Highlights from the OECD Science, Technology and Industry Scoreboard 2017 - The Digital Transformation: Finland

Science, innovation and the digital revolution

- **Finland** has the second highest level of mobile broadband penetration with 147 subscriptions per 100 inhabitants, just behind Japan with 152 [Scoreboard fig. 1.2].
- Machine-to-machine (M2M) communication is part of the underlying infrastructure for the "Internet of Things". In 2007, **Finland** had a higher M2M penetration (the number of M2M SIM cards per inhabitant) than all G20 economies, just ahead of the United States [fig. 1.3 – see below].
- Inventors located in **Finland** accounted for 0.8% of AI-related patent applications during the period 2010-15, down from 1.6% in 2000-05 [fig. 1.7].
- The development of AI technologies is fairly concentrated. From 2012 to 2014, R&D-performing corporations based in Japan, Korea, Chinese Taipei and China accounted for about 70% of all AI-related inventions belonging to the top 2 000 corporate R&D investors worldwide, while US-based companies accounted for 18%. Firms headquartered in **Finland** accounted for 1.2%, higher than the shares of firms based in Canada, the United Kingdom, and Sweden [fig. 1.25 – see below].
- At 15 researchers per thousand in employment, **Finland** and Denmark had the second highest shares, behind Israel (17) but ahead of Korea and Sweden (both 14) [fig. 1.10].

Growth, jobs and the digital transformation

- **Finland** has the highest share (76.4%) of workers receiving firm-based training, just ahead of Denmark, the Netherlands and New Zealand [fig. 1.40 – see below]. Half of those are high skilled workers and a higher share of women employees received on-the-job training than men [fig. 1.43].
- While **Finland**, together with Denmark and Norway, had the highest ICT-task intensity of jobs in manufacturing in 2012, its stock of robots per thousand workers (6.2) corresponded to the OECD average and was significantly lower than that in Japan, Korea, Germany, Sweden and the United States [fig. 1.29].
- In 2014, 40% of jobs in **Finland's** business sector were sustained by foreign final demand [fig. 1.38].
- Women in **Finland** earn about 18% less than men on average, even after individual and job-related characteristics are taken into consideration - and about 14% less when skill differences are also taken into account [fig. 1.41].
- In common with other EU countries, **Finland** experienced markedly lower average multifactor productivity (MFP) growth between 2009 and 2015 (0.4%) compared to the pre-crisis periods (2001-07 and 1995-2001) which saw average MFP growth rates of 1.9% and 2.8% respectively [fig. 1.46].
- In 2015, the level of labour productivity in **Finland's** information industries was about 70% higher than in the rest of the business sector – above the average difference in OECD countries (60%) [fig. 1.45].

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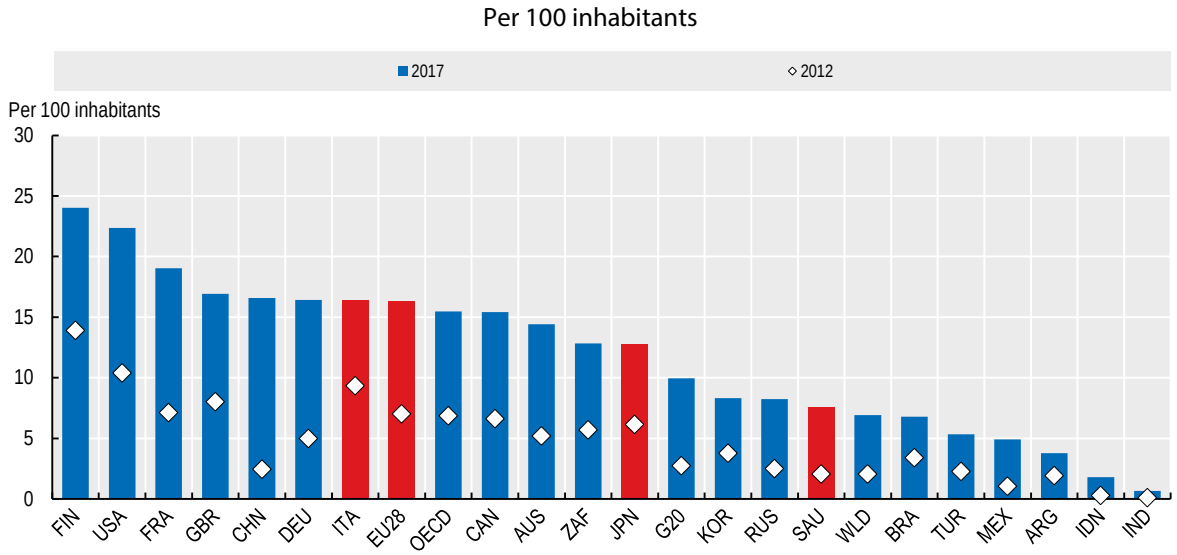
- 94% of persons aged 16-74 in **Finland** were Internet users in 2016, up from 77% in 2006 [fig. 1.57]; practically all 16-24 year olds are internet users, compared to 84% in the 55-74 year age group [fig. 1.58].
- Among OECD countries, **Finland** had the largest share of enterprises using cloud computing - 57% overall with 87% of large enterprises and 72% of SMEs using the technology [fig. 5.3.1 - see below].
- In **Finland**, women accounted for about 28% of tertiary graduates in natural sciences, engineering and ICT fields in 2015, below the OECD average of 31%. This share was mainly driven by graduates in science and engineering (23%) rather than ICT (4.5%) [fig. 1.59].
- In 2015, 11.4% of domestic scientific documents in **Finland** were in the world's top-10% most cited publications – about the same share as in 2005 [fig. 3.1.1].

