EUROPEAN
COMMISSION

Brussels, 10.5.2017
SWD(2017) 160 final

PART 25/62

COMMISSION STAFF WORKING DOCUMENT

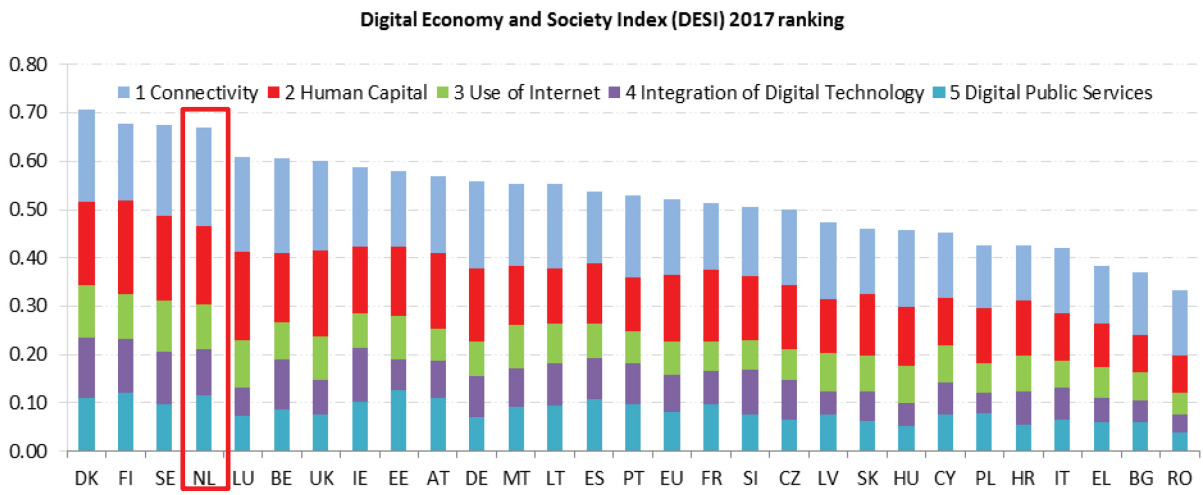
Europe's Digital Progress Report 2017

Europe's Digital Progress Report (EDPR)

2017 Country Profile The Netherlands

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



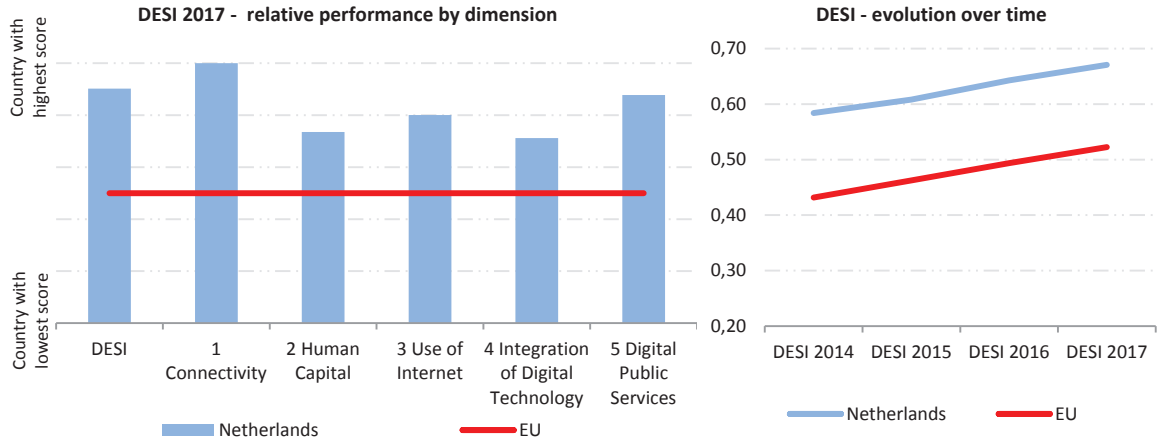
[1] https://ec.europa.eu/digital-single-market/en/desi

	Netherlands		Cluster	EU
	rank	score	score	score
DESI 2017	**4**	**0,67**	**0,63**	**0,52**
DESI 2016[2]	4	0,64	0,60	0,49

The Netherlands ranks 4th out of the 28 EU Member States, within 0.01 of the 2nd rank. and outperforms the other Member States in all five DESI dimensions: it ranks 1st in Connectivity with an excellent digital infrastructure which boosts the growth of the Dutch digital economy and society; in the Netherlands nearly the whole population (92%) makes use of Internet, especially for banking (91%) and shopping (79%). The digitisation of Public Services is among the most advanced in the EU (rank 3). The Integration of Digital Technology (rank 6) constitutes the Netherlands' weakest performance among the five DESI dimensions despite a slight overall increase over the last year.

