Spending on private networks will reach USD7.7 billion in 2027, but challenges to adoption persist

October 2022

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The number of private LTE/5G network deployments worldwide is growing rapidly. Indeed, Analysys Mason forecasts that the number of networks will grow at a CAGR of 65% between 2021 and 2027 to reach 39 000. Spending on these networks will rise to USD7.7 billion during the same period; this is a large figure in isolation, but appears small when compared to the spending on public network infrastructure. However, private networks could act as an important new revenue stream for the mobile industry in the longer term, and will also be an important bellwether of the success of 5G in the industrial sector.

This article is based on Analysys Mason's report, *Private LTE/5G networks: worldwide trends and forecasts 2022–2027*.

Enterprises' spending on private networks could become significant if suppliers address the challenges to adoption

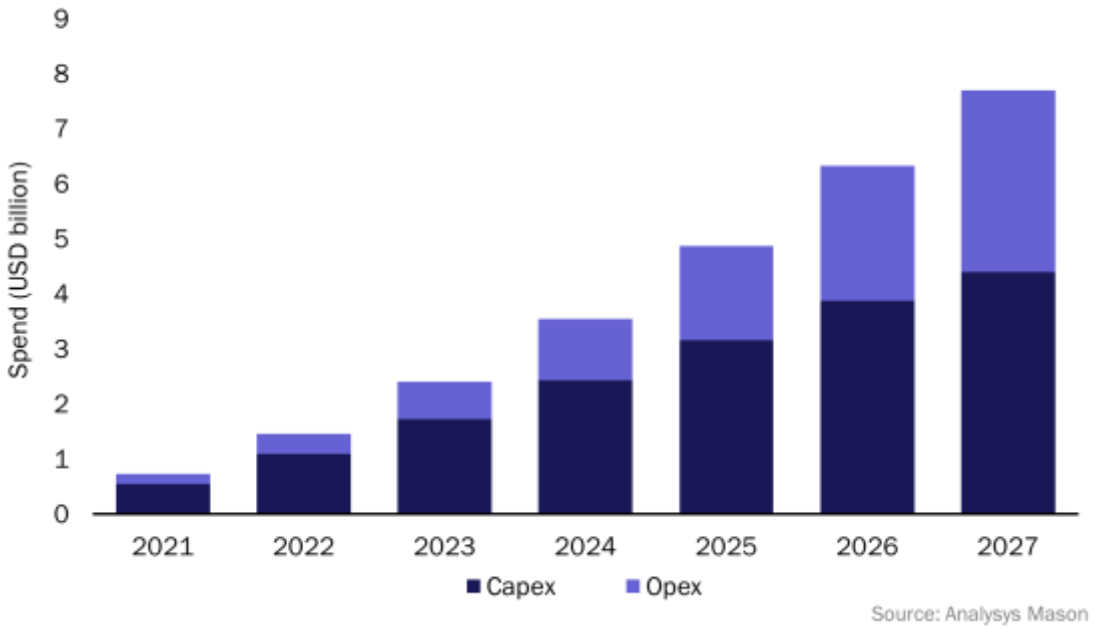
Enterprises' spending (capex and opex) on private LTE/5G networks will reach USD7.7 billion worldwide in 2027 and will grow at a CAGR of 48% between 2021 and 2027 (Figure 1). Most private network suppliers will not generate significant new revenue initially, but they should nonetheless address the private networks market as an important long-term opportunity. However, suppliers will need to develop strategies now to address the challenges to private network adoption in order to build the market. These include the following.

- Private network solutions are currently highly bespoke and complex; these are characteristics that limit the ability to scale. Early private network adopters are typically large corporations that have the resources to buy and operate complex solutions; smaller firms do not have these capabilities and will need networks that are simpler to buy and manage.

- The cost of private networks is currently prohibitively high (compared to Wi-Fi, for example) for the broader enterprise market.

- The awareness and understanding of private cellular networks is still low among enterprises, especially small and medium-sized enterprises (SMEs), and will take time to grow.

