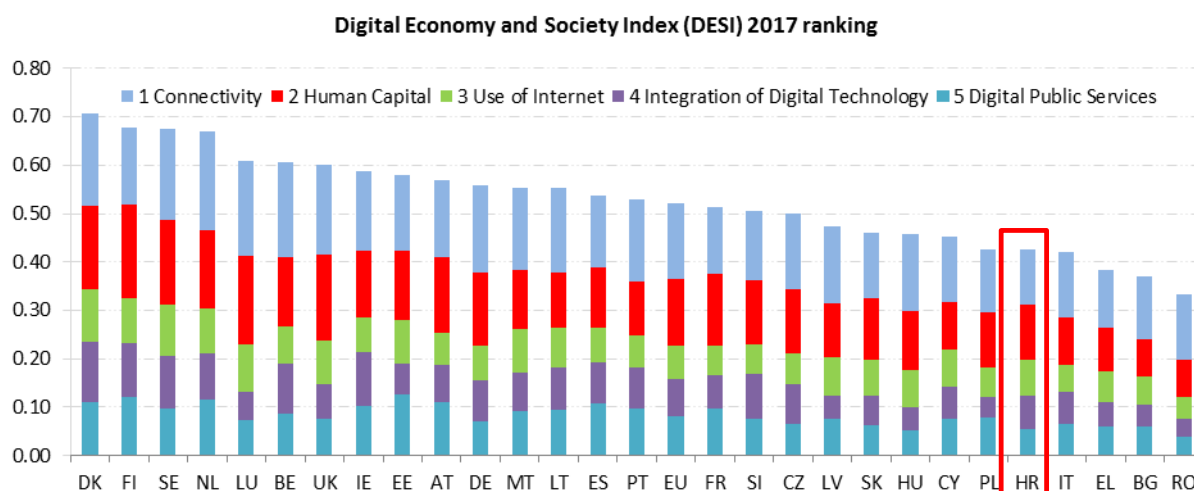# Europe's Digital Progress Report (EDPR) 2017 Country Profile Croatia

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:

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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

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

| | Croatia | | Cluster | EU |
	rank	score	score	score
DESI 2017	**24**	**0.43**	**0.41**	**0.52**
DESI 2016[2]	23	0.40	0.38	0.49

Croatia ranks 24th out of the 28 EU Member States. Overall, it progressed slowly over the last year but fell back from rank 23 to rank 24 because other countries were progressing faster. Croatian citizens are above average Internet users. In particular they like to read news (2nd rank), to listen to music, to play games or to watch videos and movies online. Also their digital skills are steadily improving (from rank 17 in 2015 to rank 13 in 2016). The use of digital technologies by enterprises is close to average. Companies are above average users of Cloud Services (16%, rank 9). The turnover of SMEs selling online is increasing and above the EU average. Digital Public Services are slowly improving: Croatia is performing above average on the availability of Open Data but the number of eGovernment users is only slowly increasing and there is no progress in the delivery of services. The country's greatest challenge in digital is its low performance in connectivity. Rural broadband connectivity and fast broadband coverage are limited. Furthermore prices for fixed broadband remain extremely high.

Croatia belongs to the Low performing cluster of countries[3].

The last year was marked by election periods which led to a *standstill* in Croatia. Following the September 2016 elections, the new Government is setting-up a Central Office for the Development of the Digital Society. Its mission comprises the support of the Croatian Government with regard to the development of ICT infrastructure and digital public services, and to popularise the development of the digital society to citizens, the economy and the public sector. Digital Strategies are being updated.