The Netherlands belongs to the **high performing** cluster of countries[3]

The Dutch Digital Agenda 2016-2017 sets the digitisation of four key sectors (industry, healthcare, energy and mobility) as a priority and finds human capital and cybersecurity to be preconditions for digitisation.[4]



[2] The DESI 2016 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] High performing countries are Denmark, Finland, Sweden, the Netherlands, Belgium, the UK, Ireland, Luxembourg and Estonia.

[4] https://hollandfintech.com/digital-agenda-renew-trust-accelerate/

1 Connectivity

1 Connectivity	Netherlands rank	Netherlands score	Cluster score	EU score
DESI 2017	**1**	**0.82**	**0.75**	**0.63**
DESI 2016	1	0.80	0.73	0.59

	Netherlands DESI 2017 value		Netherlands DESI 2017 rank	Netherlands DESI 2016 value	Netherlands DESI 2016 rank	EU DESI 2017 value
1a1 Fixed Broadband Coverage % households	**100%** 2016	→	**2**	**100%** 2015	**2**	**98%** 2016
1a2 Fixed Broadband Take-up % households	**95%** 2016	↑	**2**	**94%** 2015	**2**	**74%** 2016
1b1 Mobile Broadband Take-up Subscriptions per 100 people	**85** June 2016	↑	**12**	**80** June 2015	**9**	**84** June 2016
1b2 4G coverage[5] % households (average of operators)	**91%** 2016		**16**	**NA**		**84%** 2016
1b3 Spectrum[6] % of the target	**61%** 2016	↓	**21**	**65%** 2015	**19**	**68%** 2016
1c1 NGA Coverage % households	**98%** 2016	→	**3**	**98%** 2015	**3**	**76%** 2016
1c2 Subscriptions to Fast Broadband % subscriptions >= 30Mbps	**68%** June 2016	↑	**3**	**62%** June 2015	**3**	**37%** June 2016
1d1 Fixed Broadband Price % income	**1,0%** price 2016, income 2015	→	**7**	**1,0%** price 2015, income 2015	**8**	**1,2%** price 2016, income 2015

The Netherlands performs above average and retains its first position in the Connectivity dimension. Both with regard to broadband and fast broadband coverage, the Netherlands is among the top 3 EU Member States. Broadband services are available throughout the country (through fixed, mobile and satellite networks) and the take-up of broadband as well as of NGA is high. However, the Netherlands is performing slightly less well in the area of 4G coverage take up of mobile broadband, and spectrum harmonisation.

In July 2016 the Ministry of Economic affairs published a new Digital Agenda outlining actions for further digitisation of the Dutch economy for the period 2016/2017. Generally, the Dutch broadband strategy opts for a market-based infrastructure rollout. Importantly, it is emphasised that the local governments' main task is to create the right conditions, such as planning and coordinating excavation work, shortening and reducing the costs of licensing procedures or promoting the development as well as the use of applications and services. Where market-based

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

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

infrastructure rollout fails, local and regional actors may assist and provide funding and financial instruments. Furthermore, the government is supporting citizens' initiatives on self-funded broadband networks such as samensnelinternet.nl, the knowledge platform where information can be obtained about various facets of ongoing broadband projects.

The Netherlands is maintaining its relatively good pace of progress over time with sustaining the competitiveness of the sector. Transposing of the Broadband Cost Reduction Directive still needs to be completed to further ease investments in infrastructure.

