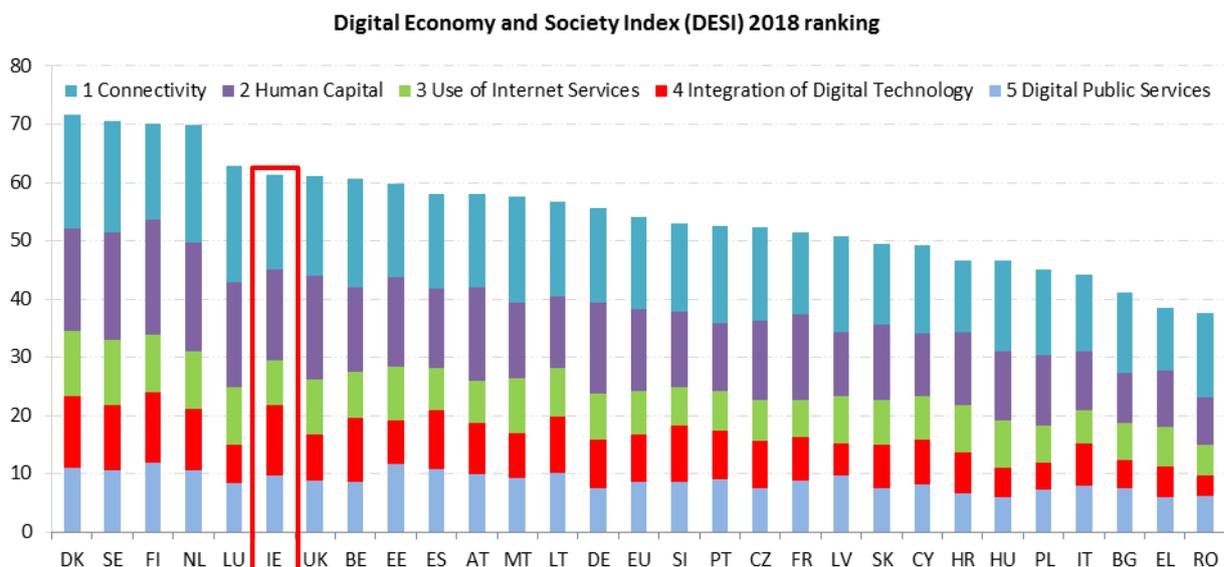# Digital Economy and Society Index (DESI)[1] 2018 Country Report Ireland

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 eCommerce
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.


Digital Economy and Society Index (DESI) 2018 ranking

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

	Ireland		Cluster	EU
	rank	score	score	score
DESI 2018	**6**	**61.3**	**64.0**	**54.0**
DESI 2017	9	56.3	61.2	50.8

In DESI 2018 Ireland ranks 6th place, up three places from DESI 2017. Whilst outstanding in some areas (with top rankings in Science, Technology, Engineering and Mathematics (STEM) graduates, the use of online trading by SMEs and Open Data), it lags well behind in others. With more than half of the adult population lacking at least basic digital skills, Ireland continues to suffer from ICT skills shortages. Access to fast broadband has improved, but 6 % of rural homes still do not have access to even basic fixed broadband and ultrafast broadband coverage remains below the EU average. In Digital Public Services, Ireland ranks top for Open Data and is in second place for business services. However, it ranks comparatively low when it comes to the user-friendliness of services and the use of eHealth services. Addressing the gaps in Human Capital and Connectivity would help improve Ireland's positioning in the remaining dimensions. These two aspects are also critical for individuals, enterprises and public bodies to make the best use of digital technology.

Ireland belongs to the high-performing cluster of countries.[2]

Over the past year, the new government has continued to implement earlier enterprise and skills strategies, including specific digital strategies. In addition, it unveiled its long-term policy on STEM education[3] and a new eGovernment strategy.[4] It has also published a comprehensive plan for public investments (National Development Plan 2018-2027[5]), which reflects the challenges and opportunities of digital transformation.

