5G Infrastructure - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2025 - 2030)

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Report description:

The 5G Infrastructure Market size is estimated at USD 14.56 billion in 2025, and is expected to reach USD 101.68 billion by 2030, at a CAGR of 47.51% during the forecast period (2025-2030).

Key Highlights
- The market is driven by government initiatives towards the deployment of 5G and advancement in new technologies like iot, smart cities, and many more, pushing the market players to develop new services/solutions to capture the market share.
- 5G technology offers a significantly lower latency rate, the delay between receiving and sending information. This decrease in end-to-end latency improves user experiences and creates new opportunities for innovative use cases. Also, there is a trend of Ultra-Reliable Low Latency Communications (URLLC), a subdivision of 5G network architecture that enables efficient scheduling of data transfers and caters to various advanced services across applications such as factory automation, the industrial internet, smart grid, autonomous driving, and or robotic surgeries. Hence, demand for lower latency rates among applications above is significantly boosting the growth of the global 5G infrastructure market.
- According to GSMA Intelligence Mobile Economy Report 2023, 5G will underpin future mobile innovation and services, building on ongoing deployments and adoption. 5G adoption will reach 17% this year, reaching 54% (equivalent to 5.3 billion connections) by 2030. The technology will add almost USD1 trillion to the global economy in 2030, spreading benefits across all industries. Such a huge rise in 5G adoption would drive the studied market.
- Further, in smart cities, 5G technology has the potential to enhance public security and safety significantly. Smart city systems can gather and analyze massive volumes of data from several sources, including video security cameras, intelligent traffic lights, and other iot devices, using the fast and responsive 5G network. For instance, Las Vegas is testing three pilot projects, with the government allocating USD 500 million to find ways to connect the entire city by 2025. The increase in the number of smart city projects undertaken by governments influences the demand for 5G infrastructure.

- The deployment of 5G networks requires significant infrastructure investments, including installing new base stations, small cells, and fiber optic cables. Compared to previous generations of cellular networks, 5G infrastructure deployment involves a denser network architecture due to its reliance on smaller cell sizes and increased network capacity. This densification increases the infrastructure requirements and overall capital expenditure, leading to high initial costs for network operators and service providers. This is expected to challenge the market's growth.
- Telecom operators expanded the offering of their 5G connection for several countries during the pandemic. For instance, in March 2021, Philippines-based Globe Telecom announced that it would accelerate its 5G Roaming rollout to other countries in the Middle East and Asia. Globe is set to open its 5G connection to visiting customers of Singtel of Singapore, CSL Hong Kong, and Ooredoo of Kuwait. In the post-pandemic era, the market is expected to grow further.

5G Infrastructure Market Trends

5G Radio Access Networks Expected to Hold Major Market Share

- RAN provides radio access network resources across wireless devices. Silicon chips in the core network, as well as the user equipment, enable the functionality of the RAN. A radio access network (RAN) encompasses base stations, antennas, macro cells, and small cells. 5G can be deployed in two ways, through a 5G core network or connecting a 5G RAN to a 4G network.
- The migration to 5G has become a critical factor, as it will enable higher bandwidths, and lower latencies, to name a few. RAN disaggregation enabled by cloud RANs and open interfaces allows carriers to benefit from a wider ecosystem.
- According to Ericsson, 5G subscriptions are expected to increase globally between 2022 and 2023, rising from over 0.55 billion to over 1.67 billion. Further, according to GSMA, the usage of 5G in GCC states will be slightly higher (16% customer 5G adoption) than the global average (15%) by 2025, mainly driven by governments and mobile operators with the support of mobile technology partners. Moreover, the number of 5G subscriptions is expected to reach 129.62 million in the Middle East and North African regions. Such a huge rise in 5G subscriptions would drive the market.
- Therefore, major leading carriers request information (RFIs) for RAN disaggregation and open solutions. This is because they can have the flexibility to choose the best solutions for the different parts of the RAN. For instance, edge servers for virtualized baseband units (BBUs) can also be used to run applications within the edge cloud and RAN to reduce latency. The amalgamation of 5G NR with a virtualized RAN architecture is expected to open up new opportunities for low latency and IoT services.
- The growing partnerships in developed and developing economies in Asia-Pacific are analyzed to bolster the market's growth rate. For instance, in December 2022, in support of the NTT DOCOMO Open Radio Access Network Open RAN expansion plans, SAMSUNG Electronics announced it would provide a range of 5G radios. In addition to its current 3.4GHz radio support in DoCoMo, Samsung is adding new radios with a 3.7Ghz, 4.5Ghz, and 28Ghz frequency range. The radios support NTT DoCoMo's open Radio Access Network (O-RAN) expansion and cover all of the Time Division Duplex (TDD) spectrum bands held by the operator. As Samsung expands its coverage in Japan, the ability of NTT DOCOMO to take advantage of its spectrum holdings will allow it to build a diverse 5G network and offer enhanced services for consumers and enterprises throughout Japan. In the commercial network environment of NTT DOCOMO, they have also carried out interoperability tests on these new radios with basebands from various suppliers.

