

Smart Roads Market Size to Hit USD 145.34 Billion By 2032, at 26.24% CAGR | SNS Insider

The Smart Roads Market is expanding with demand for connected, data-driven infrastructure, improving traffic management, safety, and energy efficiency.

AUSTIN, TX, UNITED STATES, February 12, 2025 /EINPresswire.com/ -- Market Size & Industry Insights

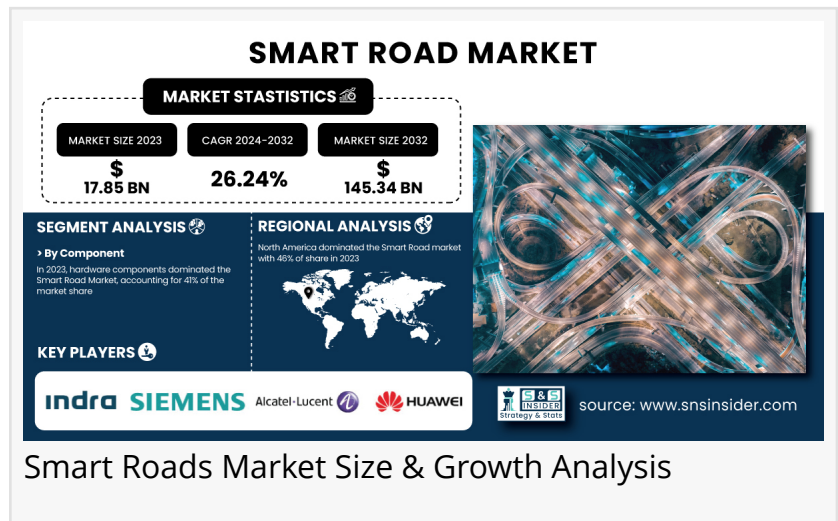
As Per the SNS Insider, "The [Smart Roads Market](#) size was valued at USD 17.85 billion in 2023 and expected to reach USD 145.34 billion by 2032 and grow at a CAGR of 26.24% over the forecast period of 2024-2032."

driven by the growing investments in smart infrastructure, increasing adoption of connected and autonomous vehicles, and government initiatives related to intelligent transportation systems. The use of IoT, AI, and sensor-based technologies will improve traffic management, road safety, and energy efficiency, driving the growth of the market even further. Urban regions striving to minimize congestion and emissions are driving a rapid growth in demand for real-time traffic analytics, smart signaling, and vehicle-to-everything (V2X) communication.

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SWOT Analysis of Key Players as follows:

- Indra Sistemas
- Huawei
- Siemens AG
- Alcatel Lucent
- LG CNS
- Cisco
- Kapsch TrafficCom



- Xerox Corporation
- Schneider Electric SE
- International Business Machines Corporation (IBM)

Key Market Segmentation

By Component, Hardware Dominating and Software Fastest Growing

The hardware segment led the market in 2023 and is projected to retain its dominance throughout the forecast period, driven by the widespread deployment of advanced sensors, cameras, RFID chips, and smart traffic management systems. The growing adoption of vehicle-to-infrastructure (V2I) communication and intelligent road monitoring technologies is fueling the demand for high-performance hardware solutions. Increasing investments in Smart Roads infrastructure, including embedded solar panels and wireless charging systems for electric vehicles, further strengthen the hardware segment's leadership.

The software segment is expected to register the highest CAGR from 2024 to 2032, owing to the advancements in artificial intelligence (AI), machine learning, and big data analytics. Intelligent road management software is gaining acceptance due to the increasing requirement for real-time traffic monitors, predictive maintenance and smart navigation solutions. The evolution of cloud-based solutions and IoT platforms is enabling the software segment to proliferate rapidly.

By Technology, Intelligent Transportation Management System (ITMS) Dominating and Communication System Fastest Growing

The Intelligent Transportation Management System (ITMS) segment dominated the market in 2023 and is expected to maintain its lead throughout the forecast period. This is motivated by the growing demand for improved traffic flow management, real-time monitoring, and the implementation of AI-enhanced predictive analytics to improve road safety and minimize congestion. Increasing investments on ITMS by governments and municipalities to enhance urban mobility and optimize transportation infrastructure.

The Communication System segment is projected to grow at the fastest CAGR over the forecast period 2024-2032, fueled by the rising adoption of vehicle-to-everything (V2X) communication, 5G connectivity, and IoT-based road infrastructure. A rapid adoption of advanced communication technologies in Smart Roads networks is being driven by the need for seamless data exchange among vehicles, traffic signals, and central control systems.

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By Deployment, cloud Dominating and On-Premise Fastest Growing

The cloud segment dominated the market in 2023 and is expected to maintain its lead throughout the forecast period, driven by its scalability, cost-effectiveness, and ease of deployment. Cloud-based Smart Roads solutions enable real-time data processing, remote monitoring, and seamless integration with IoT and AI-driven analytics, making them the preferred choice for governments and transportation authorities. The increasing adoption of smart city initiatives and intelligent traffic management systems further boosts the demand for cloud-based solutions.

The on-premise segment is projected to grow at the fastest CAGR over the forecast period 2024-2032, as organizations strive for enhanced control, security, and customization to manage Smart Roads infrastructure effectively. Increasing need for processing data locally in high security zones and critical transportation hubs are among some of the key factors driving the demand for on-premise deployments. Its growth is further spurred by advancements in edge computing and AI-powered analytics.

North America Leads the Smart Roads Market, While Asia-Pacific Emerges as the Fastest-Growing Region

The North America region dominated the Smart Roads Market in 2023 and is expected to maintain its lead throughout the forecast period. This dominance is driven by significant government investments in smart infrastructure, the rapid adoption of advanced traffic management systems, and the presence of leading technology companies. The region's strong focus on integrating AI, IoT, and vehicle-to-everything (V2X) communication into road networks further accelerates market growth. Additionally, initiatives such as the U.S. Smart City Challenge and Canada's investments in intelligent transportation systems contribute to North America's leadership in the market.

The Asia-Pacific region is projected to grow at the fastest CAGR over the forecast period 2024-2032, due to the rise in smart city projects and investments in intelligent transportation infrastructure. Advanced traffic management systems, AI-powered road-monitoring solutions and 5G-enabled Smart Roads networks are being adopted by China, Japan and India, fueling growth in the region.

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