

Industrial Edge Computing - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts 2019 - 2029

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Report description:

The industrial edge computing market size is estimated at USD 43.84 billion in the current year and is expected to reach USD 82.50 billion in the next five years, registering a CAGR of 13.48% during the forecast period.

Key Highlights

- The need for edge computing is growing among businesses because they understand the tremendous potential of edge computing in transforming the manufacturing industry. Edge computing enables organizations to leverage the power of IT and OT convergence, real-time data processing, and advanced analytics to drive efficiencies, reduce costs, and improve business outcomes in manufacturing.
- The increasing trend of factory automation, usage of IoTs, and the application of connected devices across various end-user industries such as automobile and logistics are creating a demand for the market.
- The industrial edge allows organizations to conserve network bandwidth by reducing the data sent to the cloud. Organizations can also minimize cloud computing and storage costs by processing data locally. When computing and storage are decentralized, there's less risk that data will be compromised or a cyberattack will take down the entire network. The industrial edge also combines IT with operational technology (OT), allowing complex data analysis and significant operation improvements. Real-time, event-driven interactions between OT and business systems help maximize industrial automation's value.
- Industrial edge computing also provides cost-reduction benefits. Transferring large data sets of temporary or unimportant data to a centralized cloud is cost-prohibitive, so keeping such data at the edge and discarding it after use lowers the cost. Edge computing also makes tracking individual devices or equipment implementation on a shop floor easy. This data will assist the manufacturer in optimizing equipment performance while decreasing costs and hazardous circumstances.
- Few organizations can afford to establish redundant high-end servers, storage, and networking equipment in remote locations. Instead, they may install required applications on commodity servers that don't have redundant components (such as power

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supplies and hard drives). Worse still, edge locations may not contain a server room or other environmentally controlled space for IT equipment. The lack of adequate power, redundancy, cooling, or ventilation can be a challenge for the industry.

-The automotive industry is set to recover from the loss of revenue from the COVID-19 years. Manufacturing companies are opting for new technologies available in the market, and the rising competition in these companies has fueled the demand for industrial edge computing in post-COVID times. Edge computing solution providers also produce new ideas and signature solutions in collaboration with manufacturers. These factors result in rapid and tangible cash flow benefits for industrial edge computing solution providers and manufacturers.

Industrial Edge Computing Market Trends

Oil and Gas sector is expected to grow at a higher pace

- The current uncertainty around the global market for oil and natural gas has boosted the highly competitive nature of the oil and gas industry. This has pressured companies to reduce their operating costs and capital expenditures. Also, the industry is transforming digitally due to the rise of technologies such as edge computing and the Internet of Things (IoT).

- The industry needs to catch up to other sectors, such as manufacturing when it comes to digitalization and automation, so the potential for IoT to be transformative remains to be explored. Companies must leverage this change to increase their productivity and cut costs, enabling them to stay competitive in today's market.

- As oil and gas prices remain volatile, companies are looking to companies like ZEDED, the leader in edge infrastructure orchestration, to leverage the power of data and increased mechanization to optimize processes and gain a competitive edge. Pulling convenient actionable insights from edge conditions like oil rigs, wells, and refineries can save millions by reducing equipment failure and safety issues and maintaining regulatory compliance. These conditions, however, can be very remote and may have limited on-site staff, so managing these challenges requires tools designed to simplify handling and securing edge infrastructure.

- Edge computing introduces cost savings by lowering the network bandwidth and reducing data center costs. Minimizing unplanned downtime through edge computing can also lead to significant payoffs. An MIT Sloan study found that a single day of downtime for a liquefied natural gas (LNG) facility can cost USD 25 million, with a typical midsize LNG facility going down about five times a year. Edge computing prevents costly shutdowns by reducing the processing burden on IT infrastructure.

- Offshore oil and gas structures produce an extraordinary amount of data daily. According to a Cisco report, an oil rig can create two terabytes of data daily. Still, due to the remote area of the offshore oil and gas industry, this data is only examined and leveraged for decision-making with support from edge computing resolutions.

- A recent blog from Schneider Electric underscores the significance of latency reduction as a compelling factor driving offshore organizations to adopt edge platforms. Zero-touch edge computing facilitates real-time data organization, enhancing communication, storage, and analysis capabilities. This, in turn, contributes to more informed and timely business-critical decision-making.

