish National Digital Jobs Coalition finally became operational in July 2017. This coalition is coordinated by ICT industry association AMETIC through the Spanish Information Technology Foundation.

A high degree of skills mismatches in companies' workforces limit their capacity to innovate and capitalise from innovation. Increasing the number of Spanish ICT specialists but also re-skilling the labour force is of the utmost importance to tap into the full potential of the Digital Economy.

Highlight 2018: Grant programme for young digital professionals ("*Profesionales Digitales*")

The Spanish government (through the public entity RED.ES) has launched a grant programme to promote the training and employment of young people in the Digital Economy called "*Profesionales digitales*" (Spanish Ministry of Energy, Tourism and Digital Agenda, 2017).

The programme offers training that meets the requirements of the digital industry and new business models (with a minimum of 150 hours of training), and makes it easier for young people to gain access to jobs in this sector. The grants are intended for training projects with a commitment to recruit young people who are enrolled in the National Youth Guarantee System. The commitment is to recruit at least 30 % of those who complete the training for employment for at least 6 months, in positions related to ICT and the digital economy.

At the end of 2017, EUR 19.75 million (about 98 % of the total budget) has already been allocated to a total of 77 projects in 15 autonomous regions (out of a total of 17) and 2 autonomous cities). It is co-financed by the European Social Fund (ESF), in the 2014-2020 programming period.

3 Use of Internet Services

3 Use of Internet Services	Spain		Cluster	EU
	rank	score	score	score
DESI 2018	18	49.4	48.3	50.5
DESI 2017	17	47.5	45.0	47.5

	Spain				EU
	DESI 2018		DESI 2017		DESI 2018
	value	rank	value	rank	value
3a1 News % individuals who used Internet in the last 3 months	77% 2017	↓ 17	78% 2016	16	72% 2017
3a2 Music, Videos and Games % individuals who used Internet in the last 3 months	83% 2016	11	83% 2016	11	78% 2016
3a3 Video on Demand % individuals who used Internet in the last 3 months	27% 2016	7	27% 2016	7	21% 2016
3b1 Video Calls % individuals who used Internet in the last 3 months	35% 2017	↑ 27	31% 2016	28	46% 2017
3b2 Social Networks % individuals who used Internet in the last 3 months	68% 2017	↑ 21	67% 2016	18	65% 2017
3c1 Banking % individuals who used Internet in the last 3 months	55% 2017	↑ 18	54% 2016	18	61% 2017
3c2 Shopping % individuals who used Internet in the last 12 months	59% 2017	↑ 16	54% 2016	18	68% 2017

Overall, the use of internet services in Spain is broadly comparable with the EU average. People in Spain are keen to engage in a variety of online activities in line with the rest of the EU, the most popular online activity being downloading/streaming music, videos and games with 83 % of individuals engaged. 77 % of Spanish internet users read news online (72 % in the EU). The Spanish used social networks (68 %), above the EU average, but the use of online banking and online shopping (55 % and 59 %, respectively) is below the EU average. Furthermore, the use of VoD (Video on Demand) is more widespread than in other EU countries. At the same time, the use of video calls is increasing with more than one third of internet users in Spain now using these services.

4 Integration of Digital Technology

4 Integration of Digital Technology	Spain		Cluster	EU
	rank	score	score	score
DESI 2018	7	49.8	42.1	40.1
DESI 2017	10	41.7	38.5	36.7

	Spain				EU
	DESI 2018 value	rank	DESI 2017 value	rank	DESI 2018 value
4a1 Electronic Information Sharing % enterprises	46% ↑	4	35%	15	34%
	2017		2015		2017
4a2 RFID % enterprises	7.8% ↑	2	6.5%	3	4.2%
	2017		2014		2017
4a3 Social Media % enterprises	28% ↑	7	24%	8	21%
	2017		2016		2017
4a4 eInvoices % enterprises	31.7% ↑	6	25.0%	6	NA
	2017		2016		2017
4a5 Cloud % enterprises	17.8% ↑	11	13.0%	12	NA
	2017		2016		2017
4b1 SMEs Selling Online % SMEs	19.6% ↑	9	18.7%	8	17.2%
	2017		2016		2017
4b2 E-commerce Turnover % SME turnover	10.1% ↑	13	9.4%	13	10.3%
	2017		2016		2017
4b3 Selling Online Cross-border % SMEs	7.1% ↑	20	5.9%	20	8.4%
	2017		2015		2017

On the Integration of Digital Technology by businesses, Spain ranks 7th, well above the EU average, and it succeeded in improving and advancing three ranks compared to last year. Spain made good progress on all indicators. Spanish enterprises are increasingly taking advantage of the possibilities offered by online commerce: 20 % of SMEs sell online (above the 17 % of the EU average), 7 % of total SMEs are selling cross-border and an average of 10 % of their turnover comes from the online segment. Furthermore, almost one third of SMEs use eInvoicing (one fourth in 2016). 28 % of enterprises use social media (up from 24 % in 2016) and 18 % use cloud services (13 % in 2016).

