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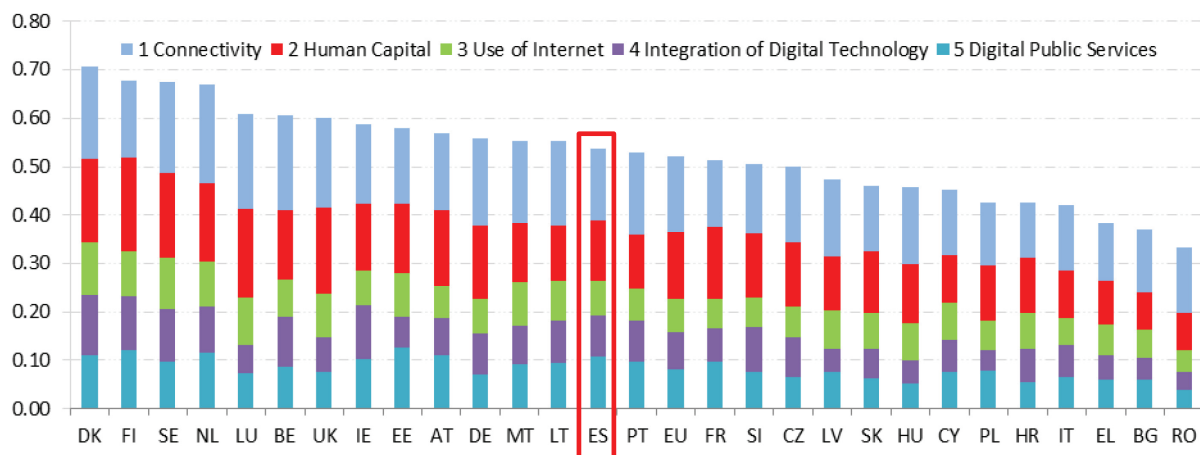
Europe's Digital Progress Report 2017

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

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

Digital Economy and Society Index (DESI) 2017 ranking



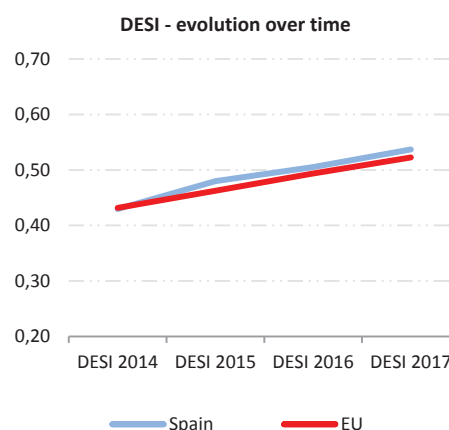
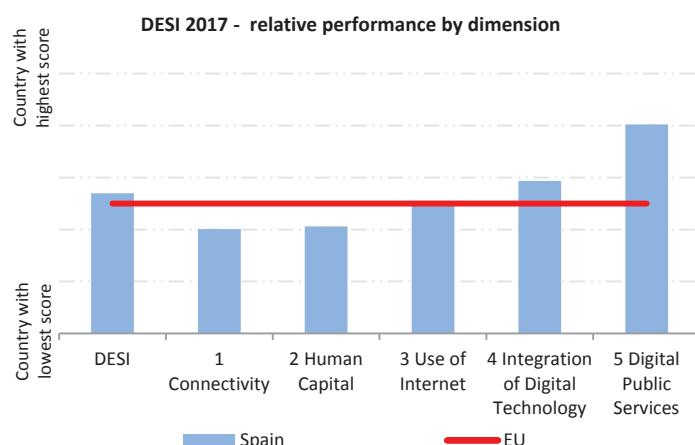
¹ <https://ec.europa.eu/digital-single-market/en/desi>

	Spain		Cluster	EU
	rank	score	score	score
DESI 2017	14	0.54	0.54	0.52
DESI 2016 ²	15	0.51	0.51	0.49

Spain ranks 14th out of the 28 EU Member States in the European Commission Digital Economy and Society Index (DESI) 2017³. Overall, Spain has improved its score on all of the dimensions measured with the exception of Human Capital, where it scored lower than last year, in spite of its solid growth in STEM graduates. Its performance is especially remarkable in Digital Public Services, although Spain made most progress in the Integration of Digital Technology dimension. Although Spanish public and private sectors are quickly progressing in the integration of digital technologies, in general, some indicators seem to point to a weak demand on the user side, with lower levels of growth on digital skills that hamper development in the Human Capital dimension.

Spain belongs to the medium performance cluster of countries⁴.