Figure 1: Private network capex and opex, worldwide, 2021–2027

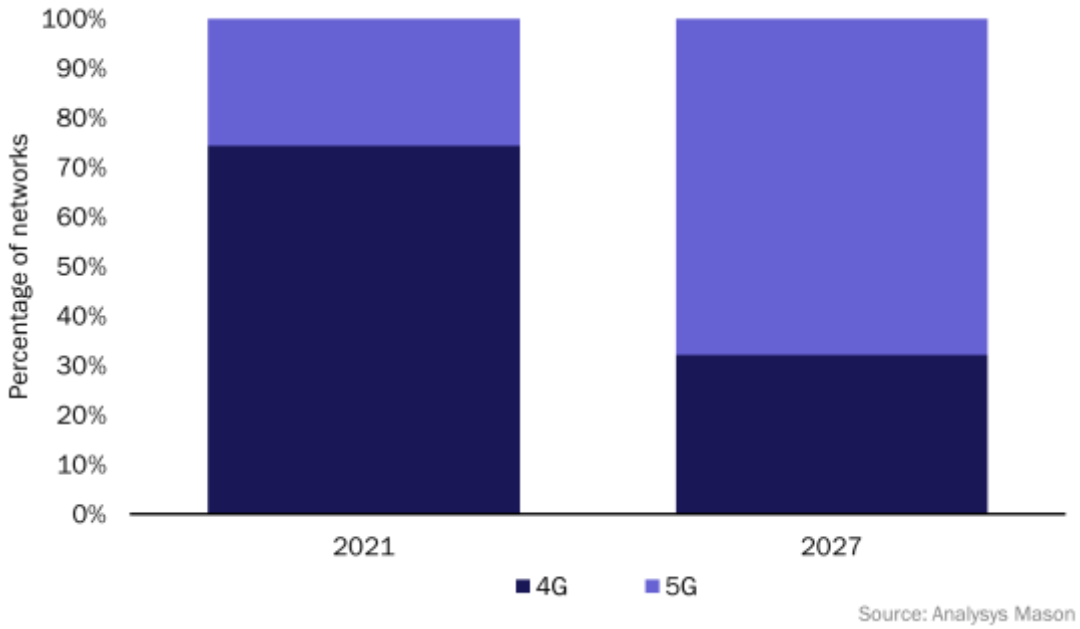


The current complex and expensive private network propositions are out of reach of most enterprises. Enterprises require simpler, affordable solutions with a service wrap that includes support for the network and the applications that will run on it. We believe that spending on private networks has the potential to grow even more quickly after the forecast period, but only if suppliers address these challenges to make their solutions accessible to a broader enterprise market.

The number of private networks that use 5G is growing, but from a very small base

Analysys Mason estimates that 26% of the 1900 live private networks in 2021 used 5G, but that almost half of all deployments will use 5G by 2024. We forecast that this figure will grow to two thirds of all private networks (of which there will be 39 000) by 2027 (Figure 2). For more discussion about the current private network deployments, see Analysys Mason's *Private LTE/5G networks tracker*.

Figure 2: Split of private network deployments, by technology, worldwide, 2021 and 2027



The manufacturing sector has been the leading early adopter of private 5G networks; we estimate that more than 50% of private networks in the sector used 5G in 2021 and that this figure will rise to almost 90% by 2027. Analysys Mason's research suggests that enterprises, especially those in the manufacturing sector, are deploying 5G because it can achieve unique results in terms of automation. Manufacturing firms are investing to support new applications in the long term and believe that 5G will be the most suitable technology in the future to address requirements such as low latency.

Nevertheless, the adoption of 5G for private networks is not homogenous worldwide. The majority (73%) of publicly announced private network deployments in North America are based on LTE.[1] Indeed, AWS's recent private networks offer is based on LTE, despite the 'Private 5G' product name. Many of the early use cases deployed using CBRS shared spectrum, in public sector education for example, do not require 5G capabilities. We estimate that the adoption of 5G in private networks is higher in Western Europe and emerging Asia–Pacific (mainly China) than in North America, and that 5G is used in 41% and 46% of private network deployments in these regions, respectively.[1]

The private networks market is an important bellwether of the success of 5G in industry

Telecoms vendors and operators alike are placing a significant emphasis on the new opportunities that 5G enables in the industrial sector, and private network solutions will be key to demonstrating the value of 5G for industry. However, there is still insufficient activity to address some of the barriers to adoption such as the higher cost of 5G relative to other network technologies and the complexity in deploying such networks, despite significant and growing interest in private 5G. Analysys Mason believes that there is scope for the private

[1] The forecast split is slightly different and reflects data sources that are not in the public domain. For information on publicly announced deployments, see Analysys Mason's *Private LTE/5G networks tracker*.

networks market to grow significantly more quickly beyond 2027, but such growth will depend on suppliers doing more to address the barriers to adoption.