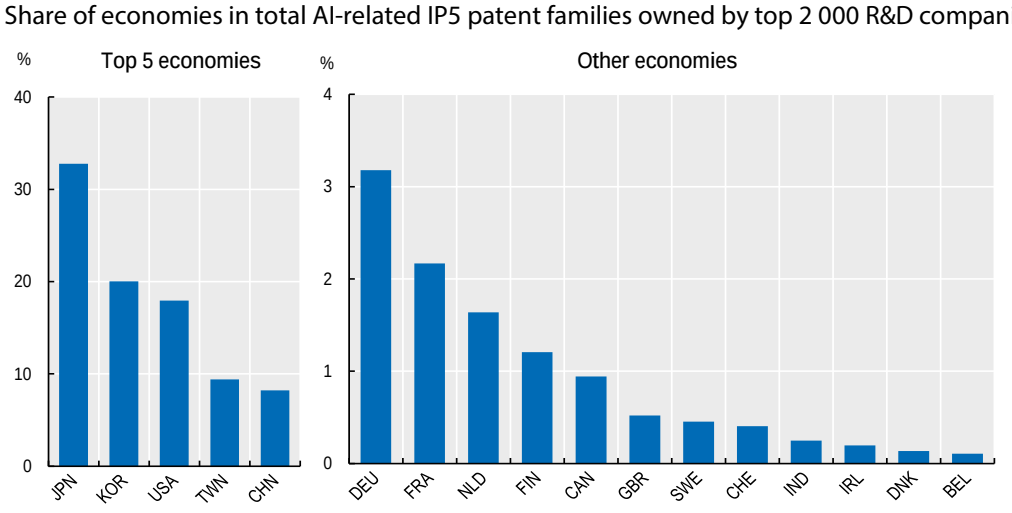
Figure 1.3 M2M SIM card penetration, Finland, OECD, World and G20 countries, June 2017



StatLink : http://dx.doi.org/10.1787/888933616902

Source: OECD Science, Technology and Industry Scoreboard 2017: The Digital Transformation, OECD Publishing, Paris, http://dx.doi.org/10.1787/sti_scoreboard-2017-en.

Figure 1.25 Artificial intelligence patents by top R&D companies, by headquarters' location, 2012-14

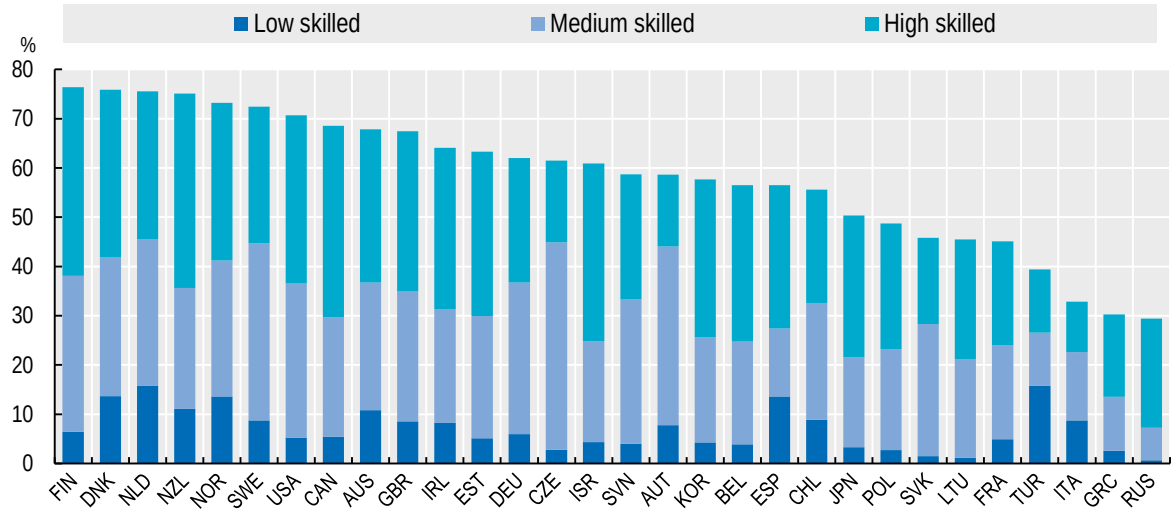


StatLink : http://dx.doi.org/10.1787/888933617320

Source: OECD Science, Technology and Industry Scoreboard 2017: The Digital Transformation, OECD Publishing, Paris, http://dx.doi.org/10.1787/sti_scoreboard-2017-en.