Last year was marked by election periods in Spain. Following the June 2016 elections, the new Government set up the Minister of Energy, Tourism and Digital Agenda in November⁵. An updated version of the Digital Agenda⁶ with even more ambitious targets is expected in the near future..



² The DESI 2017 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 DESI: <https://ec.europa.eu/digital-single-market/en/scoreboard/Spain>.

⁴ Medium performing countries are Latvia, Czech Republic, Slovenia, France, Portugal, Spain, Lithuania, Malta, Germany and Austria.

⁵ <http://www.minetad.gob.es/en-US/Paginas/index.aspx>

⁶ Digital Agenda for Spain: <http://www.agendadigital.gob.es/digital-agenda/Documents/digital-agenda-for-spain.pdf>

1 Connectivity

1 Connectivity	Spain		Cluster	EU
	rank	score	score	score
DESI 2017	18	0.59	0.63	0.63
DESI 2016	19	0.54	0.60	0.59

	Spain		EU	
	DESI 2017 value	rank	DESI 2016 value	DESI 2017 value
1a1 Fixed Broadband Coverage % households	95% →	21	95%	98%
	2016		2015	2016
1a2 Fixed Broadband Take-up % households	71% ↑	15	69%	74%
	2016		2015	2016
1b1 Mobile Broadband Take-up Subscriptions per 100 people	86 ↑	10	80	84
	June 2016		June 2015	June 2016
1b2 4G coverage⁷ % households (average of operators)	86%	20	NA	84%
	2016			2016
1b3 Spectrum⁸ % of the target	69% ↓	13	73%	68%
	2016		2015	2016
1c1 NGA Coverage % households	81% ↑	15	77%	76%
	2016		2015	2016
1c2 Subscriptions to Fast Broadband % subscriptions >= 30Mbps	49% ↑	14	29%	37%
	June 2016		June 2015	June 2016
1d1 Fixed Broadband Price⁹ % income	2.7% ↓	27	2.4%	1.2%
	price 2016, income 2015		price 2015, income 2015	price 2016, income 2015

Spain performs particularly well in terms of fixed NGA coverage. Currently, 81% 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. Growth in coverage is particularly strong in networks supporting access at 100 Mbps or more which are available to 79.1% of the population. The deployment of fibre networks (FTTP) continues to be an important present and future asset of the Spanish digital society, covering 62.8% of population. Yet this percentage drops to 9.7% in the much less populated rural areas. Mobile broadband and fixed broadband take-up ratios are the two main sources of improvement in the DESI, although fixed broadband take-up remains still below the EU average. This said, subscriptions to fast broadband have progressed significantly (from 29% to 49%), well above the EU average (37%). As far as fixed broadband subscriptions are concerned, 49% offer speeds of at least 30 Mbps and 22% are already providing 100 Mbps or more. Stand-alone prices for fixed broadband remain among the highest in Europe. While pricing of stand-alone prices even increased during the reporting period, it should be noted

⁷ This is a new DESI indicator measuring the average coverage of telecom operators' 4G networks.

⁸ There is a decrease in most of the Member States due to the additional EU harmonisation of the 700 MHz band in April 2016.

⁹ Due to a slight methodological change, historical data was re-calculated.

that bundling of broadband with mobile and pay TV services, a major trend in the Spanish market, makes assessment more complex. In terms of mobile services provided via spectrum, Spain ranks relatively low (20th) in terms of 4G coverage and spectrum harmonization (13th). Spain is the only country in the EU which gathers all spectrum related competences within the Ministry.

The connectivity objectives of the Digital Agenda for Spain (DAS) and its implementation Plan for telecommunications and high-speed networks are aligned with the objectives of the Digital Agenda for Europe but set initially only intermediate objectives for 2015. These objectives need to be updated in the context of the forthcoming review of the DAS and its plans and should take into account the needs for 2025 in line with the EU "Gigabit Society" Strategy. The differences in NGA deployment between regions and between urban and rural areas have been addressed through a number of measures, including the allocation of public aid for NGA extension, but should continue to be a priority for the coming years. The solid performance of Spain in the deployment of networks supporting access at 100 Mbps or more (NGA in Spain is already heavily supported by FTTH deployment currently covering 63 % of the population) should play an important role in the context of the more ambitious goals proposed by the European Commission for 2025.

Spain has transposed the Cost Reduction Directive.

Based on the relatively well deployed fibre networks, Spain would be well positioned to deliver further important policy innovations so that all Spanish citizens will benefit from the digital economy. Spain should tackle, within the context of ultrafast broadband technology; the interrelated broadband pricing and take-up issues, keeping an eye on the evolution of the convergent bundling trend; the issue of rural areas; and spectrum.