The Netherlands intends to play an important role in the European strategic roadmap to deliver 5G services. To speed-up innovations around 5G, public authorities and industry have launched the initiative Fieldlab 5G, by means of which various companies can gain experience with innovative application in the areas of agriculture, care, energy, living environment, and traffic and logistics. Moreover, preparations have started for a (5G) multi-band auction expected to take place in 2019.

2 Human Capital

2 Human Capital	Netherlands		Cluster	EU
	rank	score	score	score
DESI 2017	**6**	**0.65**	**0.68**	**0.55**
DESI 2016	6	0.63	0.66	0.53

	Netherlands					EU
	DESI 2017			DESI 2016		DESI 2017
	value		rank	value	rank	value
2a1 Internet Users % individuals	**92%** 2016	↑	**4**	**91%** 2015	**3**	**79%** 2016
2a2 At Least Basic Digital Skills % individuals	**77%** 2016	↑	**3**	**72%** 2015	**4**	**56%** 2016
2b1 ICT Specialists[7] % employed individuals	**5,0%** 2015	↑	**3**	**4,9%** 2014	**4**	**3,5%** 2015
2b2 STEM Graduates Per 1000 individuals (aged 20-29)	**10** 2014	→	**27**	**10** 2013	**27**	**19** 2014

The Netherlands is one of Europe's leaders in terms of number of citizens using the Internet and those having high digital skills compared with the EU average. Despite 5% of the workforce being ICT specialists (higher than the EU average of 3.5%), the shortage of ICT professionals, including cybersecurity specialists and data analysts represents a major challenge. On the other hand, the number of STEM graduates is persistently among the lowest in the EU (rank 26).

The Dutch Digital Agenda 2016-2017[8] indicates the talent development and supply of professionals with the right skills to be a major. To tackle the problem, the Dutch digital skills strategy is articulated along two axes: the integration of ICT in the education system and the strengthening of the link between education and the labour market. To implement it, several projects have been launched, including the integration of digital literacy and computing in the core curricula of primary and secondary schools, and the development of personalised digital learning resources to develop students' individual capacities[9].

To enhance the connection between supply and demand and to improve lifelong learning, the Dutch government launched in 2015 the Human Capital Agenda (HCA) for ICT, an action plan aiming at fulfilling the need for sufficient adequately trained personnel within the next few years. The plan aims at stimulating the interest among the students, understanding and anticipating skills needs, providing scholarships for excellent students, increasing the number of ICT teachers, offering more and better internships for technical college students, investing in continuous learning and in personal career development of ICT professionals. A timely and targeted implementation of the HCA could contribute to making ICT an attractive career option for young people.

[7] Historical data have been revised by Eurostat.

[8] https://hollandfintech.com/digital-agenda-renew-trust-accelerate/

[9] The two projects refer to the work under Platform Onderwijs2032 and Onderwijs &ICT breakthrough project

3 Use of Internet

3 Use of Internet	Netherlands		Cluster	EU
	rank	score	score	score
DESI 2017	**4**	**0.62**	**0.60**	**0.48**
DESI 2016	8	0.56	0.57	0.45

	Netherlands				EU
	DESI 2017		DESI 2016		DESI 2017
	value	rank	value	rank	value
3a1 News % individuals who used Internet in the last 3 months	**75%** ↑ 2016	**16**	**59%** 2015	**25**	**70%** 2016
3a2 Music, Videos and Games[10] % individuals who used Internet in the last 3 months	**88%** 2016	**6**	**NA**		**78%** 2016
3a3 Video on Demand[11] % individuals who used Internet in the last 3 months	**39%** 2016	**3**	**NA**		**21%** 2016
3b1 Video Calls % individuals who used Internet in the last 3 months	**39%** ↑ 2016	**20**	**34%** 2015	**23**	**39%** 2016
3b2 Social Networks % individuals who used Internet in the last 3 months	**66%** ↑ 2016	**19**	**64%** 2015	**19**	**63%** 2016
3c1 Banking % individuals who used Internet in the last 3 months	**91%** → 2016	**2**	**91%** 2015	**3**	**59%** 2016
3c2 Shopping % internet users (last year)	**79%** ↑ 2016	**6**	**76%** 2015	**6**	**66%** 2016

In terms of the propensity of individuals to use Internet services, the Netherlands made significant progress over the last year and advanced from rank 8 to rank 4. It progressed in all fields. Dutch people read news online (75%), listen to music, watch videos and play games online more than Europeans (88% of Internet users compared to 78% for the EU 28). Users in the Netherlands outperform the other EU countries in the use of online banking (91%) compared with 59% in EU 28, and rank 2nd among the Member States. They use Internet for online shopping more than most other Europeans, 79% of Internet users compared with 66% in the EU 28, and during the last year they slightly increased their use of Social Networks (from 64% to 66%).

