

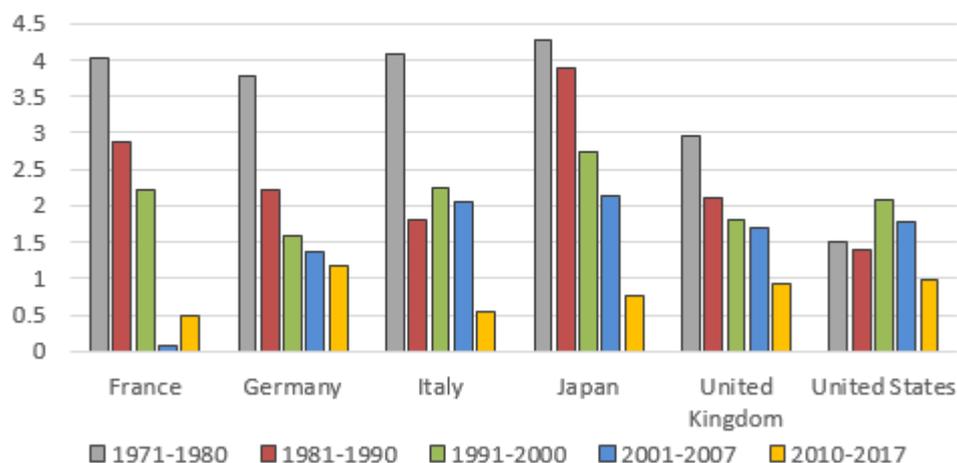
# Are digital technologies the new Holy Grail ?

By Stéphane Sorbe, Peter Gal, Giuseppe Nicoletti and Christina Timiliotis

Digital innovations are everywhere, in our pockets, cars and homes. However, while digital technologies seem to offer great potential to enhance firm productivity, productivity growth has slowed sharply in most OECD countries over the past two decades (Figure 1).

**Figure 1. Productivity growth has slowed down in major OECD economies**

GDP per hour worked, annual change in percent



Source: OECD Productivity Statistics

One explanation to this puzzle is that digital technologies are spreading out across firms less rapidly than we think.

Moreover, digital adoption has not been equally effective across all types of firms.

As more productive firms have tended to adopt digital technologies faster and more efficiently, their performance has improved relative to less-digitalised, less-productive firms, contributing to a widening gap in productivity performance. This has far-reaching implications, as it contributes to widening wage dispersion and income inequalities.

### Recent

OECD work focusing on EU countries suggests that policies have a key role to play to enable efficient adoption of digital technologies across firms, industries and countries, potentially yielding substantial productivity gains and helping less productive firms to catch up.

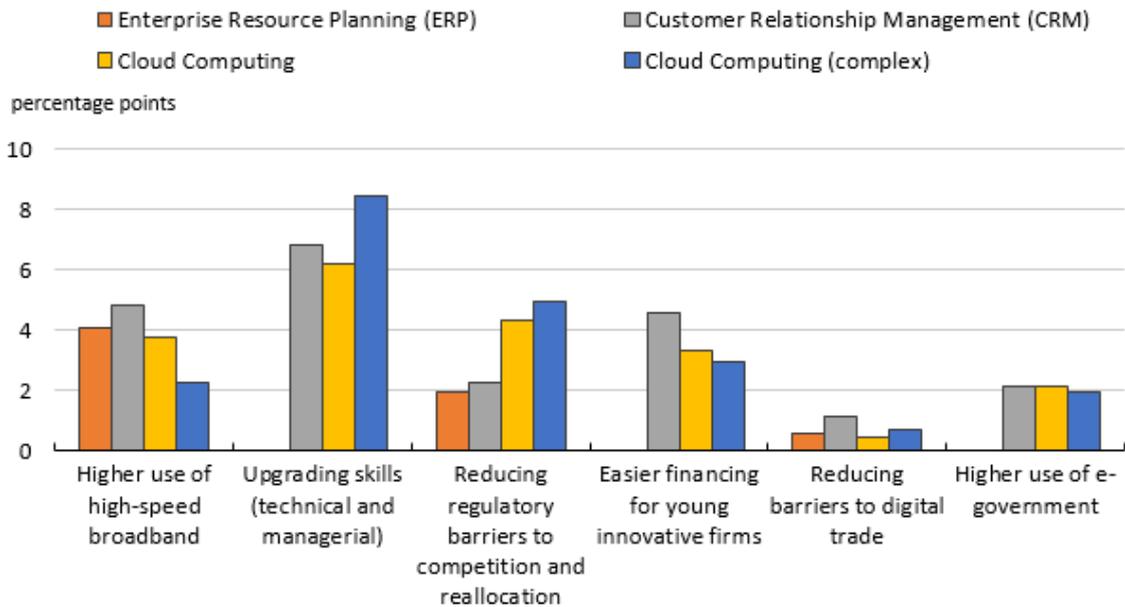
A first paper (Andrews et al., 2018) suggests that a set of structural and policy factors can affect firms' capabilities and incentives to adopt a selection of digital technologies (e.g. cloud computing, back and front-office integration software). These factors include the availability of enabling infrastructures (such as high-speed broadband internet), managerial quality and workers skills, and product, labour and financial market settings that enable an efficient reallocation of resources across firms. Importantly, there are strong complementarities between these factors.