The full release of the socio-economic potential of fibre networks and 5G will depend on a strategy that addresses above-mentioned problems in the new technological context.

2 Human Capital

2 Human Capital	Spain		Cluster	EU
	rank	score	score	score
DESI 2017	16	0.50	0.57	0.55
DESI 2016	14	0.51	0.55	0.53

	Spain				EU
	DESI 2017		DESI 2016		DESI 2017
	value	rank	value	rank	value
2a1 Internet Users % individuals	76% 2016	↑ 17	75% 2015	15	79% 2016
2a2 At Least Basic Digital Skills % individuals	53% 2016	↓ 15	54% 2015	13	56% 2016
2b1 ICT Specialists¹⁰ % employed individuals	2.4% 2015	↓ 21	3.1% 2014	17	3.5% 2015
2b2 STEM Graduates Per 1000 individuals (aged 20-29)	21 2014	↑ 6	19 2013	10	19 2014

Spain ranks 16th 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 53% of individuals between 16 and 74 years old have basic digital skills (56% in the EU) and ICT specialists represent a lower share of the workforce (2.4% compared to 3.5% in the EU). Spain is performing well as regards graduates holding a STEM (Science, Technology and Mathematics) degree with 21 graduates per 1000 individuals.

As part of the measures to improve skill match and integration of university graduates to the productive sector, the Ministry of Education, Culture and Sports (MECD) in collaboration with the Social Security authority launched an Employability Map as a tool to match supply and demand. This "Employability and Employment of Spanish Graduates Map" crossed data registration with Social Security records¹¹. Additionally, a Survey of Labour Access of University Graduates (EILU) was published recently analysing the university and job transition process¹². Regarding teachers' digital competences, the Digital Skills and Competence Framework based on the Digital Culture plan have been launched¹³. Spain has also promoted the development of massive open online courses (MOOCs) and innovative teaching methods in higher education. Spain has put in place Erasmus+ to promote student-centred learning and soft skills¹⁴. The Spanish National Coalition for Digital Skills and Jobs is expected to finally become operational during the second quarter of 2017¹⁵.

¹⁰ Historical data have been revised by Eurostat.

¹¹ Inserción laboral de los egresados universitarios. La perspectiva de la afiliación a la Seguridad Social

¹² INE (December 2015) – Encuesta de Inserción de los titulados universitarios.

¹³ Established in cooperation with JRC in 2012 (<http://educalab.es/intef/digcomp/digcompteach>)

¹⁴ Inter alia, communication, leadership and active citizenship.

¹⁵ The Spanish National Coalition will be coordinated by ICT industry association AMETIC through the Information Technology Foundation.

Increasing the number of Spanish ICT specialists but also re-skilling the labour force is of the utmost importance to tap the full potential of the Digital Economy.

In order to match the offer of STEM professionals and the demand of specialists that reflects the strong growth of the adoption of digital technologies in Spanish public and private sector, by the end of 2016 the Ministry of Energy, Tourism and Digital Agenda has launched an aid program to promote training and employment of young people in the Digital Economy¹⁶. The program is endowed with 20 million euros and aims, on the one hand, to offer training to young people that meets the requirements of the digital industry and new business models, and on the other, facilitate their access to jobs related to these subjects

¹⁶ Ver <http://www.profesionalesdigitales.es/empleojoven/>

3 Use of Internet

3 Use of Internet	Spain		Cluster	EU
	rank	score	score	score
DESI 2017	17	0.47	0.45	0.48
DESI 2016	16	0.45	0.42	0.45

	Spain				EU
	DESI 2017		DESI 2016		DESI 2017
	value	rank	value	rank	value
3a1 News % individuals who used Internet in the last 3 months	78% 2016	↓ 15	79% 2015	13	70% 2016
3a2 Music, Videos and Games¹⁷ % individuals who used Internet in the last 3 months	83% 2016	11	NA		78% 2016
3a3 Video on Demand¹⁸ % individuals who used Internet in the last 3 months	27% 2016	7	NA		21% 2016
3b1 Video Calls % individuals who used Internet in the last 3 months	31% 2016	↑ 28	29% 2015	28	39% 2016
3b2 Social Networks % individuals who used Internet in the last 3 months	67% 2016	↑ 18	65% 2015	17	63% 2016
3c1 Banking % individuals who used Internet in the last 3 months	54% 2016	↑ 18	50% 2015	17	59% 2016
3c2 Shopping % internet users (last year)	54% 2016	↑ 18	53% 2015	16	66% 2016

Spanish citizens are keen to engage in a variety of online activities in line with the rest of European citizens. However, Spain made little progress and fell back from rank 16 to rank 17. 78% of Spanish Internet users read news online (70% in the EU) and listen to music, watch videos and play games online (83% compared with 78% at EU level). Spaniards are above the EU average when watching films (27% and 21% across the EU), but they made less use of Video Calls over the Internet than the rest of the EU (31% compared to 39%). The Spanish used social networks (67%), above the EU average, but the use of online banking and online shopping (54% for both indicators) is below EU average (59% and 66%, respectively).