Asia Pacific Expected to Dominate the Market

- The Asia-Pacific region is witnessing growing investment in 5G infrastructure. China is one of the largest investors in 5G technology, even leaving behind the United States; hence, one of the significant markets for 5G infrastructure vendors too. The growing effort by the Chinese government, telecom operators, and vendors to deploy 5G as quickly as possible is bringing more

investment into the market studied. The country also has some of the largest telecom 5G infrastructure providers, like Huawei. However, the US-China trade war has weakened the exports of some electronic segments in the last two years.
- According to the GSMA, by 2025, 40-50% of China's mobile users may be using 5G. The country is gaining more in terms of network convergence, network virtualization, and network slicing. The government also started to include standalone as part of its initial 5G deployment, owing to building a 5G network from the ground rather than evolving a 4G network into a 5G. This would enable the growth of the studied market in the region.
- The establishment of 5G is a high priority for the Japanese government. The Ministry of Internal Affairs and Communications (MIC) is the lead agency on 5G. Four companies submitted plans to MIC for the development of 5G networks. All four plans were approved based on certain conditions, including focusing on the needs of both urban and rural areas; maintaining appropriate and sufficient optical fibers to provide 5G service; and taking adequate cybersecurity measures, including measures against supply chain risks.
- According to the Ministry of Science and ICT (South Korea), As of March 2023, South Korea had approximately 29.6 million 5G subscribers. Such a huge number of 5G subscribers would drive the demand for the studied market and enable the market players to develop new solutions to cater to a wide range of needs of customers and capture the market share.
- The countries that are considered in the rest of Asia-Pacific are Vietnam, Thailand, and Indonesia, among others. The developments happening in the market, the rise in the initiatives towards smart cities, and the development of new technologies are expected to drive the demand for the studied market in the rest of the Asia-Pacific region.

5G Infrastructure Industry Overview

The intensity of competitive rivalry in the market studied is high, and it is expected to remain the same over the forecast period. The market studied comprises several global players vying for attention in a fairly contested market space. Major vendors include Cisco Systems Inc., Hewlett Packard Enterprise Development LP, MavenirSystems Inc., NEC Corporation, Nokia Corporation, Oracle Corporation, Qualcomm Technologies Inc., and many more. And many more are highly preferred 5G infrastructure providers across various end users and regions. The firm concentration ratio is expected to record higher growth during the forecast period because several firms are looking at this market as a lucrative opportunity to expand globally.

- February 2023 - Nokia extended its private 5G partnership with IT infrastructure firm Kyndrylfor an additional three years. The two companies announced the extension in a joint statement, noting that the pair will focus on developing and delivering LTE, 5G private wireless services, and Industry 4.0 solutions to clients worldwide.
- February 2023 - NEC Corporation and ADVA will jointly deploy time synchronization solutions for Telkom Indonesia, Indonesia's largest fixed network operator, to help the operator prepare its transport network to deliver time-sensitive 5G services across the country. New service monetization, such as providing ultra-low latency applications, is critical for mobile operators to build momentum in the 5G era. To meet the anticipated demands of mobile operators and partners using Telkom Indonesia's services, the company is enhancing the timing accuracy of its transport network.

Additional Benefits:

- The market estimate (ME) sheet in Excel format
- 3 months of analyst support

Table of Contents:

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