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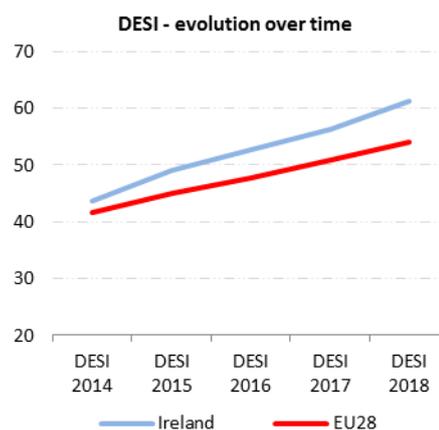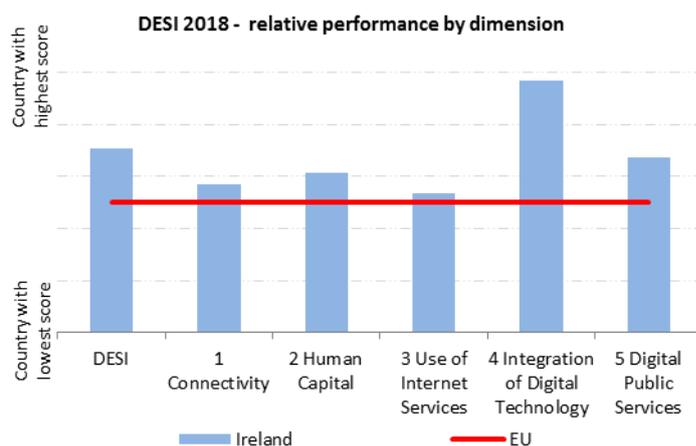
[2] High-performing countries are Denmark, Sweden, Finland, the Netherlands, Luxembourg, Ireland, the UK, Belgium and Estonia.
[3] https://www.education.ie/en/The-Education-System/STEM-Education-Policy/
[4] http://egovstrategy.gov.ie/
[5] http://www.per.gov.ie/en/national-development-plan-2018-2027/

1 Connectivity

1 Connectivity	Ireland		Cluster	EU
	rank	score	score	score
DESI 2018	**11**	**65.1**	**71.9**	**62.6**
DESI 2017	15	59.7	67.9	58.5

	Ireland				EU
	DESI 2018		DESI 2017		DESI 2018
	Value	rank	value	rank	value
1a1 Fixed Broadband Coverage	**97%** ↑	**19**	**96%**	**19**	**97%**
% households	2017		2016		2017
1a2 Fixed Broadband Take-up	**74%** ↑	**13**	**69%**	**18**	**75%**
% households	2017		2016		2017
1b1 4G Coverage	**92%** →	**17**	**92%**	**13**	**91%**
% households (average of operators)	2017		2016		2017
1b2 Mobile Broadband Take-up	**104** ↑	**7**	**96**	**7**	**90**
Subscriptions per 100 people	2017		2016		2017
1c1 Fast Broadband (NGA) Coverage	**89%** ↑	**10**	**82%**	**12**	**80%**
% households covered by VDSL, FTTP or Docsis 3.0	2017		2016		2017
1c2 Fast Broadband Take-up	**51%** ↑	**8**	**41%**	**9**	**33%**
% homes subscribing to >= 30Mbps	2017		2016		2017
1d1 Ultrafast Broadband Coverage	**53%**	**22**	**NA**		**58%**
% households covered by FTTP or Docsis 3.0	2017				2017
1d2 Ultrafast Broadband Take-up	**17.6%** ↑	**12**	**14.2%**	**11**	**15.4%**
% homes subscribing to >= 100Mbps	2017		2016		2017
1e1 Broadband Price Index	**77** ↑	**21**	**72**	**22**	**87**
Score (0 to 100)	2017		2016		2017

Ireland has considerably improved its performance in the Connectivity dimension, now ranking 11th among EU countries (compared to 15th in 2017, measured in line with the revised 2018 methodology). By contrast, 6 % of rural homes still have no access to any fixed broadband connection and at 74 % of households, take-up of fixed broadband is below the EU average, and fixed broadband is relatively expensive compared with most other EU countries. 4G coverage is slightly above the EU average, at 92 %, while take-up of mobile broadband is 104 %, well above the EU average of 90 %. Coverage of fast broadband (NGA) has increased to 89 %, well above the EU average (80 %), as has take-up (51 %, above the EU average of 33 %). At the same time, a key challenge remains to cover the more remote, sparsely populated areas, where the 'digital divide' remains significant.

