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Wireless Infrastructure Market Assessment, By Component [Hardware, Software], By Connectivity [5G, 4G & LTE, Satellite, Others], By Application [Remote Monitoring, Data Transmission, Threat & Surveillance, Entertainment, Media Broadcasting, Others], By End-user [Telecommunication, Automotive, Logistics & Transportation, Healthcare, Aviation, Military and Defense, BFSI, Others], By Region, Opportunities, and Forecast, 2017-2031F

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Abstracts

Wireless Infrastructure market is projected to witness a CAGR of 10.3% during the forecast period 2024-2031, growing from USD 180.28 billion in 2023 to USD 394.96 billion in 2031. Wireless infrastructure encompasses many components and solutions, including base stations, antennas, routers, and switches, among others. These elements collectively form the backbone of mobile communication networks, supporting voice and data services, as well as the ever-expanding ecosystem of the Internet of Things (IoT). The advent of 5G technology has further intensified the focus on wireless infrastructure, offering higher data speeds, reduced latency, and increased capacity to meet the demands of an increasingly connected world. The primary objective of network infrastructure is to enhance overall connectivity and connection performance, eliminating the necessity for wired connections among various devices and components. Additionally, wireless networking serves as a communication method for homes, telecommunication networks, and business installations, sidestepping the expensive process of installing cables within a building or establishing connections between different equipment locations.

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Rapid Proliferation of 5G Technology Contributing Significantly to the Market Growth

The deployment and adoption of 5G networks significantly drive the demand for wireless infrastructure. 5G, the fifth generation of mobile networks, commits higher data speeds, lower latency, and increased connectivity, enabling a wide range of applications, including IoT, augmented reality (AR), and autonomous vehicles.

The demand for enhanced mobile broadband services, coupled with the increasing number of connected devices, is pushing network operators and telecommunication companies to invest heavily in upgrading and expanding their wireless infrastructure. The deployment of 5G requires the installation of new base stations, small cells, and other network components, thereby driving substantial investments in the wireless infrastructure. Moreover, the increasing digital transformation across industries, rising data traffic, and the need for improved network performance are additional factors contributing to the growth of the wireless infrastructure market.

In February 2023, GSMA reported that over 90 fixed broadband service providers, predominantly mobile operators, introduced commercial fixed wireless services based on 5G across more than 48 countries. This signified that approximately 40% of global 5G commercial mobile launches worldwide incorporated a fixed wireless access (FWA) offering. In the United States, T-Mobile witnessed the addition of over half a million 5G FWA customers in the combined quarters of Q4 2021 and Q1 2022. T-Mobile aims to reach 8 million FWA subscribers by 2025, while Verizon has set a target of 5 million FWA subscribers for the same period. Notably, operators like Jio expressed intentions to connect up to 100 million homes in India to its 5G FWA network, indicating a substantial anticipated growth in the number of FWA users in the coming years.

Increased Utilization of Satellite Data in the Advancement of Smart Cities and Connected Vehicles

The escalating deployment of satellite data plays a pivotal role in advancing smart cities and connected vehicles, consequently contributing to the expansion of the wireless infrastructure market. In the context of smart cities, satellite data is harnessed for various applications, including urban planning, environmental monitoring, and efficient resource management. Satellite imagery provides valuable insights into city dynamics, helping planners optimize infrastructure development, traffic management, and environmental sustainability. This data is instrumental in creating interconnected systems that enhance city dwellers' overall quality of life.

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Moreover, the integration of satellite data is crucial in the evolution of connected vehicles. Advanced driver-assistance systems (ADAS) and autonomous vehicles rely on precise and real-time information, which satellite data can provide. From navigation and traffic management to vehicle-to-everything (V2X) communication, satellite-based data enhances the connectivity and operational efficiency of connected vehicles. As smart cities and connected vehicles become more prevalent, the demand for robust wireless infrastructure, capable of handling the data influx from satellite sources, is poised to grow. This trend underscores the symbiotic relationship between the expansion of satellite data applications and the flourishing wireless infrastructure market.

For instance, in June 2023, OneWeb, the global low earth orbit (LEO) communications network, introduced its 'Try Before You Buy' maritime service. This new offering allows maritime users to make bookings and experience the advantages of OneWeb's high-speed enterprise-grade flexible connectivity packages at sea, providing speeds exceeding 100mbps. With the successful deployment of 634 operational satellites in its constellation, OneWeb's network is now complete and fully operational up to 35 degrees latitude. The company is swiftly progressing with the finalization of ground stations and meeting operational requirements. Henceforth, the surging deployment of satellite data in the advancement of smart cities and connected vehicles is spurring the market's growth.

North America Dominates the Wireless Infrastructure Market

North America stands as a dominant force in the wireless infrastructure market, driven by several key factors, including its early and robust adoption of advanced technologies, particularly in the telecommunications sector. The deployment of 5G networks, essential for enhanced connectivity and communication, has been particularly aggressive in North America. Major players in the wireless infrastructure industry, including telecom operators and equipment providers, are headquartered in North America. This concentration of industry leaders has led to significant investments in research, development, and infrastructure deployment. The United States, in particular, has been at the forefront of 5G rollouts, with telecom giants investing heavily in expanding and upgrading their networks.

Moreover, the region has witnessed a substantial demand for high-speed data services, IoT connectivity, and the proliferation of smart devices, driving the need for robust wireless infrastructure. The presence of a tech-savvy population, coupled with a strong focus on innovation and digital transformation, further propels North America's

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dominance in the wireless infrastructure market.

