

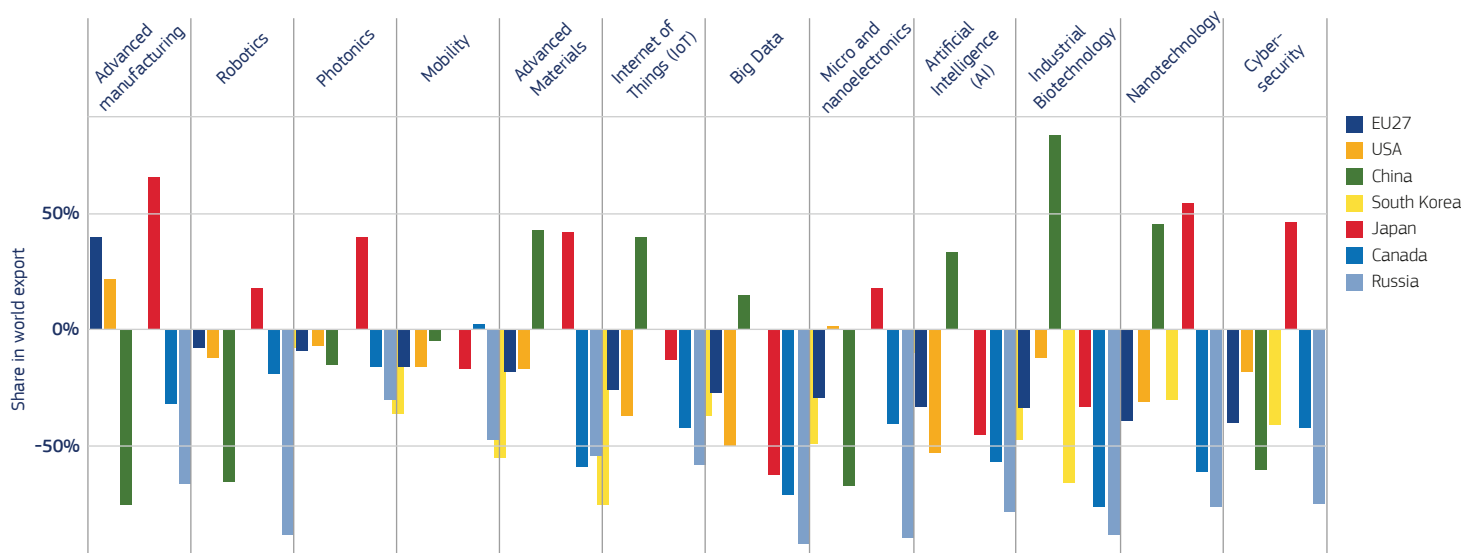
Advanced Technologies for Industry - Final Report on technology trends and technology adoption

Trends in the generation and uptake of advanced technologies, related entrepreneurial activities and skills

The future of European industries will depend on their capacities to transform themselves through technological breakthroughs and new business models. Strong industry is crucial not only to support economic recovery and the creation of jobs but also to produce goods and services that are environmentally sustainable and socially responsible.

In general terms, Japan and South Korea display a positive trade balance in goods relevant for advanced technologies. The United States, China and the EU27 have negative trade balances. The negative trade balance occurs when the total imports exceed the total exports during a given period.

Share of the world exports, 2018 (latest data available)



The competitive advantages of the EU27 are greatly challenged:



The EU27 holds the highest share (30.6%) of worldwide patent applications in Advanced Manufacturing technologies



China's contribution has a nearly tenfold rise in worldwide patenting since 2005, and it is often that European Union that feels the impact of this rise



Countries that have the highest number of startups include Germany, France and the Netherlands. When controlling for country size Estonia, Ireland and Belgium also stand out



The EU27 shares remain low in Big Data (14.7%) and Artificial Intelligence (16.2%), which is in line with its weakness in Micro and nanoelectronics inventions



The year 2020 witnessed an increasing level of investment deals in advanced technologies in the EU despite the pandemic



European tech firms had to increasingly look for US investors to back their capital growth. 9.9% of the workforce of EU27 headquartered AI companies are located in the US

The EU27 has a leading position in various advanced technologies such as Advanced Manufacturing and the Internet of Things (IoT) and has recently managed to considerably increase investment in AI. The challenges mentioned above form a risk for its competitive advantages and should be considered.

