

Smart Manufacturing - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts 2019 - 2029

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Report description:

The Smart Manufacturing Market size is estimated at USD 141.39 billion in 2024, and is expected to reach USD 279.23 billion by 2029, growing at a CAGR of 14.58% during the forecast period (2024-2029).

The increasing initiatives to adopt smart manufacturing will drive market growth. Smart Manufacturing Leadership Coalition (SMLC), a combination of US-based industrial organizations, technology suppliers, laboratories, and universities, is working on a next-generation Smart Manufacturing Platform and Smart Factory connectivity. Similarly, another industry-led initiative, the Industrial Internet Consortium (IIC), was formed to bring together the advanced technologies and organizations needed to accelerate the growth of industrial automation.

Using services and software, such as SCADA, ERP, HMI, PLC, DCS, PLM, and MES, has enabled industries to collect real-time data and make decisions. The software has been beneficial to the industry as it reduces product errors, reduces downtime, conducts planned maintenance, moves from the reactive phase to the predictive and prescribing phases, and enables decision-making.

The dependence on process control and systems combined with the convergence of IT and operating technologies systems has increasingly exposed manufacturing firms to cyber attacks. Manufacturers' control systems have long been deemed impenetrable due to their proprietary and customized networks. IoT has opened the scope for the theft of proprietary information. With more automation and digitization of these devices, which were originally built without the proper security measures, the data security concern will also grow, hindering the market growth.

Furthermore, investments in Industry 4.0 are rising globally. Organizations have started adopting Industry 4.0 smart solutions owing to their positive impact on their businesses, including increased productivity. For instance, as per a report by Capgemini

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and the National Association of Software and Services Companies (NASSCOM), it is expected that more than two-thirds of the Indian manufacturing sector intention embrace Industry 4.0. by 2025

Moreover, the companies operating in the market focus on innovations and launch new products to stay ahead of the competition. For instance, in February 2023, which announced the launch of Programmable Logic Controller OTAC to combat key unresolved challenges related to industrial IoT, smart factories, and operational technology (OT). This provides a highly optimized and highly secure authentication solution specifically for PLC devices by utilizing their dynamic 'one-time authentication code' (OTAC) technology to resolve typical ICS/OT security challenges.

The outbreak of COVID-19 triggered the manufacturing sector to re-evaluate its traditional production processes, primarily driving digital transformation and smart manufacturing practices across the production lines. The manufacturers also forced to implement and devise multiple agile and new approaches to monitor product and quality control.

Smart Manufacturing Market Trends

Automotive Industry is Expected to Drive the Market Growth

Automotive manufacturing is expected to gain strong impetus from smart technologies, Industry 4.0, IoT, etc. Discrete manufacturing is producing or manufacturing distinct parts that can be individually counted and touched. The pieces are mainly related to assembly lines. Discrete manufacturing includes products, such as cars, automotive parts, etc., that are increasingly connected.

Smart manufacturing is expected to help balance supply and demand, enhance product design, optimize manufacturing efficiency, and significantly reduce waste. Field devices, like robotics, sensors, etc., and ICS offer opportunities to the automotive sector to react faster to market requirements, reduce manufacturing downtimes, enhance supply chain efficiency, and expand productivity.

Smart manufacturing addresses the prime concern of the automotive industry, i.e., the length of a project. Quick return-on-investment projects combined with low-cost automation and cost innovation are helping manufacturers improve competitiveness through productivity improvement.

Further, according to UBS, Europe's projected electric vehicle sales are expected to reach 6.33 million units by 2025, followed by China, with 4.84 million units. As Europe and Asia-Pacific are leading the electric vehicles demand, the regions are anticipated to see an increase in smart automotive factories' implementation.

To cater to the changing landscape of automotive manufacturing, many players in the industry are adopting smart manufacturing solutions. For instance, in January 2022, Huayu Automotive Systems Co., which does business as HASCO, and ABB Group announced that they have created a joint venture building on their existing relationship "to drive the next generation of smart manufacturing." The companies claimed that the joint venture would enable them to further develop HASCO's leading position with automated solutions that benefit customers in China.

For the past 50 years, the automotive industry has used robots in its assembly lines for various manufacturing processes. Currently, automakers are exploring the use of robotics in more procedures. Robots are more efficient, flexible, accurate, and dependable for such production lines. This technology enables the automotive industry to remain one of the most significant robot users and possess one of the most automated supply chains globally.

For instance, in April 2022, an automotive manufacturing company, Fiat, a subsidiary of Stellantis NV, invested EUR 700 million at

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its Mirafiori factory, intending to produce 500 electric vehicles using state-of-the-art technology, such as collaborative robots. The company aims to automate its complex assembly line operations and quality controls, installing 11 cobots from Universal Robots A/S. Cobots are an essential part of the smart factory since they are compact, light, and built to work alongside humans safely.

Asia Pacific Region to Occupy a Major Market Share

China produces a sizeable portion of the market's demand and has the largest manufacturing sector in the entire world. In addition, despite production and supply chain setbacks brought on by COVID-19 curbs, the nation's industrial output increased by 3.6% in 2022 compared to the previous year, according to the Ministry of Industry and Information Technology (MIIT). The MIIT predicted that the manufacturing sector's output would have increased by 3.1% in 2022, making up 28% of China's GDP.

Traditionally seen as the world's manufacturing factory, China has significantly transformed from (cheap) labor-intensive manufacturing to high-end manufacturing through digitalization and industrialization. According to GSMA, China may account for one-third of the global IIoT market by 2025.

Manufacturing has also emerged as one of the high-growth sectors in India. The 'Make in India' program places India on the world map as a manufacturing hub and globally recognizes the Indian economy.

Government plays an important role in implementing the use of cases of IIoT in the region. Government initiatives, like Digital India and Make in India, are adding impetus to the Indian manufacturing industry. IIoT immensely benefits the Make in India campaign by providing innovative ways to sustain manufacturing organizations' sustainable development.

Moreover, India's pharmaceutical sector is comparatively ahead in automation, with the major pharmaceutical companies in the country, such as Zydus Cedilla, Torrent Pharma, and Cipla, focusing on automating their manufacturing processes of drugs, especially in areas where the complete integration of machines and equipment is required.

Additionally, India's government aims for a USD 5 trillion economy by 2025, of which manufacturing may be worth USD 1 trillion. The convergence of flagship programs, such as Make in India with Skill India and Digital India, may be key to achieving this goal, thereby driving the country's market growth.

Furthermore, several leading industry players are investing in smart manufacturing units in India to improve efficiency and gain a competitive edge in the market. For instance, in March 2023, Samsung Electronics announced investing in smart manufacturing capabilities at its second-largest mobile phone plant in Noida to make production more competitive.

Smart Manufacturing Industry Overview

The smart manufacturing market is highly competitive and consists of several major players. The major players with star shares in the market focus on expanding their customer base across foreign countries. The companies leverage strategic collaborative initiatives to increase their market share and profitability. The companies operating in the market are also acquiring start-ups working on autonomous delivery robot technologies to strengthen their product capabilities.

In May 2023, Mitsubishi Electric Corporation announced to make a strategic investment in Clearpath Robotics to support the development of manufacturing automation. Clearpath Robotics specializes in developing and selling autonomous mobile robots (AMR). Through this investment, the company will strengthen its support for complete factory optimization and automation by utilizing AMR systems.

In March 2023, Honeywell International, Inc. announced introducing Honeywell Universal Robotics Controller (HURC) to control

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disparate robotics and automation systems and facilitate the seamless exchange of data and communications. The company will demo robotic and automation solutions at ProMat 2023 in Chicago.

Additional Benefits:

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

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