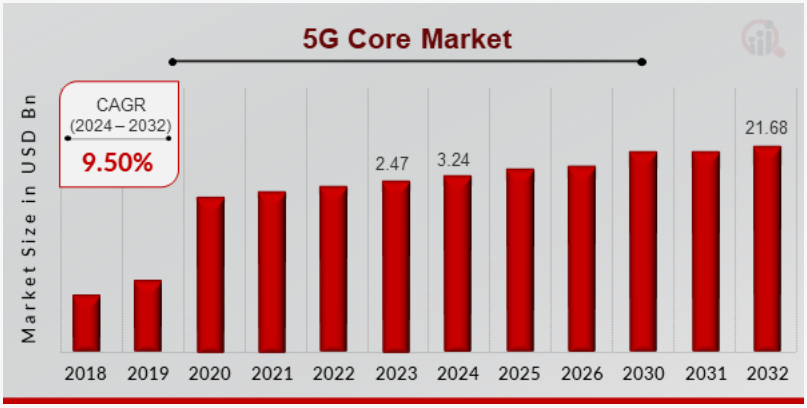
5G Core Market to Hit $21.68 Billion By 2032, Enabling Future Networks With 5G Core

5G Core Market is booming with rising demand for ultra-low latency, high-speed data, and scalable network infrastructure worldwide.



5G Core Market

LOS ANGELES, CA, UNITED STATES, April 10, 2025 /EINPresswire.com/ -- According to MRFR analysis, the global 5G Core Market is expected to register a CAGR of 9.50% from 2024 to 2032 and hold a value of over USD 21.68 Billion by 2032.

The 5G Core market is at the forefront of the global telecommunications revolution, driving unprecedented advances in connectivity, data speed, and network efficiency. As 5G becomes more mainstream, its core network, the backbone that handles data, mobility, and subscriber management, plays a critical role in shaping the overall performance and capabilities of the 5G ecosystem. The 5G Core architecture is designed with cloud-native technologies, offering high flexibility, automation, and scalability. It enables new business models and applications across various sectors, including healthcare, manufacturing, smart cities, automotive, and entertainment. As demand for ultra-low latency, massive machine-type communications (mMTC), and enhanced mobile broadband (eMBB) grows, the 5G Core market is expected to experience exponential expansion in the coming years. Additionally, the market is transitioning from traditional EPC (Evolved Packet Core) to standalone (SA) 5G Core solutions, accelerating the deployment of next-gen services such as private 5G networks and industrial automation.

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Market Key Players: Driving Innovation in 5G Core Solutions

The 5G Core market is highly competitive, with a blend of established technology giants and innovative startups shaping its landscape. Key players include,

- ZTE Corporation (China)
- Samsung Electronics Co.Ltd (South Korea)
- Affirmed Networks (US)
- Mavenir (US), NEC Corporation (Japan)

These companies offer software-defined, cloud-native 5G Core products designed for scalability, real-time processing, and seamless integration with edge computing platforms. Other notable contributors include Cisco Systems Inc., NEC Corporation, Mavenir, Affirmed Networks (a Microsoft company), and Hewlett Packard Enterprise (HPE). These vendors are focusing on innovation through AI-powered network analytics, containerized network functions, and orchestration tools. Strategic partnerships, mergers and acquisitions, and R&D investments continue to be major strategies adopted by these players to gain a competitive edge and cater to diverse market demands across the globe.

Market Segmentation: Diverse Offerings and Applications in 5G Core

The 5G Core market is segmented based on components, deployment models, end-users, and geography. By component, it is divided into solutions and services. Solutions include user plane function (UPF), access and mobility management function (AMF), session management function (SMF), network exposure function (NEF), network slice selection function (NSSF), and policy control function (PCF). The services segment encompasses consulting, integration, deployment, and support services. Deployment-wise, the market is segmented into cloud-based and on-premises models. Cloud-based deployment is gaining traction due to its cost-effectiveness, agility, and scalability. End-users of 5G Core solutions span telecom operators, enterprises, and government organizations. Among these, telecom operators account for the largest share, driven by rising investments in 5G infrastructure and network transformation. Enterprises are increasingly adopting 5G Core for private networks and Industry 4.0 use cases, particularly in manufacturing, logistics, and healthcare. Geographically, the market is segmented into North America, Europe, Asia Pacific, Latin America, and the Middle East & Africa.