Asia-Pacific is anticipated to hold the significant share

- Asia's top emerging markets encompass India, China, the Philippines, Indonesia, and Vietnam. Additionally, countries like Malaysia, Singapore, and Thailand are attracting significant attention. These economies are undergoing substantial growth in their consumer classes, rapid technological adoption, and digital transformation. For instance, the Philippines is experiencing a 30% annual growth in its Internet economy through 2025. India is projected to have 1 billion smartphone users by 2026, and Google predicts that Vietnam will be one of the fastest-growing Internet economies in the next decade.

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- However, as more individuals across Asia's emerging markets simultaneously connect and access digital services, there is a growing strain on local networks. Public internet congestion has become a top concern for companies in emerging Asia, resulting in issues such as latency and jitter, which can adversely affect user experiences. In an era where consumers increasingly expect reliable and fast digital services anytime, anywhere, businesses failing to meet these expectations risk impacting their bottom line.
- Furthermore, increased government funding to enhance digitization and the growing demand for businesses to process and store data contribute to market growth. The rise of emerging IoT applications in smart cities generates vast amounts of data. The increasing need for cost-effective data analysis and processing near the data source has led to the adoption of cloud computing, driving segment growth.
- The development of multi-cloud platforms in Asia has spurred the growth of a high-skilled workforce in computer engineering. Businesses focused on digital tools and techniques, as well as technology-based collaboration between countries like Singapore and India in areas such as digital health, smart cities, and IT-based infrastructure, are examples of how edge computing is gaining traction in Asian enterprises. By using edge computing platforms, Asian organizations can alleviate infrastructure bottlenecks caused by the surge in consumers. Notably, Singapore's multi-cloud platform serves as a benchmark for its benefits to business organizations.
- For instance, in September 2022, Bharti Airtel and IBM partnered to deploy Airtel's edge computing platform. This initiative enables large enterprises across various industries, including automotive and manufacturing, to accelerate innovative solutions. Maruti Suzuki, India's largest carmaker, plans to use the edge platform to enhance efficiency and accuracy in quality inspections on the factory floor. By establishing this platform, Maruti Suzuki expects to improve quality control and ensure data security at the edge.
- Nife, as an organization, assists enterprises in building future business models that offer robust digital experiences with an added layer of security. Models based on edge computing platforms are rapidly scalable and possess a global scaling factor, which can result in cost savings when expanding into new offshore markets. These factors are significantly benefiting local edge computing enterprises, allowing them to compete effectively in multi-cloud services on a global scale.
- In response to increasing demand, companies often implement automation strategies to maintain high efficiency in their production environments. Consequently, compared to all three oil and gas streams, automation penetration is relatively high in the downstream sector.

Industrial Edge Computing Industry Overview

Its fragmentation and competitive nature characterize the industrial edge computing market. Currently, key players dominating the market include Siemens, ZEDED, General Electric Company, and Rockwell Automation, among others. Companies like General Electric (GE), renowned for their expertise in delivering edge computing solutions across various industries, including aerospace and manufacturing, hold substantial market positions. These vendors employ key competitive strategies, such as acquisitions, partnerships with industry players, and the introduction of new products and services. Notable recent developments in the market include:

In November 2022, Rockwell Automation announced the development of an orchestration and intelligent edge management platform coupled with an edge application ecosystem. This initiative is based on open industry standards and zero trust security principles, aimed at accelerating the digital transformation journey for industrial customers. As industrial manufacturers increasingly embrace digital change, the company seeks to amplify digital transformation efforts through innovations in analytics, artificial intelligence (AI), Manufacturing Execution Systems (MES), and other technologies. This approach allows them to access real-time intelligence closer to the source of industrial data.

In August 2023, ABB made a strategic investment by partnering with Pratexo, a company specializing in edge-to-cloud acceleration platforms. This collaboration empowers ABB's customers to deploy edge-based networks and solution architectures

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that provide real-time insights. Importantly, it offers enhanced data privacy and security, reduces the volume of data transferred to the cloud, and enables operations even when disconnected from the internet. This strategic partnership represents a significant step in advancing edge computing solutions within the industrial sector.

Additional Benefits:

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

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