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From: Secretary-General of the European Commission,  
signed by Mr Jordi AYET PUIGARNAU, Director

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To: Mr Jeppe TRANHOLM-MIKKELSEN, Secretary-General of the Council of  
the European Union

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Subject: COMMISSION STAFF WORKING DOCUMENT Europe's Digital Progress  
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Delegations will find attached document SWD(2017) 160 final - PART 9/62.

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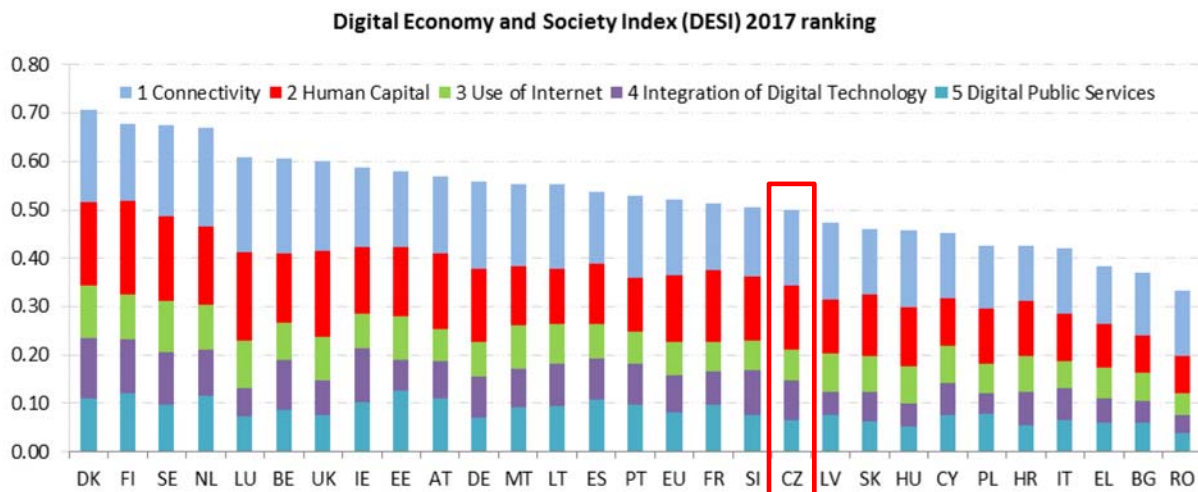
**COMMISSION STAFF WORKING DOCUMENT**

**Europe's Digital Progress Report 2017**

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

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)<sup>1</sup> with qualitative information on country-specific policies. It is structured around five chapters:

<b>1 Connectivity</b>	Fixed broadband, mobile broadband, broadband speed and prices
<b>2 Human Capital</b>	Internet use, basic and advanced digital skills
<b>3 Use of Internet</b>	Citizens' use of content, communication and online transactions
<b>4 Integration of Digital Technology</b>	Business digitisation and eCommerce
<b>5 Digital Public Services</b>	eGovernment



	Czech Republic		Cluster	EU
	rank	score	score	score
<b>DESI 2017</b>	<b>18</b>	<b>0.50</b>	<b>0.54</b>	<b>0.52</b>
DESI 2016 <sup>2</sup>	17	0.46	0.51	0.49

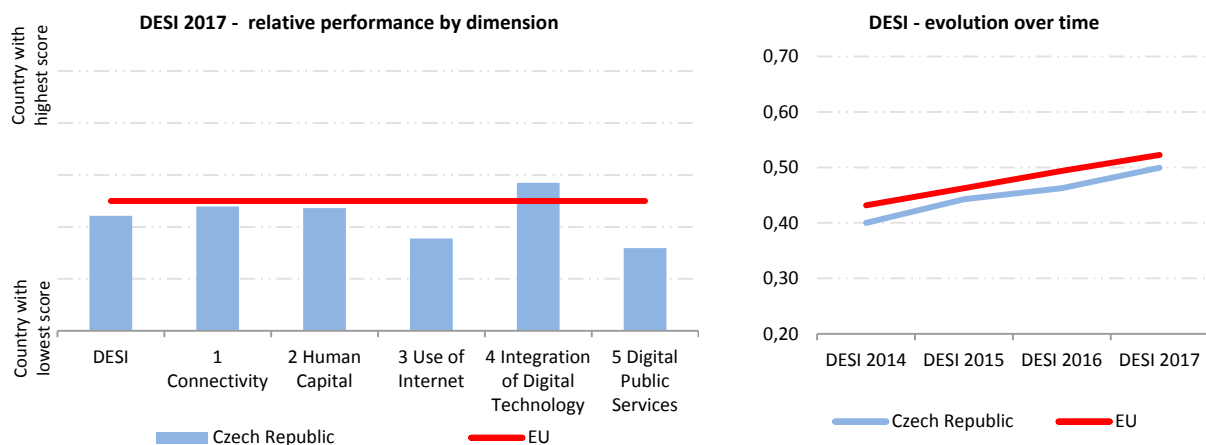
<sup>1</sup> <https://ec.europa.eu/digital-single-market/en/desi>

<sup>2</sup> 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>.