¹⁷ Break in series due to a change in the Eurostat survey.

¹⁸ Break in series due to a change of data source. New source is Eurostat.

4 Integration of Digital Technology

4 Integration of Digital Technology	Spain		Cluster	EU
	rank	score	score	score
DESI 2017	11	0.42	0.40	0.37
DESI 2016	15	0.35	0.37	0.35

	Spain				EU
	DESI 2017		DESI 2016		DESI 2017
	value	rank	value	rank	value
4a1 Electronic Information Sharing	35%	15	35%	15	36%
% enterprises	2015		2015		2015
4a2 RFID	6.5%	3	6.5%	3	3.9%
% enterprises	2014		2014		2014
4a3 Social Media	24% ↑	8	21%	7	20%
% enterprises	2016		2015		2016
4a4 eInvoices	25% ↑	6	10%	19	18%
% enterprises	2016		2015		2016
4a5 Cloud	13% ↑	12	10%	15	13%
% enterprises	2016		2015		2016
4b1 SMEs Selling Online	19% ↑	9	16%	12	17%
% SMEs	2016		2015		2016
4b2 eCommerce Turnover	9.4% ↑	13	7.3%	20	9.4%
% SME turnover	2016		2015		2016
4b3 Selling Online Cross-border	5.9%	20	5.9%	20	7.5%
% SMEs	2015		2015		2015

Spain made good progress in the dimension Integration of Digital Technology by business over the last year. Spanish enterprises are increasingly taking advantage of the possibilities offered by online commerce: 19% of SMEs sell online (above the 17% of the EU average) and more and more SMEs are actively selling online (19% with a 9.4% of their turnover coming from the online segment). Furthermore, one quarter of SMEs use eInvoicing, well above EU average.

Spain has put in place Industry 4.0 initiatives, such as *Industria Conectada 4.0*, Basque Industry 4.0. At regional level, *Tecnalia* is the biggest research and technology organization which provides technology transfer and consulting services to all types of companies, whether active in traditional or technological domains.¹⁹ At national level, *Industria Conectada 4.0*²⁰ was announced in 2015 aiming to digitise and enhance the competitiveness of Spain's industrial sector. The initiative promoted digitisation among SMEs with a budget of € 97.8 Million focused on credit loans for projects aimed at (i) innovations in organisation and processes or (ii) industrial research. Additionally, € 68 Million (loans and direct aid) for ICT companies and €10 million for innovative clusters were allocated. The *Industria Conectada 4.0* initiative is driven by the General Secretariat of Industry and SME and the Secretary of

¹⁹ OECD Science, Technology and Innovation Outlook 2016.

²⁰ Industria conectada 4.0.- <http://www.industriaconectada40.gob.es/Paginas/Index.aspx>

State for Information Society and Digital Agenda. Apart from the main industrial players, experts belonging to tech companies, research and civil society are also involved in Industry 4.0. This strategy includes a self-assessment tool for industrial digital readiness for business to support SMEs. The Ministry has also put in place a programme to assess SMEs - up to 25 - with 50-hours of consultancy services in different areas of digitisation. Their target is to reach 100 SMEs with € 97.5 Million and a minimum investment of € 150 K. This should take into account the high concentration of small and medium-sized firms²¹ in the Spanish industrial structure, mostly operating in low-tech traditional sectors.²²

Regarding the business sector, internationalisation of innovative firms remains an area of concern. *Empresa Nacional de Innovacion* (ENISA) finances SMEs' internationalization process²³ through a competitive programme. The expected new Digital Agenda 4.0 for 2017-2020 will provide further policy guidance within this strategic area.

In order to boost the digital transformation of Spanish economy, it is important to raise awareness of the relevance of digital strategies both top-down and bottom-up. This approach will capture the full range of SMEs needs.

²¹ RIO Country Report 2016, and COTEC report 2016.

²² Value added in medium high-tech manufacturing as % of total value added represents 3,88 (vs an EU average of 5,52).

