

# Transforming the telecommunication sector with advanced technologies

## Sectoral Watch: Technological trends in the telecommunication industry

### The importance of the telecommunication sector

Connectivity is at the heart of our modern society and economy. It enables entertainment, communication, flexible working, remote schooling, and much more. Connectivity is the core product of the telecommunication industry.

Growth trends for both connections and telecommunication service market value are positive. The market for connectivity services is fairly mature and while data consumption increases very rapidly year on year, the associated revenue growth is small in comparison.

### Growth trends in application areas

Consumers typically use personal mobile connections, as well as household broadband connections that may include paid television services. Among businesses, governments and other organisations, telecom services remain critical for the operation of nearly all sectors, though the mix of services utilised varies. For example:

Nearly all organisations require core office network connectivity to enable communication between employees at different locations

Banking/investment companies use a wide range of network services to connect business sites and branches

Transport/logistics companies use low-cost mobile/ cellular/ satellite Internet of Things (IoT) solutions supported by real-time data and analytics to help optimise vehicle routing and detect anomalies

### Advanced technologies are playing a growing role in the operations of EU's telecommunication service providers

Telecommunications providers (telcos) face significant competitive pressures. Their major rivals have similar service offerings and value propositions for customers. These rivals have access to the latest technologies, like 5G mobile networks, that allow them to provide improved services.

Telcos are in a unique position to generate additional revenue as their networks play a critical role enabling the digital economy, as their assets and information can be used to power new initiatives such as connected cars. Telcos have different options to explore advanced technologies to save costs or generate revenue:

Savings can be generated by the deployment of 5G networks: it lowers cost of traffic transport and improves the efficient use of spectrum.

Artificial Intelligence (AI) is an example of an advanced technology that telcos are employing to better understand and even predict their client needs and preferences.

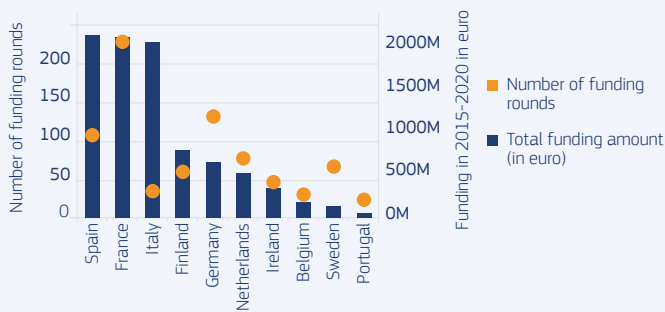
Mobile edge computing (MEC) can provide lower network latency, enabling new behaviour such as remote command and control, and cloud-centric smartphone applications.

IoT has proven to be a critical element in the digitisation efforts of enterprises in Europe and is an attractive proposition for telcos.

# The largest funding of telecommunication companies has been seed capital used to getting new businesses started, followed by Venture Capital (VC), helping business to strengthen

Private equity and venture capital investments are mainly located in Spain, France and Italy: 66% of the private investment went into firms headquartered in these countries.

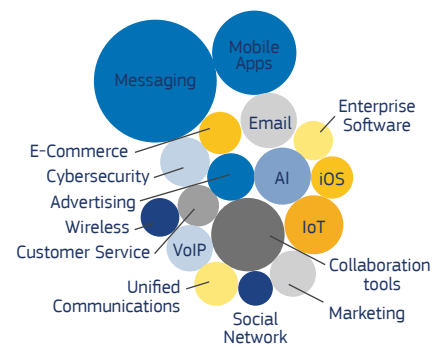
Private equity and VC investment in telecommunication (excluding M&A), 2015-2020



Source: Technopolis analysis based on Crunchbase and Dealroom data

The highest number of telecommunication startups is located in the Netherlands and Germany. Most common technology areas for startups are messaging, mobile applications and collaboration tools. These areas are related to rapidly evolving services delivered over the top or directly by telcos.

Type of startups per category (2015-2020)

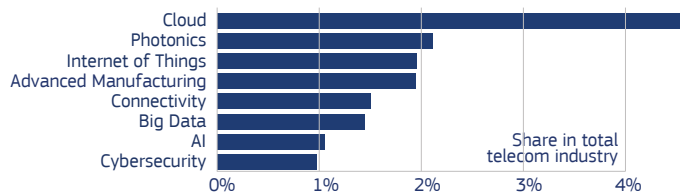


Source: Technopolis analysis based on Crunchbase and Dealroom data

## Since advanced technologies play a key role, related skills are required in the telecommunications sector

Within the telecommunications industry across the EU27, the share of professionals with technological skills related to cloud technologies is the highest.

Share of professionals with advanced technological skills in the telecommunication sector, EU27, 2020



Source: Technopolis Group based on LinkedIn analysis

## Challenges and opportunities for the telecommunications industry

**Challenges:** Telecom service providers face challenging economics and competitive pressures. They are racing to enable new technologies, launch new services and automate their systems faster than the service prices fall.

At the same time, costs saving is an imperative in the sector and telcos are steadily reducing headcount.

**Opportunities:** Telcos that are most effective in cost-cutting, service improvement and the development of new services stand to reap significant rewards, although it is the wider European economy that will benefit most of all from the availability of cutting-edge critical infrastructure and innovative new services.

## 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.



The **Sectoral Watch** analyses trends in the generation and uptake of advanced technologies, related entrepreneurial activities and skills needs in a number of selected sectors. It interprets data from a list of data sources compiled to monitor advanced technologies and their applications in industry across Europe and key competitor economies. It allows policy makers, industries and intermediaries to contextualise the collected data on advanced technologies specific for the industries in focus.

For more information, read the full Sectoral Watch report on Technological trends in the telecommunication industry here:

<https://ati.ec.europa.eu/reports/technology-watch/technological-trends-telecommunication-industry>



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