The Czech Republic ranks 18<sup>th</sup> out of the 28 EU Member States. Over the last year the country progressed in Digital Public Services, remained stable in Human Capital and worsened its ranking in the other dimensions. The country performs best in Integration of Digital Technologies by Businesses, mostly because many SMEs embrace eCommerce. The Czech Republic is well positioned in terms of 4G coverage (94%), but overall performance in the Connectivity dimension is stagnating. The country's greatest challenge is to improve the use of internet services, in particular for eGovernment, entertainment and social purposes.

The Czech Republic belongs to the Medium performing cluster of countries<sup>3</sup>.

In 2016 the Czech Republic updated its Action Plan on the "Development of Digital Market"<sup>4</sup>. The plan includes five priorities (eSkills, eCommerce, eGovernment, eSecurity and General Data Protection Regulation, sharing economy and open data) and the horizontal priority Society 4.0. The main novelty is the establishment of a coordination mechanism for the digital agenda under the responsibility of the Office of the Government. While the responsibilities remain with the competent Ministries, the coordinator's role is to manage government activities and communication among the Ministries and other central governmental institutions. This initiative is an important step to unify activities in the field of the digital agenda and signals that the digital agenda is a national priority.



<sup>3</sup> Medium performing countries are Latvia, Czech Republic, Slovenia, France, Portugal, Spain, Lithuania, Malta, Germany and Austria.

<sup>4</sup> <http://digidczec.eu/wp-content/uploads/2016/10/AP-na-web.pdf>

# 1 Connectivity

1 Connectivity	Czech Republic		Cluster	EU
	rank	score	score	score
DESI 2017	16	0.62	0.63	0.63
DESI 2016	13	0.61	0.60	0.59

	Czech Republic				EU	
	DESI 2017 value		rank	DESI 2016 value	rank	DESI 2017 value
<b>1a1 Fixed Broadband Coverage</b> % households	99%	↑	9	98%	14	98%
	2016			2015		2016
<b>1a2 Fixed Broadband Take-up<sup>5</sup></b> % households	71%	↓	16	76%	9	74%
	2016			2015		2016
<b>1b1 Mobile Broadband Take-up</b> Subscriptions per 100 people	77	↑	18	70	14	84
	June 2016			June 2015		June 2016
<b>1b2 4G coverage<sup>6</sup></b> % households (average of operators)	94%		9	NA		84%
	2016					2016
<b>1b3 Spectrum<sup>7</sup></b> % of the target	61%	↑	22	55%	23	68%
	2016			2015		2016
<b>1c1 NGA Coverage</b> % households	75%	↑	20	73%	20	76%
	2016			2015		2016
<b>1c2 Subscriptions to Fast Broadband</b> % subscriptions >= 30Mbps	36%	↑	17	30%	17	37%
	June 2016			June 2015		June 2016
<b>1d1 Fixed Broadband Price</b> % income	1.5%	↓	19	1.1%	11	1.2%
	price 2016, income 2015			price 2015, income 2015		price 2016, income 2015

The Czech Republic's overall performance in the Connectivity dimension has been stagnating relative to the EU average, with very limited progress since the previous year. While the fixed broadband full coverage target has almost been met, NGA coverage has not improved much, keeping the Czech Republic in 20<sup>th</sup> position across the EU. The relative increase of the fixed broadband price might explain the decreasing number of fixed broadband subscriptions.

On a more positive note, the country is well positioned in terms of 4G coverage (9<sup>th</sup> place) and progress in the assignment of harmonised spectrum is promising in this respect. Take-up is growing more slowly. The growth of subscriptions to fast broadband is achieved mainly in the (well-developed) urban areas. In the rural areas the lack of infrastructure is expected to

<sup>5</sup> Data based on consumer survey, shows a steep adjustment compared to last year's results

<sup>6</sup> This is a new DESI indicator measuring the average coverage of telecom operators' 4G networks.