DESI 2017 - relative performance by dimension

DESI - evolution over time

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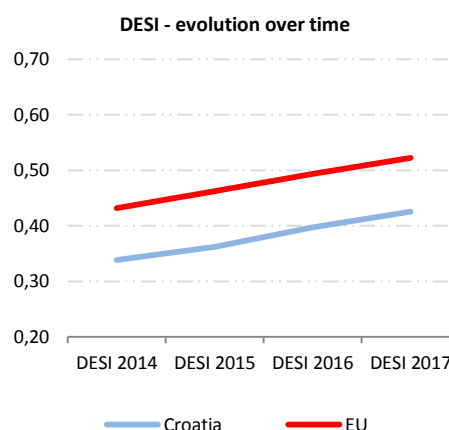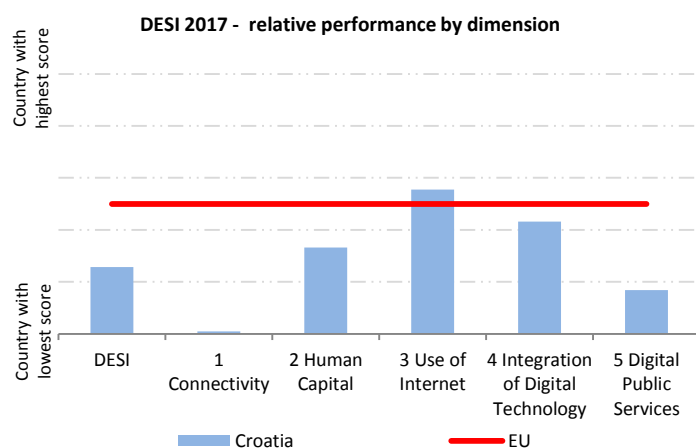
[2] The DESI 2016 was re-calculated for all countries to reflect slight changes in the choice of indicators and corrections to the underlying indicator data. As a result, country scores and rankings may have changed from the previous publication. For further information please consult the DESI methodological note at https://ec.europa.eu/digital-single-market/en/desi.

[3] Low performing countries are Romania, Bulgaria, Greece, Italy, Croatia, Poland, Cyprus, Hungary and Slovakia.

1 Connectivity

1 Connectivity	Croatia		Cluster	EU
	rank	score	score	score
DESI 2017	**28**	**0.45**	**0.53**	**0.63**
DESI 2016	28	0.42	0.46	0.59

	Croatia					EU
	DESI 2017			**DESI 2016**		**DESI 2017**
	value		rank	value	rank	value
1a1 Fixed Broadband Coverage	97%	→	19	97%	18	98%
% households	2016			2015		2016
1a2 Fixed Broadband Take-up	70%	→	17	70%	13	74%
% households	2016			2015		2016
1b1 Mobile Broadband Take-up	78	↑	15	68	15	84
Subscriptions per 100 people	June 2016			June 2015		June 2016
1b2 4G coverage[4]	67%		25	NA		84%
% households (average of operators)	2016					2016
1b3 Spectrum[5]	40%	↓	26	41%	25	68%
% of the target	2016			2015		2016
1c1 NGA Coverage	60%	↑	26	52%	25	76%
% households	2016			2015		2016
1c2 Subscriptions to Fast Broadband	10%	↑	26	3%	28	37%
% subscriptions >= 30Mbps	June 2016			June 2015		June 2016
1d1 Fixed Broadband Price[6]	2.9%	↓	28	2.5%	27	1.2%
% income	price 2016, income 2015			price 2015, income 2015		price 2016, income 2015

While there is some progress in terms of performance with regard to the Connectivity index, Croatia still sits at the bottom of the EU ranking. Although the availability of fixed broadband connections is just below the EU average, Croatia has not made progress in their take-up, with only 70 % of households subscribing to fixed broadband. The availability of fast broadband improved in absolute terms, as well as its take-up, which went from 3% to 10% of all connections; however both indicators remain far below the EU average.

Different aspects can be seen as contributory factors to poor take-up performance, ranging from those related to the limited demand for fast broadband to affordability. Croatia is for instance the country with the most expensive standalone fixed broadband subscription in the EU, costing as much as 2.9% of the average gross income (compared to an EU average of 1.2% of the average gross income). Moreover, while there is an increase in the take-up of mobile broadband services, often sold in bundles, 4G coverage in Croatia is modest (Croatia ranks 25th).