To boost innovation, Spain's Ministry of Economic Affairs is preparing a common plan and establishing a single point of contact for all start-up and industry 4.0. initiatives at national level (several strategies in different ministries, secretaries of State). The ICO (*instituto de credito oficial*) through FUND ICO global and CDTI (centre for the development of industrial technology) is supporting this by improving private equity and innovation.

The public entity RED.ES¹¹, presented its four-pronged Strategic Plan for 2017-2020¹². The part devoted to the digital ecosystem includes a national SME digital transformation plan to

¹¹ http://www.red.es/redes/es/quienes-somos/plan-estrat%C3%A9gico?qt-view_pagina_corporativa_block_3=4#qt-view_pagina_corporativa_block_3

¹² Namely Digital ecosystem, Digital government, Digital hub and Digital organisation.






digitise enterprises, especially SMEs. In that line, two programmes were recently launched: Digital transformation offices ("Oficinas de transformacion digital") and Digital advisers ("Asesores Digitales"). Both projects support the integration of digital technologies in SMEs for 2017-2020.

One of the five pillars in the public consultation for the new digital strategy is Ecosystems 4.0., where main barriers to digitisation of SMEs will be addressed. When proposing digitisation incentives, it is of the utmost importance to take into account the high concentration of small and medium-sized firms in the Spanish industrial structure, which mostly operate in traditional low-tech sectors.

To boost the digital transformation of the Spanish economy, it is important to raise awareness of the relevance of digitisation of SMEs and their needs. That way the full range of benefits from the adoption of digital technologies by SMEs can be captured.

5 Digital Public Services

5 Digital Public Services	Spain		Cluster	EU
	rank	score	score	score
DESI 2018	4	72.4	58.5	57.5
DESI 2017	4	68.5	54.9	53.7

	Spain				EU
	DESI 2018		DESI 2017		DESI 2018
	value	rank	value	rank	value
5a1 eGovernment Users¹³ % internet users needing to submit forms	67% 	11	66%	11	58%
	2017		2016		2017
5a2 Pre-filled Forms Score (0 to 100)	72 	9	67	10	53
	2017		2016		2017
5a3 Online Service Completion Score (0 to 100)	94 	6	89	11	84
	2017		2016		2017
5a4 Digital Public Services for Businesses Score (0 to 100) - including domestic and cross-border	95 	3	88	11	83
	2017		2016		2017
5a5 Open Data % of maximum score	94% 	2	91%	1	73%
	2017		2016		2017
5b1 eHealth Services % individuals	29%	5	NA		18%
	2017				

Digital Public Services is where Spain continues to perform best. It ranks 6th among EU countries, with a score better than last year's. Spain performs very well in Open Data and there is a high level of online interaction between public authorities and citizens. 67 % of Spanish online users actively engage with eGovernment services. In 2017, Spain performed better than the previous year for pre-filled forms (72 out of 100) and the completion of eGovernment information (94 out of 100). Furthermore, the availability of eGovernment services for business shows an uplifting result for Spain, scoring 95 out of 100, the third best performer in the EU. For eHealth services, it ranks fifth country in the EU, with 29 % of Spaniards having used health and care services provided online.

The ICT Strategic plan adopted for 2015-2020¹⁴ is already delivering digital-by-default results in central administration and public agencies. The next Digital Transformation Action Plan (DTAP) led by the Spain's Ministry of Finance and Public Administration (MINHAFP) constitutes a structural reform aimed at implementing the final phase of the development of eGovernment in the MINHAFP environment. The full implementation encompasses two key elements; (i) sectoral action plans for the digital transformation developed by each ministry¹⁵; (ii) a consolidated catalogue of eGovernment services to be provided by the Ministry of Finance and Public Administration to all national, regional and local authorities to implement at their respective level.

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.

¹⁴ *Plan de Transformación digital de la Administración General del Estado y sus Organismos Públicos.*

¹⁵ Two action plans are already available, including MINHAFP and the Ministry of Defence.

In order to achieve efficiencies, avoid duplicated expenses and reduce costs in the Administration, all the regions have signed an agreement with the General State Administration which enables them to use the eGovernment services of the State. Additionally, a regional liquidity fund is being planned, but the release of funds to regions will be made conditional on achieving specified targets for the uptake of eGovernment services¹⁶. The estimated savings¹⁷ incurred by using digital services from 2012 to June 2017 surpassed EUR 4 billion (of which 60 % for individuals and 40 % for the public administration).

Full implementation of the Digital Transformation plan, by all public actors involved - central, regional and local government entities - could lead the way to even more significant improvements in the area of digital public administration.

¹⁶ For example, all the administrative units must be included in the eInvoicing system, receive all their invoices electronically and all registers must be digital by June 2017.

¹⁷ Source: *Secretaría General de Administración Digital del Ministerio de Hacienda y Función Pública* (data as of 30.09.17).