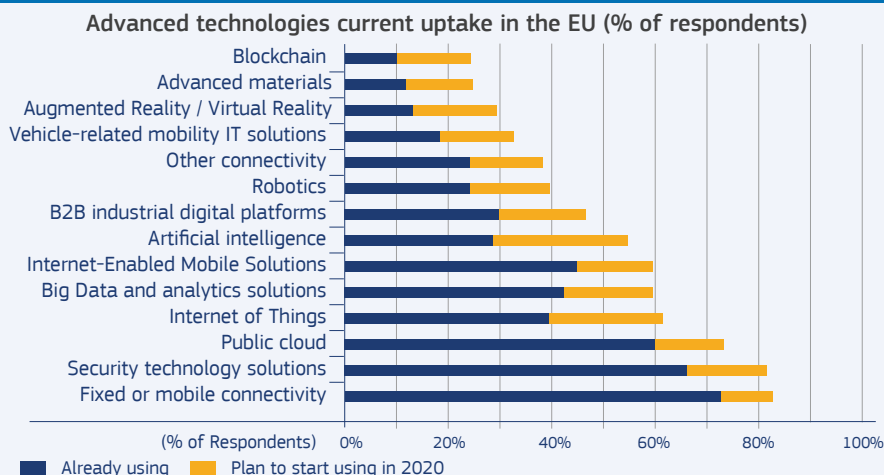
The adoption of advanced technologies in 2020 has increased since the previous year, despite the economic crises and contingency measures slowing down progress

Specific technologies are playing a crucial role in reigniting European industries' return to growth, AI and IoT are particularly under the spotlight.

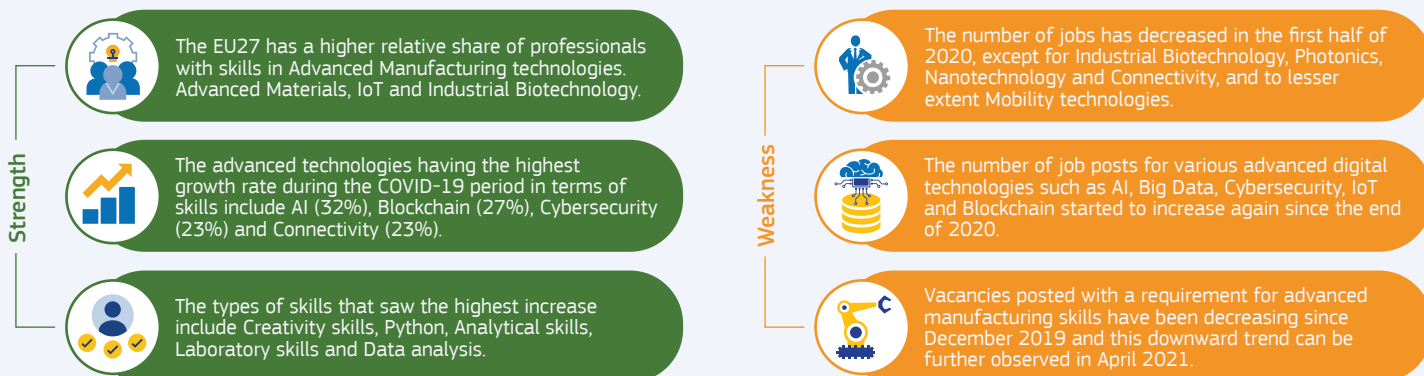
Technology uptake varies according to the size of the organisation and the industry concerned.

The need to improve efficiency and to innovate in business models are the main drivers of adoption of advanced technologies.

The main business units driving technological change are the Information Technology (IT) functions and operations.



Regarding necessary skills associated with advanced technologies, the EU27 shows strengths in advanced technologies driven by science and engineering



About the Advanced Technologies for Industry (ATI) project

The ATI project – funded by the European Commission – supports the **implementation** of Europe's new growth strategy with a systematic monitoring of **technological trends** and reliable, **up-to-date data** on advanced technologies.



Final Report on technology trends and technology adoption assesses and interprets trends in the generation and uptake of advanced technologies, the related entrepreneurial activities and venture capital investment, the supply of and demand for skills and the digital opportunities for Europe.

Read the full Final Report on technology trends and technology adoption here:
<https://ati.ec.europa.eu/reports/eu-reports/final-report-technology-trends-and-technology-adoption>