

# 5G as an opportunity for SMEs

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**Abstract** If properly prepared, the potential disruption in business models both in the telecommunications sector and in the various vertical markets where 5G technologies could be used in the future could prove to be a great opportunity for Small and Medium-Sized Enterprises.

## 1 The European 5G Public-Private Partnership

The 5G Infrastructure Public Private Partnership (5G PPP) is a joint initiative between the European Commission and European ICT industry (ICT manufacturers, telecommunications operators, service providers, SMEs and researcher Institutions). Started in 2014, the 5G PPP delivers solutions, architectures, technologies and standards for the ubiquitous next generation communication infrastructures of the coming decade. Its main challenge is to secure Europe's leadership in the particular areas where Europe is strong or where there is potential for creating new markets such as smart cities, e-health, intelligent transport, education or entertainment & media. The 5G PPP will reinforce the European industry to successfully compete on global markets and open new innovation opportunities.

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The 5G PPP has already been playing an essential role in the development of 5G technologies (Phase 1) and ensuring the feasibility of deploying those technologies in various vertical sectors (Phase 2). With the advent of Phase 3, starting in 2018 i.e. now, the European Commission and the European industry, along with academic organizations, are looking on the one hand at deploying 5G test infrastructures, and on the other hand at experimenting 5G-based solutions in various vertical sectors, with the objective to speed up the commercialization of 5G technologies and 5G-based solutions, thus ensuring European global leadership.

## **2 SMEs in the 5G landscape**

Small and Medium-sized Enterprises (SMEs) employ 93 million people in Europe, account for 67% of the total employment in the EU-28 non-financial business sector, and generate 57% of value added, again in the EU-28 non-financial business sector. From 2013 to 2016, EU-28 SME employment grew by 5.2%, almost 50% faster than overall employment in the EU-28 economy over the same period. Even in the EU-28 manufacturing sector, in which large enterprises are generally dominant, SMEs still account for 58% of total employment and 42% of total value added. In the business services sector, where most of the ICT work is performed nowadays, SMEs account for 82% of total employment and 76% of value added [1].

SMEs have an important role to play in developing, piloting and deploying 5G technologies, both to help with disruptive technologies and to address the needs of various vertical sectors. European SMEs have a great added value in providing innovative concepts and solutions that are having an important impact on the 5G value chain. They have the agility and flexibility required in a fast evolving technical and market landscape. This has been well understood within the 5G PPP, where a specific objective was set from the start, for SMEs to reach a 20% share in the programme. The 5G Infrastructure Association (5G IA), which represents the private side of the 5G PPP, also recognized the importance of SME involvement: since 2017, the Board of the 5G Infrastructure Association includes two SME representatives out of 11 members, instead of one previously.

The involvement of SMEs in the 5G PPP has been progressing along the Phases, almost reaching 20% in Phase 2. Now, with Phase 3 and the actual 5G experimentations starting, SME involvement should again increase, as there are many SMEs already present in vertical markets such as media, transportation, energy, smart cities, public safety, just to mention a few.

## **2 5G: a potential great opportunity for SMEs**

The deployment of 5G and its introduction in many vertical sectors could prove very disruptive not only for the stakeholders currently involved in the telecoms sector, but also for the players of the vertical sectors. Their business models might need to be reshaped to consider a completely new paradigm. This might prove to be an opportunity for European SMEs, who are by nature more flexible and may be less reluctant to change than larger incumbent players. This may be hopefully leading to large growth and global leadership for those SMEs who will be the first ones to take this path i.e. using 5G technology to develop new and innovative solutions and applications in the vertical markets they already know well, or to take advantage of their expertise in 5G to develop disruptive solutions to reach new markets.

This evolution needs to be planned now, to be best prepared when it is time for 5G-based solutions to be commercialized and deployed. Demonstrating the feasibility for SMEs to develop and deploy 5G innovative solutions in vertical markets should allow other SMEs to follow a similar path, eventually gaining European market share on the global scale. This will strengthen the chances that European SMEs achieve eventually sustainable growth and become key players in the new business environment created by the 5G paradigm.

Facilitating the future involvement of many European SMEs in the development of 5G related solutions and applications in various vertical sectors should be one of the key objectives of the 5G PPP and more generally of the public and private sectors.

If this is prepared properly, then there is a chance that European SMEs may prove to be major beneficiaries in the potential economic disruption brought by 5G, and the consequent deployment of innovative 5G-based solutions and applications in many vertical sectors, thus ensuring a European leadership in many vertical sectors.

## References

1. European Union. Nov. 2017. Annual Report on European SMEs 2016/2017. Focus on self-employment. SME Performance Review 2016/2017 (<https://www.eubusiness.com/topics/sme/sme-report-16-17>).