

DIGITAL SINGLE MARKET IN PRACTICE: Digitisation, employability and inclusiveness – the role of Europe



There are concerns that digitisation, in particular robots and artificial intelligence, will replace jobs and increase inequality. While the EU believes digitisation is an important driver for jobs and growth, it takes these concerns seriously. The work environment of many will change. Thus it is important to assist citizens in this transition.



According to a latest Eurobarometer survey **75% of Europeans** think that **digitisation has a positive effect** on the economy.

At the same time, **74%** also think that **digitisation replaces more jobs than it creates**.¹



Digitisation is not a choice but a necessity for European businesses and economies as a whole. It cannot be stopped but needs to be accompanied. Digitisation brings plenty of opportunities, but also repercussions, and above all change: some jobs will be replaced, new jobs will be created, and many jobs will be transformed.

According to a recent OECD paper, **9% of jobs can be automated**.²

Opportunities of digitisation

- Higher productivity, meaning lower prices and a higher standard of living
- Better products and more personalised services needing fewer resources
- Less physical efforts and dangerous activities

Challenges of digitisation

- New jobs do not go to the same people and the same regions where jobs are lost
- Workers will need to change jobs and adapt more frequently
- New forms of atypical and self-employment pose challenges to social security systems

Key Policies for Member States, accompanied by the European Union

- Active labour market policies, to ensure an adequate level of social protection
- Fiscal policies, to ensure that redistribution smoothens inequality
- Education and training, to ensure adequate skills to thrive in the digital economy

JOB CREATION

In 2015, nearly 8 million people in the EU were employed as ICT specialists. This represents 3.5% of total employment³. Digitisation creates many additional, well-paying new jobs for ICT specialists, but even more jobs in other fields of the economy. One recent example are drones to which are also linked hardware suppliers, insurance companies, event organisers, and other specific services.

Potential for **additional data workers in Europe: 1.3 million by 2020** (compared to 2015)⁴.

According to a popular World Economic Forum estimate, **65% of children entering primary school today will end up working in completely new job types** that don't yet exist.⁵

¹ Special Eurobarometer 460, 'Attitudes towards the impact of digitisation and automation on daily life'

² Arntz, Gregory and Zierahn (2016), "The Risk of Automation for Jobs in OECD Countries: A Comparative Analysis", OECD Social, Employment and Migration Working Papers, No. 189, Paris. <http://dx.doi.org/10.1787/5jlz9h56dvq7-en>

³ Eurostat press release 25 October 2016

⁴ IDC: European data market, <http://www.datalandscape.eu/study-reports>

⁵ "The future of jobs and skills" (World Economic Forum), http://www3.weforum.org/docs/WEF_FOJ_Executive_Summary_Jobs.pdf

JOB TRANSFORMATION

The nature of some jobs will change...	...some roles will go, others will be created...	...and new kinds of work may earn compensation.
<p>Predictive policing is already changing the nature of work in security services, from preventing domestic violence to detecting fraud and identifying hotspots for crime.⁶</p> <p>Shipping companies may increasingly automate long-distance transport of goods and shift their workforce to managing pickup and deliver goods over the last meters, with artificial intelligence.⁷</p> <p>While sports referees could in theory be automated,⁸ improved real-time data feedback in support of human arbiter seems the likeliest combination.</p>	<p>Automated medical diagnosticians are potentially more effective in checking for tumours than their human counterparts.⁹ This could result in less of a need for doctors who could better be used elsewhere. A new role for medical workers managing technologies and interacting with patients would be created.¹⁰</p> <p>Algorithmic search engines have already made many junior legal positions obsolete by automating document review for complex litigation.¹¹</p> <p>Driverless vehicles are very likely to displace a number of long-distance drivers, though a smaller number of new positions will be created to manage and troubleshoot these new networks.</p>	<p>As the value and application of personal data continues to expand, new “personal data marketplaces” are offering direct financial compensation to individuals giving advertisers and research institutions access to their data.¹²</p> <p>New initiatives help individuals become digital social entrepreneurs, sharing time and talent flexibly in new networks.¹³</p> <p>Online platforms have enabled experiments in local currency, which offer citizens a range of compensation for publicly useful tasks, useable locally in the form of discounted or free access to traditionally paid services.</p>

NEED FOR TRAINING

Training in digital skills is important, not only for the new generation. People in their 30s today will still work in 2040 and use e-services well into the 2060s. However, currently **training tends to benefit most those who need it the least** as it remains dependent on the type of contract: almost one in two employees on permanent contracts receive training compared to one in three with fixed contracts and one in five of self-employed¹⁴. And already well-educated workers are much more likely to participate in job-related training than low-educated workers.



37% of the European labour force does not have basic digital skills.¹⁵

40% of companies recruiting ICT specialists have problems finding candidates with the required skills.¹⁶



USEFUL LINKS

 #DigitalSkills

 #DigitalSingleMarket

 #InvestEU

6 Macauley, T. “How big data is changing the nature of policing from reactive to proactive,” ComputerWorldUK (February 23, 2017). Accessed online March 2017 <http://www.computerworlduk.com/data/how-big-data-is-moving-policing-from-reactive-proactive-approach-3655033/>.

7 Executive Office of the President of the United States (December 16, 2016), Artificial Intelligence, Automation, and the Economy. Accessed online March 2017 <https://obamawhitehouse.archives.gov/sites/whitehouse.gov/files/documents/Artificial-Intelligence-Automation-Economy.PDF>

8 Frey and Osborne (2013), *The future of work: how susceptible are jobs to computerisation*. Accessed online March 2017 http://www.oxfordmartin.ox.ac.uk/downloads/academic/The_Future_of_Employment.pdf

9 Conger, K. “Computers trounce pathologists in predicting cancer type, severity,” Stanford Medicine News Center (August 16, 2016). Accessed online April 2017 <https://med.stanford.edu/news/all-news/2016/08/computers-trounce-pathologists-in-predicting-lung-cancer-severity.html>

10 Executive Office of the President of the United States (December 16, 2016), Artificial Intelligence, Automation, and the Economy. Accessed online March 2017 <https://obamawhitehouse.archives.gov/sites/whitehouse.gov/files/documents/Artificial-Intelligence-Automation-Economy.PDF>

11 National Law Journal, “Number of Students Enrolling in Law School Basically Flat” (Dec. 2016). Accessed online March 2017 <http://www.nationallawjournal.com/id=1202774844249/Number-of-Students-Enrolling-in-Law-School-Basically-Flat?slreturn=20170327025644>

12 Nelson, P. “Three ways you can sell your own personal data,” Networkworld.com (November 2, 2015).

13 Presentation of Dr. Maurizio Teli (PIE News), DG-Connect Workshop, February 27, 2017.

14 http://ec.europa.eu/epsc/publications/strategic-notes/future-work_en

15 Eurostat

16 Eurostat