The 2015 National Broadband Plan (NBP) Intervention Strategy provides for a minimum download of 30 Mbps and a minimum upload of 6 Mbps to be delivered to all premises with a mix of private and public intervention. Public intervention is eligible for EUR 75 million under the European Regional Development Fund (ERDF) programme for 2016-2020. A gap-funding investment model has been chosen, whereby the winning bidder will provide a wholesale service. The contract aims to build a wholesale open access network for fixed locations as swiftly as possible, to be operated over a 25-year term. Where feasible, re-use

of existing infrastructure is encouraged. New infrastructure built by the winning bidder shall be owned by that bidder from the outset.

National Broadband Plan (NBP) procurement encountered a number of difficulties during the reporting period with regard to the remaining intervention area. In April 2017, the intervention area was reduced by removing about 300 000 households that were to be supplied by Eir on market terms. In September 2017, SIRO announced its withdrawal from the National Broadband Plan tender process. In January 2018, Eir announced its withdrawal from the National Broadband Plan, but remained committed to the deployment of high speed broadband to the 300 000 premises in question. The procurement continued in 2018, with the remaining bidding consortium comprising Enet, SSE, Granahan McCourt and John Laing plc. About 540 000 premises are to be covered by this public intervention.

In 2016, the Irish Government established a Mobile Phone and Broadband Taskforce to coordinate activities across government departments to promote the roll-out of fixed and mobile networks. In 2017, it designated individual Broadband Officers in each of the local government areas, to be a single point of contact within the local authorities and to help prepare for the roll-out of the National Broadband Plan. However, Ireland did not amend its building construction rules to transpose the in-house wiring requirements of the Cost Reduction Directive. This may make it difficult to establish connections, even if the network is rolled out to the premises.

Since the National Broadband Plan encountered significant difficulties during the reporting period, the window is narrowing to adjust the scheme to achieve the objectives of the Plan on schedule. Given the 30 Mbit target of the Plan, and the fact that ultrafast coverage was at 53 %, below the EU average of 58 %, ensuring future-proof ultrafast coverage remains a key challenge.

Moreover, finalising the significantly delayed analysis of the relevant wholesale broadband access markets, and addressing shortcomings in the institutional setup preventing the national regulator ComReg from directly imposing fines on operators for violations of national telecommunications law would improve overall regulatory governance.

2 Human Capital

2 Human Capital	Ireland		Cluster	EU
	rank	score	score	score
DESI 2018	**9**	**61.7**	**70.7**	**56.5**
DESI 2017	12	56.0	69.4	54.6

	Ireland					EU
	DESI 2018			DESI 2017		DESI 2018
	value		rank	value	rank	value
2a1 Internet Users	79%	→	17	79%	12	81%
% individuals	2017			2016		2017
2a2 At Least Basic Digital Skills	48%	↑	23	44%	24	57%
% individuals	2017			2016		2017
2b1 ICT Specialists	3.9%	↑	10	3.7%	10	3.7%
% individuals	2016			2015		2016
2b2 STEM Graduates[6]	31.5	↑	1	24.7	1	19.1
Per 1000 individuals (aged 20-29)	2015 or 2016			2014		2015

Ireland further strengthened its leading position in relation to the proportion of STEM (Science, Technology, Engineering and Mathematics) graduates. This pulls Ireland to the top 10 for the human capital dimension. However, only 48 % of individuals have at least basic digital skills. Despite a 4 percentage point improvement over the last year, this is still one of the lowest levels in the entire EU. Ireland also fell significantly behind other EU countries with regard to the number of people actively using the internet. This is the same as last year (79 %). However, because of progress made in other EU countries, it puts Ireland in 17th place in the rankings.