Figure 1.40 Workers receiving firm-based training, by skill level, 2012 or 2015

As a percentage of total employed persons



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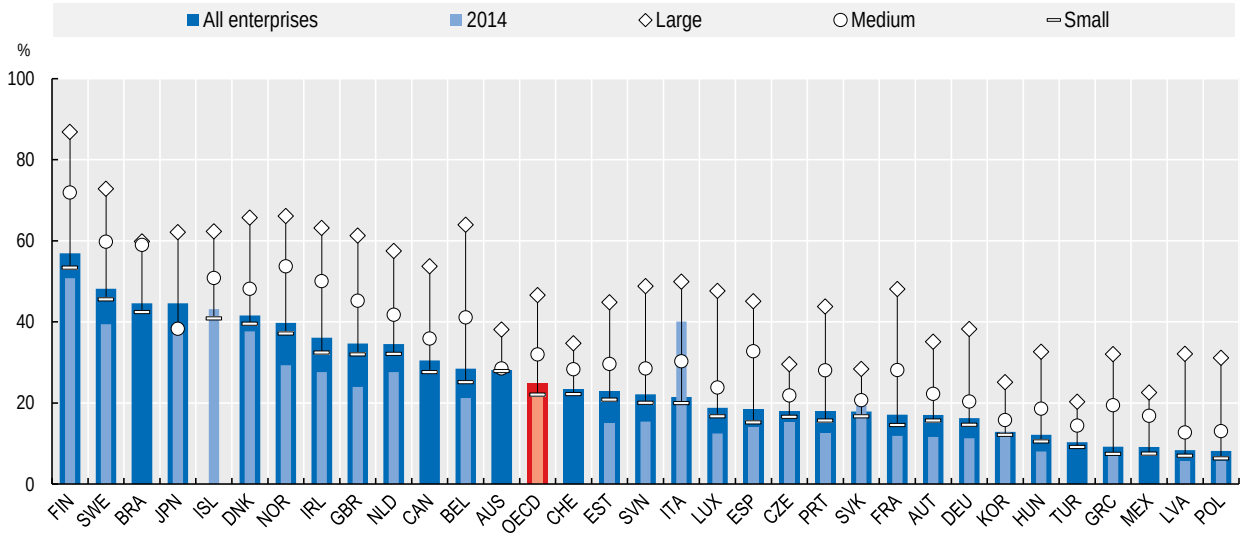
Source: OECD Science, Technology and Industry Scoreboard 2017: The Digital Transformation, OECD Publishing, Paris, http://dx.doi.org/10.1787/sti_scoreboard-2017-en.

Figure 5.3.1 Enterprises using cloud computing services, by size, 2016

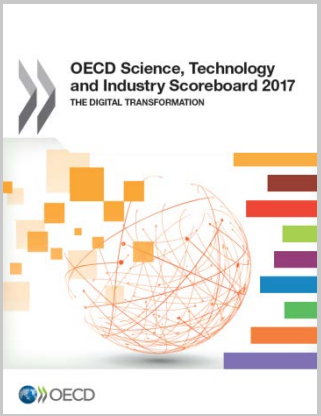
As a percentage of enterprises in each employment size class



StatLink : http://dx.doi.org/10.1787/888933619638

Source: OECD Science, Technology and Industry Scoreboard 2017: The Digital Transformation, OECD Publishing, Paris, http://dx.doi.org/10.1787/sti_scoreboard-2017-en.

The OECD Science, Technology and Industry Scoreboard 2017: The Digital Transformation



The 2017 edition of the Scoreboard contains over 200 indicators showing how the digital transformation affects science, innovation, the economy, and the way people work and live.

The aim of the STI Scoreboard is not to "rank" countries or develop composite indicators. Instead, its objective is to provide policy makers and analysts with the means to compare economies with others of a similar size or with a similar structure, and monitor progress towards desired national or supranational policy goals.

It draws on OECD efforts to build data infrastructure to link actors, outcomes and impacts, and highlights the potential and limits of certain metrics, as well as indicating directions for further work.

The charts and underlying data in the STI Scoreboard 2017 are available for download and selected indicators contain additional data expanding the time and country coverage of the print edition. For more resources, including online tools to visualise indicators, see the OECD STI Scoreboard webpage (http://www.oecd.org/sti/scoreboard.htm).

The OECD Directorate for Science, Technology and Innovation

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Discover DSTI at www.oecd.org/sti and the OECD's Going Digital project at www.oecd.org/going-digital.

Further reading

OECD (2017), *OECD Digital Economy Outlook 2017*, OECD Publishing, Paris. http://dx.doi.org/10.1787/9789264276284-en

OECD (2016), *OECD Science, Technology and Innovation Outlook 2016*, OECD Publishing, Paris. http://dx.doi.org/10.1787/sti_in_outlook-2016-en

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