Market Drivers: Factors Fueling the Growth of 5G Core Solutions

Several critical drivers are propelling the growth of the 5G Core market globally. Foremost among them is the growing demand for high-speed data services and low-latency connectivity across various sectors. The surge in mobile data traffic, fueled by video streaming, cloud gaming, and IoT proliferation, is placing greater demands on networks and necessitating robust 5G Core infrastructure. The adoption of Industry 4.0 technologies, such as smart factories and autonomous robots, is pushing industries toward private 5G networks, which require a flexible and programmable 5G Core. The rising focus on edge computing and the integration of network slicing to enable differentiated services is another significant driver. Moreover, governments and telecom regulators are aggressively supporting 5G deployments through policy frameworks, spectrum allocation, and investment incentives. As digital transformation becomes a strategic priority for enterprises, the need for scalable, secure, and reliable core network infrastructure

further boosts market demand.

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Market Opportunities: Unlocking Potential Across Emerging Use Cases

The 5G Core market presents substantial opportunities across multiple fronts. One of the most promising areas is the integration of 5G Core with AI and machine learning to enable intelligent automation, real-time analytics, and predictive maintenance in networks. Additionally, the rise of private 5G networks in sectors such as healthcare, mining, oil and gas, and transportation opens new avenues for specialized 5G Core solutions tailored to enterprise needs. The emergence of smart cities and connected infrastructure projects also offers lucrative opportunities, especially for vendors offering network slicing and ultra-reliable low latency communication (URLLC) features. Furthermore, partnerships between telecom providers and cloud service vendors (such as AWS, Microsoft Azure, and Google Cloud) are driving innovation in cloud-native 5G Core deployments. These collaborations are expected to unlock new service models like 5G-as-a-Service and Network-as-a-Service (NaaS), broadening the scope and accessibility of 5G Core capabilities for businesses of all sizes.

Restraints and Challenges: Navigating Technical and Market Complexities

Despite its strong growth prospects, the 5G Core market faces several challenges and restraints that may hinder its full potential. One of the primary challenges is the complexity involved in deploying and managing cloud-native 5G Core architecture. The transition from legacy systems to virtualized and containerized networks requires substantial investments, technical expertise, and changes in operational frameworks. Interoperability issues between multi-vendor components and standards compliance add further complications. Security is another pressing concern, as the expanded attack surface of 5G networks demands robust cybersecurity frameworks. Additionally, high initial costs, spectrum availability limitations, and regulatory hurdles, especially in developing regions, can slow down adoption. The slow rollout of standalone 5G networks in some areas due to budget constraints and lack of infrastructure readiness also poses a short-term barrier to growth. Moreover, concerns about energy consumption and sustainability in large-scale 5G Core deployments are gaining attention among stakeholders.

Regional Analysis: Global Adoption Trends and Leading Markets

Regionally, Asia Pacific dominates the 5G Core market, driven by aggressive investments from countries like China, South Korea, and Japan. China, in particular, has emerged as a global leader in 5G infrastructure development, with large-scale deployments supported by state-owned operators and favorable government policies. South Korea was one of the first countries to roll out standalone 5G Core networks and continues to be at the forefront of technological

innovation. North America follows closely, with the United States witnessing significant momentum in private 5G adoption across manufacturing, healthcare, and defense sectors. Major telecom operators in the U.S., such as Verizon, AT&T, and T-Mobile, are actively upgrading their core networks to support next-gen applications. Europe is also making steady progress, especially in Germany, the UK, and the Nordic countries, where regulatory support and industrial collaboration are enabling innovation. Meanwhile, Latin America and the Middle East & Africa are gradually entering the market, with pilot projects and limited-scale deployments underway, offering future growth potential as infrastructure and investment increase.

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Recent Development: Technological Advancements and Strategic Moves

The 5G Core market has witnessed a series of significant developments in recent months, indicating rapid technological progress and strategic alignment. Key vendors have launched enhanced versions of their 5G Core platforms with advanced features such as dynamic network slicing, AI-driven orchestration, and enhanced security modules. For instance, Ericsson introduced a dual-mode 5G Core solution combining EPC and 5GC in a single containerized platform to simplify operator transition strategies. Similarly, Nokia launched its latest cloud-native 5G Core with support for SaaS delivery models. Microsoft Azure and AWS have expanded their edge computing offerings, integrated with 5G Core functionalities to enable enterprise private networks. Strategic collaborations such as Samsung's partnership with Vodafone for deploying 5G Core in the UK and NEC's alliance with Rakuten Symphony for global 5G rollout also highlight the industry's collaborative momentum. These developments, combined with ongoing investments in R&D and innovation ecosystems, are set to shape the future of the 5G Core market in transformative ways.

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