Ireland continues to suffer from significant skills shortages. Since 2012 the proportion of enterprises who tried to recruit ICT specialists, but experienced difficulties, has consistently remained above 50 %. ICT skills shortages are also confirmed by a recent analysis of vacancies by the competent national authority.[7] The proportion of ICT specialists in the overall workforce is slightly above the EU average, but far below the leading EU country (Finland, with 6.6 %).

To achieve its ambition of becoming the global leader in ICT skills, the new government continues to give high priority to the promotion of STEM education in general and ICT in particular. In November 2017, it unveiled the STEM Education Policy Statement and Implementation Plan for Schools. This is a comprehensive policy, which aims to strengthen the teaching of STEM (including computer science and coding) in all schools and universities and to encourage the uptake of these subjects among young people. This overall goal is also

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[6] 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.

[7] http://www.skillsireland.ie/Publications/2017/Vacancy%20Overview%202016.pdf

reflected in recent horizontal Action Plans for Education.[8] The introduction of Computer Science as a secondary school Leaving Certificate subject is planned for 2018.

Besides aiming to increase the number of highly qualified ICT and STEM graduates, education policy initiatives also aim to ensure that all students acquire sufficient digital skills to equip them for an increasingly digital world. Concrete actions are identified, such as including coding in the mathematics and general school curriculum. In addition, students are to be helped from an early age to hone key general skills, like problem-solving, creativity or communication, to help them successfully navigate technological changes irrespective of their future career. There are also ongoing efforts to integrate digital technology into everyday teaching. The Digital Framework announced in September 2017 will give teachers practical support with this, and funds are being made available to schools for the purchase of digital equipment.

Finally, the National Development Plan 2018-2027 envisages making significant investments in technological universities.

Evidence-based policy-making continues to be at the heart of educational initiatives relevant for digital skills. The Expert Group for Future Skills Needs is doing a comprehensive study to assess the impact of digitisation on job roles and sectors across the economy. It is also reviewing the ICT Skills Action Plan 2014-2018, a key initiative to address ICT skills shortages through education, and forecasting demand for ICT skills in the coming years. This work will serve as a basis for a new action plan. Following a closer analysis of the demand for such skills, new types of ICT apprenticeships are also being developed in the framework of the publicly supported comprehensive apprenticeship scheme.

Policy initiatives focusing on educational activities are likely to lead to progress over time. However, such initiatives do not cover adults who have left the educational system, but nevertheless need at least basic digital skills to keep up with the technological changes which increasingly permeate their work and lives. In particular, the flagship reskilling programme (Springboard+) focuses only on advanced ICT skills. At the other end of the spectrum, funding is made available for only introductory digital literacy courses across Ireland, targeting people who have never used the internet (including the elderly). Overall, the courses have received positive feedback from participants.[9]

Despite the clear commitment from successive Irish governments to digital skills, it remains a challenge to ensure that a significant proportion of the adult population is not left behind in a fast-moving digital economy and society because they lack adequate digital skills. This is of course a general challenge not only affecting Ireland. However, the overall low level of digital skills suggests that the challenge may be relatively more difficult to overcome in Ireland.

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[8] Action Plan for Education 2017 (https://www.education.ie/en/Publications/Corporate-Reports/Strategy-Statement/Action-Plan-for-Education-2017.pdf) and 2018 (https://www.education.ie/en/Publications/Corporate-Reports/Strategy-Statement/action-plan-for-education-2018.pdf).

[9] *'Getting Citizens Online'* programme: https://www.dccae.gov.ie/en-ie/communications/topics/Digital-Strategy/getting-citizens-online/Pages/Citizens-and-Training.aspx

3 Use of Internet Services

3 Use of Internet Services	Ireland		Cluster	EU
	rank	score	score	score
DESI 2018	**15**	**52.3**	**63.4**	**50.5**
DESI 2017	16	47.8	60.5	47.5