²³ OECD Science, Technology and Innovation Outlook 2016

5 Digital Public Services

5 Digital Public Services	Spain		Cluster	EU
	rank	score	score	score
DESI 2017	6	0.72	0.59	0.55
DESI 2016	5	0.71	0.56	0.51

	Spain				EU
	DESI 2017		DESI 2016		DESI 2017
	value	rank	value	rank	value
5a1 eGovernment Users % internet users (last year)	40% ↑	11	38% ↓	11	34%
	2016		2015		2016
5a2 Pre-filled Forms Score (0 to 100)	67 ↓	10	68 ↓	9	49
	2016		2015		2016
5a3 Online Service Completion Score (0 to 100)	89 ↓	11	91 ↓	7	82
	2016		2015		2016
5a4 Open Data²⁴ % of maximum score	91% ↑	1	82% ↓	1	59%
	2016		2015		2016

This is the dimension where Spain is performing best. Spain ranks 6th among EU countries, with a slightly increased score over last year's. Indeed, Spain scores the highest in Open Data and it is one of the EU countries with the highest online interaction between public authorities and citizens. The reason for the good results in Open Data is linked to the law 18/2015 which ensured data re-use and data transparency²⁵ and the solid base provided by the Aporta Project that was established in 2009 and has promoted the open data culture within the Spanish Public Sector²⁶. 40% of Spanish online users actively access eGovernment services. However, other Member States are progressing fast and Spain ranks this year lower than in last one in the indicators concerning pre-filled and completion eGovernment information. These two indicators are the re-use of information across administrations to make life easier for citizens (Pre-filled Forms indicator) and the sophistication of services (Online Service Completion indicator), where Spain now ranks 10th and 11th, respectively.

Despite Spain's decentralised structure, with central, regional and local government entities, posing challenges in establishing coherent and nationwide eGovernment services, the Digital Transformation Plan for the General Administration and Public Agencies (ICT Strategy 2015-2020)¹¹ with two new legal instruments is now bearing fruit, having delivered a global strategic framework for the transition to full eAdministration by 2018, as evidence in DESI shows.

²⁴ Change of data source. The historical data have also been restated. The new source is the European Data Portal.

²⁵ With support of the Royal Decree 1495/2011 dealing with general Authorisation regime.

²⁶ <http://datos.gob.es/>

Full implementation of the strategic plan, together with the legal instruments, could lead the way to even more significant improvements in the area of Digital Public Administration.

Highlight 2017²⁷: Spain's ICT Strategic plan for 2015-2020²⁸

The "Digital Transformation Plan for the General Administration and Public Agencies (ICT Strategy 2015-2020)" programme aims to ensure that in the future, public administration is electronically accessible for all citizens ("digital by default"). This strategic plan sets out the global strategic framework for progress in the transition to eAdministration in the General State Administration and its Public Agencies. This plan was conceived as a continuation of the Digital Agenda in order to speed up digital transformation of the public sector. In order to facilitate the use of online services and make them digital by default, two new legal instruments were put in place to create the legal base for public service digitisation²⁹. The plan also included the adoption of a digitisation programme in order to attain the goal of an interoperable IT infrastructure which offers user-friendly digital administrative services to all citizens and SMEs throughout Spain as quickly, sustainably and efficiently as possible.

This strategic plan, together with the legal instruments, aims at digitising all public service interactions by 2018 (*tramitación electrónica*). Spain has put in place helpdesk officers (*Oficinas de asistencia en el uso de medios electrónicos*) to provide support and help anyone dealing with eGovernment services. These offices (*060*) and their staff budgets come from the Directorate-General for Public Governance. These offices include the staff role of intermediary (*habilitador*) who can temporarily act as online representative for SMEs to help them in all digital relations with Public Administration. Municipalities and regional governments (*Comunidades autónomas*) share a common interface platform in which they can share and communicate with the Central Administration. Annual revisions will be undertaken by the Commission on ICT Strategy.

²⁷ "Highlight 2016": **Fibre regulation – innovative and complex approach**

In the last review of Spain's broadband markets (adopted on 25th February 2016), the National Regulatory Authority CNMC sought to impose on Telefonica remedies differentiated on the basis of infrastructure (copper vs NGA networks); by geographic area to reflect different levels of competition; and of business and (consumer) mass-market customers. Telefonica will have to offer virtual access to its fibre network for 60-70% of the population of Spain, and bitstream access over copper and fibre with no speed cap for the business market across Spain. CNMC is deploying an innovative approach to determine the areas in which fibre regulation is needed; however the geographic differentiation proposed is highly complex. This dynamic and forward-looking approach results in a lower number of regulated geographical areas.

²⁸ Plan de Transformación digital de la Administración General del Estado y sus Organismos Públicos

²⁹ Law 39/2015, of October 1, the Common Administrative Procedure Public Administration and Law 40/2015, of 1 October, Legal Regime of the Public Sector.