A second paper (Gal et al., 2019) confirms that the adoption of digital technologies supports firm productivity. The benefits tend to be higher among more productive firms, presumably because they have more access to the technical and organisational skills that are crucial to adopt and use digital technologies efficiently. Indeed, the presence of skill shortages in an industry is found to reduce the benefits of digitalisation, mainly among the least productive firms. As a result, digitalisation may explain about half of the rising gap between best performing firms and the rest of firms observed over recent years.

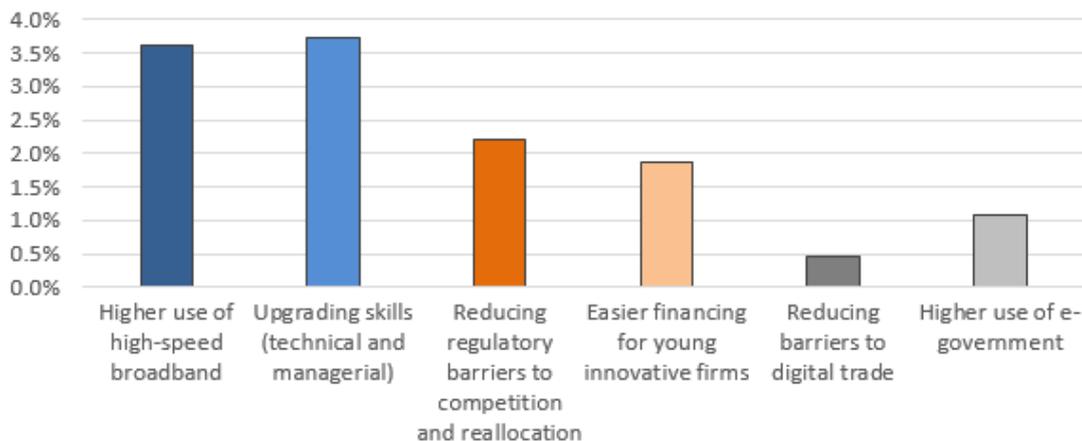
The main findings of these two papers are combined and summarised in Sorbe et al. (2019). The analysis confirms that improving policies in a range of areas can support digital adoption and thereby substantially lift firm productivity (Figure 2). Thus, if widely adopted and well used, digital technologies could indeed help overcoming the headwinds that drive the global productivity slowdown.

**Figure 2. A range of policies can support digital adoption and productivity**

**Panel A:** Effect on the adoption rate of selected digital technologies of closing half of the gap with best performing countries in a range of structural and policy areas. Average EU country



**Panel B:** Effect on firm productivity (through digital adoption) of closing half of the gap with best performing countries in a range of structural and policy areas. Average EU country, effect after 3 years



Source: Sorbe et al. (2019)

While policies to make the best of digital technologies should be tailored to country specificities, the following priorities emerge across the OECD:

- Implementing regulatory frameworks that support investment in broadband and pro-competition reforms in telecommunication sectors to enable

- broader and cheaper access to high-speed internet;
- Increasing participation in training – especially of low-skilled workers – and its quality, as well as promoting good cognitive, organisational and managerial skills;
- Enabling the efficient reallocation of labour and capital across firms and industries by reducing administrative burdens on start-ups, facilitating job transitions and improving the efficiency of insolvency regimes;

In addition to stimulating productivity, some of these policies can support inclusiveness to the extent that they help lagging firms to catch up, displaced workers to find other jobs and support wage growth. Upgrading skills is particularly important in this respect.

#### References:

Andrews, D., G. Nicoletti and C. Timiliotis (2018), "[Digital technology diffusion: A matter of capabilities, incentives or both?](#)", OECD Economics Department Working Papers, No. 1476, OECD Publishing, Paris

Gal, P., G. Nicoletti, T. Renault, S. Sorbe and C. Timiliotis (2019), "[Digitalisation and productivity: In search of the holy grail – Firm-level empirical evidence from EU countries](#)", OECD Economics Department Working Papers, No. 1533, OECD Publishing, Paris.

Sorbe, S., P. Gal, G. Nicoletti and C. Timiliotis (2019), [“Digital dividend: Policies to harness the productivity potential of digital technologies”](#), OECD Economic Policy Paper No. 26, OECD Publishing, Paris.