<sup>7</sup> There is a decrease in most of the Member States due to the additional EU harmonisation of the 700 MHz band in April 2016.

be tackled through structural intervention co-financed with EU funds within the Operational Programme Enterprise and Innovations for Competitiveness (OPEIC).

This OPEIC was approved by the Commission in April 2015 to support NGA roll-out in rural areas where market mechanisms cannot be relied upon to deliver NGN infrastructure. European Structural and Investment Funds (ESIF) will support this OPEIC objective with approximately EUR 521 million (CZK 14 billion). Thanks to this programme, there should be 500 000 additional households with broadband access of at least 30 Mbps by 2023. The National Plan for the Development of Next Generation Networks was updated by the Government on 5 October 2016 in order to improve the effective deployment of this objective. The call for proposals is expected to be launched in the first half of 2017. The main beneficiaries will be providers of telecom networks and services.

More generally, however, the actual level of competition has hardly stimulated FTTB/FTTH<sup>8</sup> deployment. While ESIF funds are used for deployment of NGA in rural areas, it remains to be seen whether the current approach is sufficient to achieve Digital Agenda targets. The regulatory support to NGA deployment is not fully in place as the transposition of the Cost Reduction Directive is subject to significant delays. Finally, next to funding in areas of market failure, targeted policies and measures might also be useful in order to increase user demand.

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<sup>8</sup> Fiber laid all the way to the building/home.

## 2 Human Capital

2 Human Capital	Czech Republic		Cluster	EU
	rank	score	score	score
DESI 2017	13	0.53	0.57	0.55
DESI 2016	13	0.52	0.55	0.53

	Czech Republic				EU
	DESI 2017		DESI 2016		DESI 2017
	value	rank	value	rank	value
<b>2a1 Internet Users</b> % individuals	79% 2016	↑ 13	77% 2015	13	79% 2016
<b>2a2 At Least Basic Digital Skills</b> % individuals	54% 2016	↓ 14	57% 2015	11	56% 2016
<b>2b1 ICT Specialists<sup>9</sup></b> % employed individuals	3.7% 2015	↑ 10	3.4% 2014	14	3.5% 2015
<b>2b2 STEM Graduates</b> Per 1000 individuals (aged 20-29)	17 2014	→ 15	17 2013	15	19 2014

In the Human Capital dimension, the Czech Republic ranks 13<sup>th</sup>, a stable position compared with last year. In 2016, more people are online and use internet regularly compared to 2015. However, there is a slight decline in the level of the population's digital skills.

In an economy close to full employment and where demand for technical profiles is high, recruitment of ICT specialists is increasingly difficult: in 2016, 66% of enterprises<sup>10</sup> reported having had difficulties in hiring ICT specialists, the highest level in the EU and up from 47% in 2012.

The Czech Republic has in place a Digital Education Strategy aimed at opening education to new methods and ways of learning through digital technologies, improving students' competencies in working with information and digital technologies and developing students' computational thinking.

Beyond formal and informal training, digital literacy of Czech citizens is also promoted through the Digital Literacy Strategy for 2015-2020 so as to prepare people to exploit the potential of digital technologies for their lifelong development. The Action Plan of the Digital Literacy Strategy 2015-2020 was approved in 2016 and it details the thematic actions to be implemented by the end of 2020. These include equipping workers with the digital competences needed to enter the labour market and retraining employees facing changes due to digitisation and globalisation. Actions also target training of employees of SMEs and self-employed, civil servants, as well as employers for the introduction of teleworking and

<sup>9</sup> Historical data have been revised by Eurostat.

<sup>10</sup> Percentage of enterprises which recruited/tried to recruit personnel for jobs requiring ICT specialist skills. Source: European Commission, Digital Scoreboard.

remote work. The Digital Literacy Strategy, and in particular its strategic competitiveness goal<sup>11</sup>, counts on employers' active collaboration for the implementation of the measures.

On 24 October 2016 the "National Coalition for Digital Jobs" was signed by the Ministries of Education, Labour and Social Affairs, Industry and Trade the Office of the Government (vice-prime minister for Science, Research and Innovation and the coordinator for digital agenda) and the Czech ICT alliance (ICT sector representatives).

The successful implementation of the actions above will greatly benefit the country's human capital.