	Ireland				EU
	DESI 2018		DESI 2017		DESI 2018
	value	rank	value	rank	value
3a1 News	**65%** ↑	**25**	**49%**	**28**	**72%**
% individuals who used Internet in the last 3 months	2017		2016		2017
3a2 Music, Videos and Games	**73%**	**22**	**73%**	**22**	**78%**
% individuals who used Internet in the last 3 months	2016		2016		2016
3a3 Video on Demand	**24%**	**10**	**24%**	**10**	**21%**
% individuals who used Internet in the last 3 months	2016		2016		2016
3b1 Video Calls	**48%** ↑	**16**	**42%**	**17**	**46%**
% individuals who used Internet in the last 3 months	2017		2016		2017
3b2 Social Networks	**72%** ↑	**12**	**70%**	**13**	**65%**
% individuals who used Internet in the last 3 months	2017		2016		2017
3c1 Banking	**71%** ↑	**12**	**64%**	**12**	**61%**
% individuals who used Internet in the last 3 months	2017		2016		2017
3c2 Shopping	**64%** ↓	**14**	**71%**	**9**	**68%**
% internet users (last year)	2017		2016		2017

The use of online services in Ireland has remained broadly comparable to the EU average. Despite a significant increase in the proportion of internet users who read news online, it still remains one of the lowest in Europe. Internet users are making increased use of video calls, social media and online banking, but the appetite for online shopping seems to have decreased over the past year.

4 Integration of Digital Technology

4 Integration of Digital Technology	Ireland		Cluster	EU
	Rank	score	score	score
DESI 2018	**3**	**60.0**	**47.0**	**40.1**
DESI 2017	2	55.7	44.0	36.7

	Ireland					EU
	DESI 2018			DESI 2017		DESI 2018
	value		rank	value	rank	value
4a1 Electronic Information Sharing	**28%**	↑	19	**25%**	21	**34%**
% enterprises	2017			2015		2017
4a2 RFID	**4.7%**	↑	14	**4.0%**	13	**4.2%**
% enterprises	2017			2014		2017
4a3 Social Media	**36%**	→	4	**36%**	3	**21%**
% enterprises	2017			2016		2017
4a4 eInvoices	**NA**			**15%**	15	**NA**
% enterprises	2017			2016		2017
4a5 Cloud	**NA**			**24.2%**	5	**NA**
% enterprises	2017			2016		2017
4b1 SMEs Selling Online	**30%**	→	1	**30%**	1	**17%**
% SMEs	2017			2016		2017
4b2 eCommerce Turnover	**23%**	↑	1	**22%**	1	**10%**
% SME turnover	2017			2016		2017
4b3 Selling Online Cross-border	**17%**	↑	1	**16%**	1	**8%**
% SMEs	2017			2015		2017

In Integration of Digital Technology Ireland is still in the top three countries thanks to its top ranking for all three indicators measuring the use of online commerce by SMEs. Social media also continues to be more widely used by companies than in most other EU countries.

In line with the long-term vision set out in the *Enterprise 2025* strategy in 2015, the National Development Plan 2018-2027 confirms the government`s continued focus on innovation and the knowledge-based economy, with the tech sector featuring prominently.

In the same spirit, the government continued its comprehensive support programme for start-ups, investing EUR 30 million during 2017. ICT start-ups continue to be promising targets for the programme and Deep Tech was singled out as one of the two priority areas for investments in 2018. According to research by Startup Europe Partnership, in 2017 Ireland ranked 8th among the top 20 European ICT scale-up ecosystems overall, based on the number of scale-ups and capital raised.[10] It is within the top 5 if the size of the economy and population is taken into account.

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[10] Start-up Europe Partnership, SEP Monitor, June 2017.

According to the IDA, the agency promoting FDI in the country, Ireland is home to 16 of the world's top 20 software companies.[11] Nevertheless, public intervention is needed to help indigenous firms, in particular SMEs, to make the most of technology.

To this end, Technology and Research Centres are being set up across the country. Technology Centres focus on close-to-market activities. Whilst benefiting from public and private funding, they are established and run by industry. They offer access to research, know-how and technology which their client firms could not obtain themselves. Around half of these centres focus directly on digital technology. In 2017, a new centre was established specialising in advanced manufacturing technologies, including Industry 4.0, Collaborative Robotics, Industrial IoT, Data Analytics and Cybersecurity. Research Centres, overseen by Science Foundation Ireland, focus on collaboration between higher education institutions and industry. They complement the work carried out in Technology Centres. For example, several institutions participate in a Research Centre dedicated to advanced smart manufacturing.

