

Digitalisation

LEVERAGING THE OPPORTUNITIES OF DIGITALISATION IN GERMANY

- ▶ Fully reaping the opportunities of digitalisation is essential to sustain productivity growth and improve living standards in Germany.
- ▶ Germany specialises in many technologically-advanced industries but the uptake of the most recent digital technologies is slower than in other OECD countries, particularly among small- and medium-size enterprises.
- ▶ Improvements in innovation policy, further investment in information and communication technology (ICT) infrastructure and skills, addressing gaps between urban and rural areas, as well as supporting labour and social policies are essential to leverage the opportunities from digitalisation.
- ▶ As digitalisation cuts across different policy domains and government levels, seizing its potential benefits increasingly depends on Germany's capability to strengthen a whole-of-government policy approach.

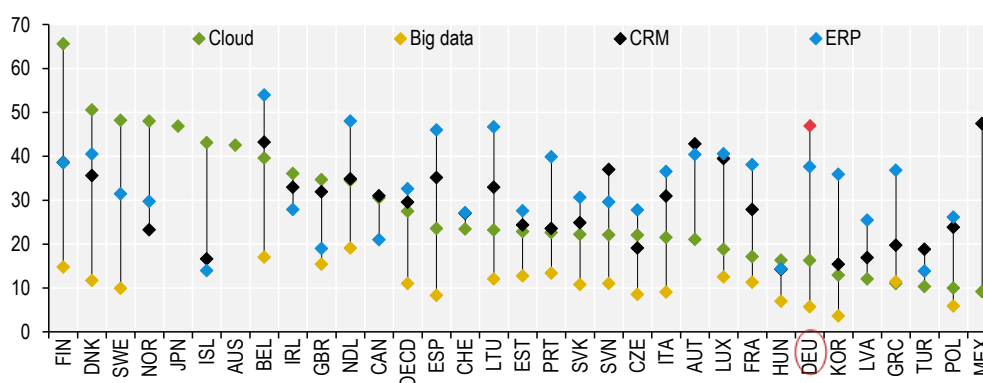
What's the issue?

Germany specialises in many technologically-advanced industries, including complex business services and high-tech and medium high-tech manufacturing. However, it has relatively slow uptake of cloud and big data technologies (see Figure), which are key for fully leveraging the possibilities of the Internet of Things, and its digital infrastructure and skills need improvement. The gap in connectivity and adoption of productivity-enhancing technologies is particularly

large between large firms and small- and medium-size enterprises (SMEs), as well as between large cities and rural areas. Tackling these issues and ensuring the digital transformation is underpinned by a strong innovation ecosystem would help Germany to successfully seize the opportunities offered by digital technologies and manage the accompanying changes in the world of work.

German firms are lagging behind in adopting the latest wave of digital technologies

Enterprises using selected ICT tools and activities, in percent of all enterprises with ten or more persons employed, 2017



Note: ERP stands for electronic resources planning and CRM for customer relationship management. Data on CRM and ERP refer to 2013 for Canada and 2015 for Korea and Switzerland. Big data refer to 2016 except for Korea (2015). Data on cloud refer to 2016 for Australia, Estonia, France, Germany, Ireland, Italy, Japan, Luxembourg, Netherlands, Sweden, Turkey and United Kingdom; 2015 for Korea and Switzerland; 2014 for Iceland; and 2012 for Canada and Mexico. For Japan, data refer to total businesses with 100 and more persons employed. For Switzerland, data refer to total businesses with 5 or more persons employed.
 Source: OECD (2018), ICT Access and Usage by Businesses (database), <http://oe.cd/bus> (accessed in May 2018).

Why is this important for Germany?

Broad-based improvements in living standards will not be possible without maintaining robust productivity growth, which is also crucial as population ages. But, as in many other countries, productivity growth has weakened. During 2006-16, it averaged 0.8% per year, compared to almost 2% in the preceding decade. Fully reaping the opportunities of the next production revolution and digitalisation will be essential to return to the pre-crisis trend. This requires policy action to improve innovation policy and firms' uptake of the latest technologies, particularly by SMEs, boost investment in information and communication technology (ICT) infrastructure and skills, improve connectivity in rural areas, as well as align employment, skills and social policies to smooth the digital transition.

Action on digital infrastructure is particularly urgent for Germany. Data are a key driver of digital transformation, data analytics, data-driven innovation, artificial intelligence and data-powered advances in production processes. The demand on high-speed infrastructures, especially fixed and wireless broadband networks, will increase as the Internet of Things connects more devices to networks, yet Germany currently has a low share of fibre connections in total broadband subscriptions. Taking fibre closer to businesses (and homes) will be critical to the future success of its high-tech manufacturing sector. Increasing the number of mobile broadband subscribers and the use of mobile data through a competitive environment in the provision of mobile broadband services, would also help boost the usage of mobile digital technologies amongst Germany's population.

Improving opportunities for life-long learning and better anticipating skills needs is also critical to Germany's ability to seize the digital transformation. Germany is among the countries with a higher-than-average share of jobs at high risk of automation and, like the rest of the OECD, has experienced job polarization. While overall participation in adult learning is average, the participation gap in adult learning between high-skilled and low-skilled adults is much larger in Germany than in most OECD countries. Tackling skills at multiple entry-points will be essential – from ensuring the education system equips students with solid literacy, numeracy and problem-solving abilities, as well as basic ICT skills and soft skills, through to anticipating changing skills needs to adapt curricula and guide students' choices, to improving the effectiveness of lifelong learning and training for adults.

What should policy makers do?

- ▶ Develop a whole-of-the government policy approach to digitalisation, by identifying interconnections and relationships across policy domains and different levels of government.
- ▶ Foster deeper and faster deployment of fibre in fixed networks through competition, such as that generated by municipal networks, particularly in smaller cities and rural areas.
- ▶ Improve the effectiveness of lifelong learning and training for adults by offering better incentives for workers and firms to re-skill and up-skill and making training opportunities widely available, particularly for low-skilled workers.
- ▶ Adapt social protection systems to the new world of work by ensuring social protection for non-standard and all self-employed workers. Possible avenues include untying benefits from contributions, offering voluntary coverage and incorporating non-standard workers in existing social protection schemes.



Further reading

OECD (2018), *Going Digital in a Multilateral World*, Report for the Meeting of the OECD Council at Ministerial Level, 30-31 May 2018, Paris. <http://www.oecd.org/mcm/documents/C-MIN-2018-6-EN.pdf>

OECD (2018), *Germany: Towards Stronger, Fairer and Greener Growth*, Better Policies, OECD Publishing, Paris. <http://dx.doi.org/10.1787/9789264300675-en>

OECD (2018), *The Future of Social Protection: What works for non-standard workers?* <http://www.oecd.org/social/Future-of-social-protection.pdf>