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[10] Break in series due to a change in the Eurostat survey.

[11] Break in series due to a change of data source. New source is Eurostat.

4 Integration of Digital Technology

4 Integration of Digital Technology	Netherlands rank	Netherlands score	Cluster score	EU score
DESI 2017	**6**	**0.48**	**0.44**	**0.37**
DESI 2016	6	0.46	0.41	0.35

	Netherlands DESI 2017 value		Netherlands DESI 2017 rank	Netherlands DESI 2016 value	Netherlands DESI 2016 rank	EU DESI 2017 value
4a1 Electronic Information Sharing % enterprises	**45%** 2015		**4**	**45%** 2015	**4**	**36%** 2015
4a2 RFID % enterprises	**3,1%** 2014		**19**	**3,1%** 2014	**19**	**3,9%** 2014
4a3 Social Media % enterprises	**38%** 2016	↑	**2**	**37%** 2015	**1**	**20%** 2016
4a4 eInvoices % enterprises	**19%** 2016	↑	**11**	**15%** 2015	**8**	**18%** 2016
4a5 Cloud % enterprises	**29%** 2016		**4**	**NA** 2015		**13%** 2016
4b1 SMEs Selling Online % SMEs	**16%** 2016	↓	**14**	**17%** 2015	**11**	**17%** 2016
4b2 eCommerce Turnover % SME turnover	**9,2%** 2016	↑	**14**	**8,3%** 2015	**13**	**9,4%** 2016
4b3 Selling Online Cross-border % SMEs	**10,3%** 2015		**7**	**10,3%** 2015	**7**	**7,5%** 2015

The Netherlands ranks 6th in the dimension concerning the Integration of Digital Technology by businesses and is making further progress – although at a somewhat slower pace than a number of other EU Member States. Importantly, it has managed a significant and continuous improvement in terms of business digitisation over the period 2014-2017. The Netherlands also experienced a significant increase in the deployment of cloud solutions between 2015 and 2017, as well as in the use of eInvoices. Finally, the Netherlands continues to be among the EU's frontrunners in terms of overall intensity of the use of digital by enterprises, according to the Commission's 2016 Digital Scoreboard. In this regard, it is particularly noteworthy that it ranks 1st among EU Member States in terms of enterprises analysing big data from any source (19.1%).

At the same time, the below EU-average use of RFID technology and the flattening in the percentage of SMEs selling online to below EU-average levels could be areas for some concern, especially in the light of the finding of a 2015 Smart Industry survey that Dutch entrepreneurs remain relatively uninformed about the digital revolution and its implications for their business.

In the context of the Netherlands' Digital Agenda 2016-2017, the Dutch government is implementing a number of policies to enable the Netherlands to fully capitalise on the opportunities offered by digitisation. This includes structural measures for attracting digital startups and scale-ups, the easing of the regulatory burden and the improving of government digital service to enterprises. Through the Smart Industry programme (launched in 2015), the Dutch government in addition puts specific emphasis on the need to foster the digitisation of manufacturing. The main priority for 2016 and 2017 is in this regard the rolling-out and funding of field labs networks of companies and knowledge institutes to develop and test ICT applications.

Specific policy agendas in the area of drones as well as standardisation for smart industry are being developed in parallel. Other sector-specific priorities are e-health, ICT in the energy sector and smart mobility.

In order to further improve the digitisation of Dutch companies, it will be important to continuously raise the awareness of enterprises about the importance of digital strategies. Continued support to allow innovative ICT start-ups to successfully scale-up - which has for example been undertaken through so-called ICT breakthrough projects - is another important element to achieving an improved integration of digital technology in the wider industry, both at home and abroad. The Netherlands could also play a more leading role in terms of the development of technical standards for smart industry, e-health and other areas, and its standardisation agenda could constitute an important opportunity in this regard.

