Big Data Analytics In Manufacturing - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts 2019 - 2029

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Report description:

The Big Data Analytics In Manufacturing Market size is estimated at USD 8.93 billion in 2024, and is expected to reach USD 23.72 billion by 2029, growing at a CAGR of 21.60% during the forecast period (2024-2029).

The manufacturing industry increasingly adopts artificial intelligence (AI) technologies to handle complex workflows efficiently. With the global IoT, manufacturing market projected to reach USD 1.5 trillion by 2030, informed decision-making is critical for manufacturers as it impacts the entire product life cycle and timely delivery and prevents unplanned outages, defects, or safety issues. AI solutions such as intelligent document processing (IDP) help manufacturers minimize time spent processing documents by turning unstructured and semi-structured information into usable data in real-time.

Key Highlights
-According to a McKinsey report, data-driven businesses are 23 times more likely to attract clients and 19 times more likely to be profitable. Manufacturing companies can leverage data analytics by collecting and visualizing data from various areas of their operations in real-time. Schneider Electric, for example, switched to Oracle Analytics Cloud, which helped collect 90% of its sell-out data and analyze and process it automatically. With this technology, data collection errors were reduced, manual data consolidation was eliminated, and timeliness and accuracy improved.
-To tackle workforce management obstacles, manufacturing organizations must predict staffing, scheduling, training, and productivity challenges. Big data companies provide Predictive Analytics Solutions that help manufacturing organizations schedule maintenance and repairs, reduce downtime, and increase productivity. BMW, for instance, uses a data analytics solution to monitor the quality of its products during the production of cars. The sensors installed in BMW's manufacturing unit provide data that can help recognize quality issues early before they become a major problem.
-The COVID-19 pandemic disrupted the manufacturing industry, making keeping track of the supply chain and inventory

challenging. These hurdles in the production sector compelled organizations to collaborate with big data analytic providers for technologies like RFID and barcode scanning, which help track goods in dispatch and location of warehouses by sitting in the manufacturer's premises.
-The major hurdle in adopting big data analytics in the manufacturing industry is the availability of a large amount of data with a need for quality filtering processes. Data from different departments should integrate and work as one entity to identify and resolve problems immediately. By adopting AI technologies and data analytics, the manufacturing industry can optimize operations, increase productivity, and stay competitive globally.

Big Data Analytics In Manufacturing Market Trends

Condition Monitoring is Expected to Register a Significant Growth

- Condition monitoring is a process that involves the use of sensors to collect data and monitor crucial operating parameters such as vibrations, sound anomalies, airflow, and current. This data is then used by predictive data analytics solutions to predict machine failures before they happen, ultimately helping to reduce maintenance costs and downtime.
- Mondas is a company that provides a Condition Monitoring platform for manufacturers of energy plants and building services equipment. Their real-time monitoring functionality helps to lower operating costs by detecting defects before they become major problems.
- In February 2023, Dublin-based Hoistech partnered with CoreRFID to develop an app-based visual management tool that enables users to monitor and report on the condition of any asset. The app automatically geolocates the user and asset using the phone's GPS, while the dashboard provides a clear overview of all asset performance.
- In April 2022, OMRON Technologies launched K7TM, a condition monitoring device for heater equipment used primarily in the automotive and FMCG industries. These devices can be easily attached to existing equipment to detect abnormal machinery conditions. One of the key features of this device is the automatic measuring of the resistance of the heater during equipment operation to identify the deterioration tendency of the heater.
- In March 2022, Guardhat released an industrial-grade solution for worker condition monitoring. The application assists in real-time monitoring and event-based alerts to help prevent injury or even death from exposure to heat, gas, radiation, or any other calamity. The trials were conducted at a metal production facility, where the organization received alerts that workers were getting over-exerted as the temperatures exceeded 102F and got them cooled off before any injury occurred.

Asia-Pacific to Witness Highest Growth

- The Asian Development Bank (ADB) has released a report forecasting that the Southeast Asian (SEA) economy will grow by 4.7% in 2023. One sector that presents vast opportunities for growth in the ASEAN region is manufacturing, and the adoption of the Internet of Things (IoT) technology can further enhance this growth potential.
- Several countries in the Asia-Pacific (APAC) region, such as South Korea, China, Japan, Taiwan, and Singapore, are known for their strong manufacturing industries, particularly in producing electronics assembly and semiconductor parts. These countries are increasingly adopting big data analytics to improve operations in the electronics and semiconductor industries.
- The implementation of IoT technology, combined with data analysis, can enable real-time insights into various operational aspects, such as vehicle mishaps, employee absences, accidents, and injuries, during daily operations. This can help facilitate smooth operations and enhance efficiency in the manufacturing industry.
- Vietnam's leading digital transformation services provider, FPT Software, and Japanese IT company SCSK have collaborated to launch a comprehensive solution for original equipment manufacturers (OEMs) and suppliers in the automotive industry. The

platform, MaaZ (Monozukuri Adaptive AUTOSAR), aims to provide highly efficient solutions that can reduce the product's time to market and lower the total cost of ownership for customers.
- In summary, the Southeast Asian economy is expected to experience significant growth in 2023, particularly in the manufacturing industry. The adoption of IoT technology and data analysis can further enhance growth in this sector. Companies such as FPT Software and SCSK are driving innovation and efficiency in the automotive industry by collaborating to provide advanced solutions to OEMs and suppliers.

Big Data Analytics In Manufacturing Industry Overview

The manufacturing sector has seen a surge in adopting analytics solutions and IoT, presenting new opportunities for big data analytics providers. Existing players expand their product offerings as the market expands to compete with new entrants. One area where data analytics can provide a competitive edge is image analysis, which helps manufacturing companies detect defects such as minute cracks or scratches that are difficult to identify with the human eye.

In February 2023, the United States national institute on Smart Manufacturing, CESMII, partnered with SAS to promote advanced analytics across the manufacturing sector. Deploying analytics solutions in smart factories can drive digital transformation, enhance production quality and efficiency, and improve business decision-making. Georgia-Pacific, one of SAS's earlier clients, has experienced a 30% reduction in unplanned downtime and a 10% improvement in overall efficiency using SAS's cloud-native solution.

In January 2022, India's Bharat Petroleum Corporation Limited (BPCL) launched "One BPCL," a technology solution that unites all its business units under a single shared platform. BPCL deployed Salesforce Sales and Service Cloud and Tableau CRM's business analytics to help its sales officers capture leads, monitor opportunity pipelines, and close deals faster. By leveraging these advanced technologies, BPCL aims to streamline its operations and improve its overall business performance.

Additional Benefits:

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

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