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

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

[6] Due to a slight methodological change, historical data was re-calculated.

In July 2016, the Croatian government adopted its "Strategy for Broadband Development in the Republic of Croatia" for 2016 – 2020. The main objectives to be fulfilled by 2020 focus are (i) universal NGA coverage at speeds over 30 Mbps, and (ii) at least 50 % of households taking up 100 Mbps or greater. The strategy is accompanied by the "National Framework Programme for the Development of Broadband Infrastructure in Areas Lacking Sufficient Commercial Interest for Investments", which establishes the procedures for state aid and public deployment of ICT infrastructures in access networks with a download speed of at least 40 Mbit/s and an upload speed of at least 5 Mbit/s in areas of Croatia that are currently un- or underserved with such broadband infrastructure (white NGA areas). The overall estimated (maximum) budget for broadband development is EUR 252 million, of which EUR 117.2 million should be funded by the European Regional development Fund (ERDF) and the remaining EUR 134.8 million by a European Investment Bank (EIB) loan. It is expected that private funds will amount to EUR 120 million during the implementation of the project. The annual budget is EUR 31.5 million for the period 2016-2023.

Croatia still has to fully transpose the Cost Reduction Directive[7] which could help to facilitate the broadband roll-out.

Connectivity is one of the key areas for Croatian citizens to enjoy the benefits of the digital economy, hence further efforts are needed. While measures to stimulate price competition further could address the issue of affordability, actions to ensure deployment and hence better coverage would be useful: from the still missing transposition of the Broadband Cost Reduction Directive, to better 4G coverage, and to the assignment of more spectrum for mobile broadband. In the context of broadband coverage, measures to stimulate investment in NGA networks by addressing the so-called "white areas" would contribute to closure of the rural vs urban digital divide.

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[7] Directive 2014/61/EU of the European Parliament and of the Council of 15 May 2014 on measures to reduce the cost of deploying high-speed electronic communications networks (OJ L155, 23 May 2014, p. 1)

2 Human Capital

2 Human Capital	Croatia		Cluster	EU
	rank	score	score	score
DESI 2017	**19**	**0.46**	**0.40**	**0.55**
DESI 2016	21	0.43	0.38	0.53

	Croatia				EU
	DESI 2017		DESI 2016		DESI 2017
	value	rank	value	rank	value
2a1 Internet Users % individuals	**71%** ↑ 2016	**22**	**66%** 2015	**22**	**79%** 2016
2a2 At Least Basic Digital Skills % individuals	**55%** ↑ 2016	**13**	**51%** 2015	**17**	**56%** 2016
2b1 ICT Specialists[8] % employed individuals	**2.7%** → 2015	**18**	**2.7%** 2014	**19**	**3.5%** 2015
2b2 STEM Graduates Per 1000 individuals (aged 20-29)	**16** → 2014	**18**	**16** 2013	**18**	**19** 2014

In the Human Capital dimension, Croatia is making progress. The number of Internet users increased over the past year and digital skills are steadily improving. 55% of Croatians have at least basic digital skills; this is close to the EU average of 56%. However, in 2016 only 2.7% of the workforce were ICT specialists. Moreover, the share of graduates in Science, Technology and Mathematics (STEM) amounts only to 1.6% of the 20-29 years old cohort.

Employers (mostly small firms specialised in computer programming, consultancy and related activities, and SME operating in various sectors, from advertising and market research to publishing and travel agencies), have reported difficulties in finding ICT specialists. The interest in STEM studies is rather low and characterised by a high dropout rate. How to attract more students to STEM studies, for example by awarding scholarships, is the subject of current discussions. Also a significant number of adult education institutions offer training courses (between 75 and 250 hours) for different kinds of IT posts. These courses also include specialisation courses to qualify as ICT specialist. Croatia is also planning, through the Skills guarantee, to train the low-educated population in order to acquire basic digital skills.