The government also announced, as part of the National Development Plan 2018-2027, the establishment of a EUR 500 million Disruptive Technologies Innovation Fund. Besides offering direct support to enterprises and start-ups in the coming years, the fund will also be used to drive further cooperation between research institutions and industry. As also announced in the Plan, Ireland is planning to join the European High-Performance Computing (HPC) initiative and it is also planning to invest in national HPC facilities.

Ireland recognises the need to facilitate the uptake of digital technology by indigenous enterprises, especially SMEs. Efforts are being made to incentivise and facilitate both the supply and adoption of digital technology. Some of these are relatively recent and still being developed. It is therefore too early to gauge their full impact, in particular on the diffusion of technology among indigenous companies and any resulting gains in competitiveness and productivity. It is also important to note that connectivity and human capital is crucial for the effective utilisation of digital technology, so any efforts to improve on these two dimensions are bound to have positive spillover effects on the integration of digital technology by enterprises.

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[11] https://www.idaireland.com/invest-in-ireland

5 Digital Public Services

5 Digital Public Services	Ireland		Cluster	EU
	rank	score	score	score
DESI 2018	**10**	**64.7**	**63.0**	**57.5**
DESI 2017	9	60.6	60.2	53.7

	Ireland				EU
	DESI 2018		**DESI 2017**		**DESI 2018**
	Value	**rank**	**value**	**rank**	**value**
5a1 eGovernment Users[12] % internet users needing to submit forms	**77%** ↑ 2017	**9**	**71%** 2016	**9**	**58%** 2017
5a2 Pre-filled Forms Score (0 to 100)	**39** ↑ 2017	**18**	**35** 2016	**18**	**53** 2017
5a3 Online Service Completion Score (0 to 100)	**88** ↓ 2017	**12**	**89** 2016	**10**	**84** 2017
5a4 Digital Public Services for Businesses Score (0 to 100) — including domestic and cross-border	**99** ↑ 2017	**2**	**97** 2016	**3**	**83** 2017
5a5 Open Data % of maximum score	**96%** ↑ 2017	**1**	**80%** 2016	**3**	**73%** 2017
5b1 eHealth Services % individuals	**11%** 2017	**21**	**NA**		**18%**

Ireland ranks 10th in Digital Public Services, with no significant change in its rankings. It ranks top in Open Data and has an almost perfect result in digital public services for businesses. When it comes to services aimed at and used by citizens, the results are less impressive. Ireland ranks particularly low in the use of eHealth services for example.

In July 2017, a new eGovernment strategy was unveiled covering the period until 2020. The strategy recognises the need to ensure that people have the skills to make the most of digital public services. This is important in view of the low levels of basic digital skills among the wider population. In the meantime, whilst embracing the 'digital by default' principle, services will also be available in other ways and assistance to use digital services will be provided if needed. There are plans to improve the services provided to private citizens by offering a one-stop shop login for all services (the 'Digital Service Gateway'). Also, users would not have to provide the same information several times: information should be reusable for different purposes within the limits of data protection rules. Since Ireland ranks quite low for the DESI indicator most relevant in this context (pre-filled forms), this would be a positive development.

The government also appointed a Minister of State for eGovernment, which should help to drive implementation and the eGovernment agenda in general.

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[12] 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.

Ireland has had a comprehensive eHealth strategy in place since 2013 and eHealth was confirmed as an investment priority in the National Development Plan 2018-2027.

The weak points of the supply and use of digital public services seem to be well recognised and action is planned to tackle these. Central to the effective use of digital public services are the digital skills of the population and connectivity. Any effective measures to improve on these dimensions in general would be beneficial for the use of digital public services.

Highlight 2018: Open Data Portal[13]

Despite commencing its Open Data Initiative as recently as 2014, Ireland is now best in the class in Europe. This is confirmed by its top DESI ranking, based on a comprehensive set of indicators. The portal contains over 6 000 datasets organised into 14 categories covering a wide range of topics. It is user-friendly and has a showcase page which demonstrates how Open Data can be used, as well as visualisations of data.

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[13] https://data.gov.ie/