In 2022, the U.S. wireless and mobile industry invested a substantial USD 11.9 billion in expanding capacity and coverage across the nation's wireless networks. This expenditure, however, does not encompass spending on spectrum, maintenance, or ongoing network operations. The comprehensive network operating expenses for U.S. wireless and mobile networks in the same year exceeded USD 46 billion.

Key statistics underscore the robustness of the U.S. wireless infrastructure industry at the close of 2022:

142,100 operational cellular towers.

Deployment of 209,500 macrocell sites, excluding small cells.

Operation of 678,700 macrocell sectors, excluding small cells.

452,200 active outdoor small cell nodes.

Utilization of 747,400 indoor small cell nodes, inclusive of private CBRS networks, DAS, small cells, and mm wave, as well as other licensed frequency bands.

Rising Data Security Concerns in Wireless Infrastructure Market Worldwide

The wireless infrastructure market is confronted with escalating data security concerns on a global scale. As wireless networks become more integral to daily life and critical infrastructure, the risk of cyber threats and data breaches intensifies. The interconnectedness of devices and the proliferation of sensitive data transmission amplify vulnerabilities. Malicious cyber attackers target wireless networks for various cyberattacks, including unauthorized access, eavesdropping, and denial-of-service attacks. The potential compromise of personal, corporate, or critical infrastructure data, posing serious threats to privacy, financial stability, and national security. Addressing these concerns requires robust cybersecurity measures, encryption protocols, and continuous monitoring. As the wireless infrastructure market evolves, stakeholders must prioritize cybersecurity to ensure the integrity, confidentiality, and availability of data transmitted across wireless networks.

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According to Check Point Software Technologies Ltd., in 2022, North America, Latin America, and Europe witnessed the most significant surges in cyberattacks compared to 2021, with a reported increase of 52%, 29%, and 26%, respectively. Among individual countries, the United States experienced a 57% rise, the United Kingdom saw a 77% increase, and Singapore reported 26% uptick in overall cyberattacks from the previous year. The education and research sector emerged as the most targeted industry in 2022, with an average of 2,314 attacks per organization each week, marking a 43% increase from the previous year. Following closely, the government and military sector experienced an average of 1,661 attacks per organization each week, a 46% surge from the previous year. The healthcare industry ranked third, with an average of 1,463 attacks per organization per week in 2022, signifying a 74% increase from the previous year. The top five most-attacked industries also included communications, with 1,380 attacks per organization per week in 2022 (a 27% increase over 2021), and the internet service provider/managed service provider (ISP/MSP) industry with 1,372 attacks per organization per week in 2022 (a 28% increase over 2021).

Government Initiatives

Various countries’ governments are taking initiatives to aid the growth of the global wireless infrastructure industry. For instance, in April 2023, the United Kingdom government introduced a new wireless infrastructure strategy to achieve 5G connectivity in all populated areas by 2030 and invest in the next wave of connectivity. This comprehensive strategy includes plans for 6G to position the UK at the forefront of the upcoming wireless technology generation. To support this initiative, a national mission has been established, backed by an initial funding of up to USD 130 million, hoping to secure the UK's leadership in future telecoms and 6G technologies.

Identified as one of the critical technologies for growth and job creation in the government's Science and Technology Framework, future telecoms play a pivotal role in the strategy. Key objectives encompass nationwide coverage of standalone 5G by 2030, extending 4G coverage to 95% of the population, and allocating USD 41.3 million (Pound 40 million) for the establishment of 8 to 10 '5G Innovation Regions' across the United Kingdom. The strategy reiterates the government's commitment to reaching 95% 4G coverage and providing standalone 5G to all populated areas by 2030, with an additional investment of USD 43.09 million to drive the adoption of innovative 5G-enabled services for businesses and the public sector.

Impact of COVID-19

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The COVID-19 pandemic has had a multifaceted impact on the wireless infrastructure market. While initial disruptions in the supply chain and workforce posed challenges, the pandemic also accelerated certain trends and created opportunities. The surge in remote work, online learning, and virtual activities during lockdowns heightened the demand for reliable and high-speed connectivity, driving investments in wireless infrastructure. The need for low-latency and high-performance applications, including telemedicine and remote collaboration, also accelerated the adoption of edge computing, influencing wireless infrastructure architecture. Governments and telecom operators recognized the strategic importance of robust communication networks during crises, leading to increased investments in telecom infrastructure resilience and expansion.

Key Players Landscape and Outlook

The wireless infrastructure market is expanding due to the increasing emphasis placed by companies worldwide on establishing advanced high speed networking infrastructure. Furthermore, the market expansion is exponentially facilitated by maritime, aviation, and automotive industries, evolving 5G technology, and significant investments by companies to enhance research and development (R&D) resources, engage in collaboration projects, bolster marketing efforts, and expand distribution networks. These factors collectively contribute to the rapid expansion of the market.

In December 2023, AT&T unveiled its strategy to spearhead the deployment of a commercial-scale open radio access network (Open RAN) in the United States, aiming to set an industry precedent. In partnership with Ericsson, this initiative aims to advance the efforts of the telecommunications sector and foster a more robust ecosystem of network infrastructure providers and suppliers. The collaboration is anticipated to result in an investment by AT&T of approximately USD 14 billion over the 5-year term of the contract with Ericsson. The Open RAN plan outlines AT&T's goal of having 70% of its wireless network traffic routed through open-capable platforms by late 2026. To achieve this, the company plans to fully integrate open RAN sites in collaboration with Ericsson and Fujitsu, with operations slated to commence in 2024.

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Contents

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6. WIRELESS INFRASTRUCTURE MARKET OUTLOOK, BY REGION, 2017-2031F

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*Companies mentioned above DO NOT hold any order as per market share and can be changed as per information available during research work

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