Croatia does not have a strategy in place to address its digital skills challenges. However, a series of projects, activities and initiatives is under way. Setting up a national coalition of relevant stakeholders, bridging the industry, education and employment worlds would help to further improve digital skills.

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[8] Historical data have been revised by Eurostat.

Highlight 2017:[9] e-Schools project

The Croatian e-Schools project aims to ensure that digitally competent teachers have use of adequate ICT equipment and that they develop e-content for digital education, meeting the needs of the labour market. Currently there are 150 schools included in the pilot project running until 2018, 29 of which are vocational schools and 21 *gymnasiums*. The schools are being equipped with at least one ICT classroom and receive equipment including laptops, tablets, presentation equipment, and wired and wireless local area networks. Learning scenarios for ensuring creative ICT use and digital educational content are being developed. Based on the experience of the pilot phase, a framework and strategy will be developed for implementing the concept in around 700 primary and secondary schools (50 % of all Croatian schools) during the period 2019-22.[10]

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[9] Highlight 2016: Dubrovnik Smart City In March 2016 Dubrovnik's first Smart Street at Obala Stjepana Radića opened, a pilot project developed in strategic partnership between the City of Dubrovnik and Hrvatski Telekom, IT company Cisco, and in collaboration with local partners. The Smart Street features public lighting with a multi-functional sensory network, and a variety of access technologies, from optical links to 4G and Wi-Fi networks. These technologies allow the residents and visitors of Dubrovnik to obtain free of charge Internet access within the pilot project's footprint, at high speed and throughput (50 Mbit/s). The Smart Street project also includes a traffic management solution that will use cameras to identify traffic violations, as well as innovative parking technology. The parking management system will automatically recognize vehicles and perform contactless charging of parking fees. It will also, both via a smartphone application and via digital panels, provide real-time information on the vacancy status of parking spots, not only in Dubrovnik's Smart Street, but all over the city. An important part of connected solutions in the Smart Street is the monitoring and control of environmental parameters that will provide extremely useful data for the city's environment. All solutions are connected with the city's legacy systems, and the Cisco Digital Platform will keep all collected data open for development of new solutions.

[10] Both stages of the project are co- financed from Structural Funds (both the European Regional Development Fund and the European Social Fund) of the European Union.

3 Use of Internet

3 Use of Internet	Croatia		Cluster	EU
	rank	score	score	score
DESI 2017	**14**	**0.50**	**0.39**	**0.48**
DESI 2016	13	0.46	0.37	0.45

	Croatia				EU
	DESI 2017		DESI 2016		DESI 2017
	value	rank	value	rank	value
3a1 News	91% ↑	2	89%	4	70%
% individuals who used Internet in the last 3 months	2016		2015		2016
3a2 Music, Videos and Games[11]	85%	8	NA		78%
% individuals who used Internet in the last 3 months	2016				2016
3a3 Video on Demand[12]	17%	13	NA		21%
% individuals who used Internet in the last 3 months	2016				2016
3b1 Video Calls	45% ↑	14	42%	14	39%
% individuals who used Internet in the last 3 months	2016		2015		2016
3b2 Social Networks	69% ↑	14	64%	18	63%
% individuals who used Internet in the last 3 months	2016		2015		2016
3c1 Banking	53% ↑	20	47%	19	59%
% individuals who used Internet in the last 3 months	2016		2015		2016
3c2 Shopping	45% ↑	21	44%	23	66%
% internet users (last year)	2016		2015		2016

In terms of the propensity of individuals to use Internet services, Croatia made progress over the last year, but fell back from rank 13 to rank 14. This is still the dimension where Croatia scores best and above the EU average. Croatian Internet users read news online (91%, 2nd in Europe), listen to music, watch videos and play games online (85%, 8th rank), watch films (17%) and make video calls over the Internet (45%). They use social networks (69%) and use online banking (53%) and use Internet for online shopping (45% of Internet users).