Highlight 2017:[12] Dutch Universities' pledge for a human-centred digital society

The new technologies offer interesting opportunities, but also bring new dilemmas and drawbacks. Success will depend on finding the best way to combine technology and society.

In September 2016 Dutch universities issued a joint call* for a national research on effective and efficient information technology that serves human beings and society.

In the years ahead, Dutch universities will work together with the business sector and the government towards a common goal: make The Netherlands a living "testing ground" for the creation of effective connections between digital technology, people and their societies.

To this purpose, universities will start to cluster and coordinate much existing research. Targeted and substantial incentives for research programmes will be necessary, involving collaboration between a variety of relevant disciplines. The recruitment and training of new talent in the digital sciences will be crucial, as will the expansion and enhancement of the required technological and laboratory infrastructure.

"*The decision to make the Netherlands a testing ground for a human-centred information technology gives Dutch society and academia a clear long-term vision of the future. It's a daring, appealing and inspirational idea that can inspire major collective efforts*"

* http://www.vsnu.nl/files/documents/Publications/VSNU_The_Digital_Society.pdf

[12] Highlight 2016: **"**Human Capital Agenda ICT**"** Recognising a qualitative and quantitative shortage of ICT professionals, particularly in areas related to cloud computing, Big Data and cybersecurity, the Dutch Human Capital Agenda ICT intends to (i) better match supply and demand, mainly by increasing inflow into ICT-education and by increasing the participation of companies in education. This includes increasing the number of Centres of Expertise with a focus on ICT; reducing shortages in ICT professors; developing a specialised labour market monitor to obtain better insights into ICT professional competence shortages. A further priority is (ii) promoting life-long learning through investments in the supply of lifelong-learning training courses and more attention to the personal career development of ICT professionals.

5 Digital Public Services

5 Digital Public Services	Netherlands		Cluster	EU
	rank	score	score	score
DESI 2017	**3**	**0.77**	**0.59**	**0.55**
DESI 2016	4	0.73	0.57	0.51

	Netherlands				EU
	DESI 2017		DESI 2016		DESI 2017
	value	rank	value	rank	value
5a1 eGovernment Users ↑ % internet users (last year)	**58%** 2016	**4**	**56%** 2015	**5**	**34%** 2016
5a2 Pre-filled Forms ↓ Score (0 to 100)	**74** 2016	**5**	**76** 2015	**6**	**49** 2016
5a3 Online Service Completion ↓ Score (0 to 100)	**89** 2016	**11**	**91** 2015	**8**	**82** 2016
5a4 Open Data[13] ↑ % of maximum score	**79%** 2016	**4**	**60%** 2015	**7**	**59%** 2016

In Digital Public Services the Netherlands ranks 3rd among EU countries. 58 % of Internet users submit online forms to public authorities, far above the EU average (34%). Both the amount of data in pre-filled forms and the share of life events that can be completed online are above EU average. The Open data indicator has significantly improved because of the increased supply of data (regional portals have been integrated in the national one) as well as increased usage and political impact triggered by the National Open Data Agenda[14].

The Netherlands is advancing rapidly as regards modernising its public administration. The Digitaal 2017 programme has been running since 2010 to implement the government vision of human-centred and full ICT driven public services. It sets January 1, 2018 as target date for all citizens and businesses to be able to do digital business with the government. The 2016 progress report showed that of the 550 government-wide services, 88 percent were already available digitally. Essential to the digitisation process so far and for its timely completion is the support provided by the Generic Digital Services (GDI) which is a digital basic services infrastructure of the government and the Iimpulse eID to provide easy and safe access to eGovernment services and health care. Highly secure identification and standardisation are preconditions for widespread application of eHealth. According to the eHealth monitor 2016,[15] the eHealth offering is substantial, but healthcare users do not use it much. The awareness campaigns foreseen by the government will help promote the use of eHealth and to meet the objectives set out in the Supported Self-care Programme[16].

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

[14] http://www.opengovpartnership.org/sites/default/files/LR_91332_Actieplan_ENG_v2.pdf

[15] https://www.ehealth-monitor.nl/

[16] http://zelfzorgondersteund.nl/