#### **Highlight 2017:<sup>12</sup> Společnost 4.0 (Society 4.0)**

The updated Action Plan on the Development of Digital Market includes the initiative "Society 4.0", which is an umbrella for the various sectorial strategies, e.g. in education, labour and industry. The emergence of the so-called "Fourth industrial revolution" will increasingly lead to significant changes not only in manufacturing but also in an intertwined way in the labour market, education and other areas. These changes are associated with the development of the Internet of things, the use of digitization and the Internet in all areas of economic and social life. Therefore innovation in each of the above sectors must be carried out simultaneously and in a coordinated manner and it is necessary to examine the issue in its social dimension, as "Society 4.0".

On 15 February 2017 the Government approved the establishment of the Alliance Society 4.0, whose main task will be to ensure coordination of agendas related to the Fourth industrial revolution. The Alliance will act as a coordination mechanism allowing the involvement of economic and social partners and representatives of the academic and scientific communities. At the end of June the Alliance Society 4.0 will submit to the Government an Action Plan for Society 4.0, which will include actions on specific areas of industry, education and the labour market.

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<sup>11</sup> The strategy has six strategic goals: Employment, Competitiveness, Social Integration, Family support, Electronic services of public sector, Support of the educational and learning system through digital technologies.

<sup>12</sup> Highlight 2016: Průmysl 4.0" (Industry 4.0). On 15 September 2015 the national initiative Industry 4.0 was adopted. This strategy, which takes stock of the baseline condition of the Czech Republic for the implementation of this latest industrial revolution, has been widened and now deals with issues such as technological assumptions and vision, applied research, standardisation, safety, labour market, educational system and regulatory environment. The long-term objective of this initiative is to maintain and boost the competitiveness of the Czech Republic. The first industrial revolution was the mechanization of production using water and steam power; the second introduced mass production with the help of electricity; the third, the digital revolution, led to the automation of production; the fourth industrial revolution consists of the intelligent networking of product development and production, logistics and customers.



### 3 Use of Internet

3 Use of Internet	Czech Republic		Cluster	EU
	rank	score	score	score
DESI 2017	22	0.42	0.45	0.48
DESI 2016	21	0.40	0.42	0.45

	Czech Republic				EU
	DESI 2017		DESI 2016		DESI 2017
	value	rank	value	rank	value
<b>3a1 News</b> % individuals who used Internet in the last 3 months	82% ↓	10	86%	6	70%
2016			2015		2016
<b>3a2 Music, Videos and Games<sup>13</sup></b> % individuals who used Internet in the last 3 months	72%	24	NA		78%
2016					2016
<b>3a3 Video on Demand<sup>14</sup></b> % individuals who used Internet in the last 3 months	4%	28	NA		21%
2016					2016
<b>3b1 Video Calls</b> % individuals who used Internet in the last 3 months	40% →	19	40%	18	39%
2016			2015		2016
<b>3b2 Social Networks</b> % individuals who used Internet in the last 3 months	55% ↑	26	50%	27	63%
2016			2015		2016
<b>3c1 Banking</b> % individuals who used Internet in the last 3 months	63% ↑	14	60%	15	59%
2016			2015		2016
<b>3c2 Shopping</b> % internet users (last year)	57% ↑	15	55%	15	66%
2016			2015		2016

In terms of the propensity of individuals to use Internet services, the Czech Republic over the last year made little progress and fell from rank 21 to rank 22. Although well above the EU average, in 2016 there were fewer Czech Internet users reading news online (82%) than in 2015. Czech internet users performed banking transactions online more than other Europeans (63% compared to 59%) and increasingly shopped online, although still not in line with the EU average (57% compared to 66%). They used internet for entertainment (music and video) and communication (social networks) less than the average European. Video on demand use was especially low, placing the country at the bottom of the ranking in the EU.

<sup>13</sup> Break in series due to a change in the Eurostat survey.

<sup>14</sup> Break in series due to a change of data source. New source is Eurostat.

## 4 Integration of Digital Technology

4 Integration of Digital Technology	Czech Republic		Cluster	EU
	rank	score	score	score
DESI 2017	12	0.41	0.40	0.37
DESI 2016	11	0.37	0.37	0.35