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

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

4 Integration of Digital Technology

4 Integration of Digital Technology	Croatia		Cluster	EU
	rank	score	score	score
DESI 2017	**17**	**0.35**	**0.27**	**0.37**
DESI 2016	16	0.34	0.25	0.35

	Croatia				EU
	DESI 2017		DESI 2016		DESI 2017
	value	rank	value	rank	value
4a1 Electronic Information Sharing % enterprises	**29%** 2015	**20**	**29%** 2015	**20**	**36%** 2015
4a2 RFID % enterprises	**4.7%** 2014	**11**	**4.7%** 2014	**11**	**3.9%** 2014
4a3 Social Media % enterprises	**15%** → 2016	**19**	**15%** 2015	**17**	**20%** 2016
4a4 eInvoices % enterprises	**10%** → 2016	**22**	**10%** 2015	**18**	**18%** 2016
4a5 Cloud % enterprises	**16%** ↑ 2016	**9**	**15%** 2015	**8**	**13%** 2016
4b1 SMEs Selling Online % SMEs	**18%** ↓ 2016	**12**	**19%** 2015	**8**	**17%** 2016
4b2 eCommerce Turnover % SME turnover	**8.3%** ↑ 2016	**16**	**7.1%** 2015	**21**	**9.4%** 2016
4b3 Selling Online Cross-border % SMEs	**8.9%** 2015	**13**	**8.9%** 2015	**13**	**7.5%** 2015

Croatia over the last year made little progress in the dimension concerning the Integration of Digital Technology by businesses. Croatian enterprises are above average users of the Cloud and they take advantage of the possibilities offered by online commerce: 18% of SMEs sell online (above the 17% of the EU average). eInvoices on the other side are not very popular. 9.3% of Croatian enterprises are analysing big data from any data source (close to the 10% EU average) and the Digital Intensity score is medium (see Digital Scoreboard).

Croatia does not have a comprehensive strategy in place. Some funding is available under SME support programmes.

As digital technologies offer new ways to connect, collaborate and conduct business, they touch the core of all business functions and are challenging existing business models. In spite of the relative absence of national digitisation policies, Croatian companies are medium performers. It would therefore be even more beneficial for the Croatian economy if Croatia's businesses could benefit from a targeted digitisation strategy.

5 Digital Public Services

5 Digital Public Services	Croatia		Cluster	EU
	rank	score	score	score
DESI 2017	**26**	**0.36**	**0.43**	**0.55**
DESI 2016	25	0.32	0.42	0.51

	Croatia				EU
	DESI 2017		DESI 2016		DESI 2017
	value	rank	value	rank	value
5a1 eGovernment Users % internet users (last year)	23% ↑ 2016	21	21% 2015	22	34% 2016
5a2 Pre-filled Forms Score (0 to 100)	20 ↓ 2016	24	21 2015	22	49 2016
5a3 Online Service Completion Score (0 to 100)	61 → 2016	27	61 2015	24	82 2016
5a4 Open Data[13] % of maximum score	60% ↑ 2016	13	47% 2015	14	59% 2016

In terms of eGovernment, Croatia over the last year made some progress but fell back from rank 25 to rank 26 because other countries were progressing faster. The number of eGovernment users is slowly increasing but there has been no progress with the delivery of services. In terms of Open Data, Croatia made considerable progress over the last year and now scores slightly above European average.

Due to the political situation, there was not much governmental activity over the last year in terms of eGovernment.

Croatia now has a revised "e-Croatia 2020 Strategy"; the government plans to issue a revised eGovernment Action Plan. An important feature is the establishment of a *Shared Service Centre in the Cloud* which would coordinate and manage all ICT applications by various governmental institutions (2300 targeted public bodies to be included in the project). Croatia plans to develop further e-applications for citizens. The eBusiness tool for companies is available in a demo version but has not yet been approved and implementation is delayed.

Further development and implementation of the eGovernment strategy, including the eBusiness tool, have the potential to contribute to a flourishing eGovernment landscape and to reap significant cost savings in Croatia.

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