	Czech Republic				EU
	DESI 2017		DESI 2016		DESI 2017
	value	rank	value	rank	value
<b>4a1 Electronic Information Sharing</b> % enterprises	30%	18	30%	18	36%
	2015		2015		2015
<b>4a2 RFID</b> % enterprises	1.3%	28	1.3%	28	3.9%
	2014		2014		2014
<b>4a3 Social Media</b> % enterprises	12% ↑	24	10%	23	20%
	2016		2015		2016
<b>4a4 eInvoices</b> % enterprises	13% ↑	18	12%	15	18%
	2016		2015		2016
<b>4a5 Cloud</b> % enterprises	10%	20	NA		13%
	2016		2015		2016
<b>4b1 SMEs Selling Online</b> % SMEs	26% ↑	4	23%	6	17%
	2016		2015		2016
<b>4b2 eCommerce Turnover</b> % SME turnover	21.7% ↑	2	16.8%	2	9.4%
	2016		2015		2016
<b>4b3 Selling Online Cross-border</b> % SMEs	11.8%	3	11.8%	3	7.5%
	2015		2015		2015

The Czech Republic over the last year made little progress in the dimension concerning the Integration of Digital Technology by businesses. However, this is the dimension where the country performs best. Czech enterprises increasingly take advantage of the possibilities offered by on-line commerce: one quarter of SMEs sell online, half of them cross border, and they are second in the EU for eCommerce turnover. However, RFID, use of eInvoices, social media and cloud is below EU average.

The Industry 4.0 initiative prepared by the Ministry of Trade and Industry was approved by the government in August 2016. The initiative maps the challenges of the Fourth Industrial Revolution and explores possible measures to address them. While the implementation plan is being defined, the principles of "Industry 4.0" are being already applied in a few big companies. In order to support SMEs to catch up with digital technologies, an open laboratory-testing facility will be established at the Czech Technical University (CTU), in collaboration with the German Research Centre for Artificial Intelligence (DFKI)<sup>15</sup>.

For an industrial country like the Czech Republic, Digital Technologies and the Fourth Industrial Revolution represent an opportunity and should be taken advantage of.

<sup>15</sup> In August 2016 representatives of the Czech Institute of Informatics, Robotics and Cybernetics at the CTU signed an agreement with DFKI for cooperation in this field.

## 5 Digital Public Services

5 Digital Public Services	Czech Republic		Cluster	EU
	rank	score	score	score
DESI 2017	22	0.44	0.59	0.55
DESI 2016	26	0.29	0.56	0.51

	Czech Republic				EU
	DESI 2017		DESI 2016		DESI 2017
	value	rank	value	rank	value
<b>5a1 eGovernment Users</b> % internet users (last year)	15% <span style="color: green;">↑</span>	26	12% <span style="color: green;">↑</span>	27	34%
	2016		2015		2016
<b>5a2 Pre-filled Forms</b> Score (0 to 100)	43 <span style="color: green;">↑</span>	15	29 <span style="color: green;">↑</span>	19	49
	2016		2015		2016
<b>5a3 Online Service Completion</b> Score (0 to 100)	77 <span style="color: green;">↑</span>	20	70 <span style="color: green;">↑</span>	22	82
	2016		2015		2016
<b>5a4 Open Data<sup>16</sup></b> % of maximum score	55% <span style="color: green;">↑</span>	17	23% <span style="color: green;">↑</span>	25	59%
	2016		2015		2016

This is the dimension where the Czech Republic has progressed the most, although it is still below average in all indicators: it ranks 22<sup>nd</sup> among EU countries. Online interaction between public authorities and citizens is one of the lowest in the EU: only 15% of Czech internet users actively engage in the use of eGovernment services, although this figure has improved. The increase in the use of eGovernment services suggests that measures taken to improve their supply are having a positive impact: the availability of pre-filled forms and the level of online service completion have indeed also increased.

The Czech government has launched in 2016 the 'Initiative 2020', which aims to make the Czech Republic one of the top 20 countries in Europe for the use of eGovernment services by 2020. The initiative - jointly run by the private sector and the Czech authorities - focuses on the promotion of existing eGovernment services and on support for the development of new services. Increased availability of eGovernment services is also one of the objectives of the Strategic Framework for the Development of Public Administration for 2014-2020. The evaluation report<sup>17</sup> indicated that some individual measures have not yet been initiated and most are still 'work in progress'. Introduction of the national e-ID, which should serve as key enabler for eGovernment services, is planned for January 2018.

Despite the progress in both demand and supply of eGovernment services over the past year, the performance of Czech Digital Public Services remains below EU average. In addition, the drawdown of available EU funds for the development of eGovernment services has been low so far. The actions put in place by the country to improve availability, quality and promotion of eGovernment services could contribute to improvements in this dimension.

<sup>16</sup> Change of data source. The historical data have also been restated. The new source is the European Data Portal.

<sup>17</sup> June 2016. <http://www.mvcr.cz/clanek/vystupy-strategickeho-ramce-rozvoje-verejne-spravy.aspx>