Europe Machine Condition Monitoring Market - Growth, Trends, Covid-19 Impact, and Forecasts (2023 - 2028)

Market Report | 2023-01-23 | 133 pages | Mordor Intelligence

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Report description:

The European machine condition monitoring market was valued at USD 834.4 million in the base year. It is expected to reach a value of USD 1,210.23 million, registering a CAGR of 7.72% in the next five years. An outlook toward low-cost mass production has led maintenance professionals to turn to condition monitoring. With active machine condition monitoring, multiple industries can prevent machine failures, which is an added capital investment.

Key Highlights
One of the primary goals of any business is to prolong an asset's lifecycle and ensure that the asset functions efficiently for an extended period. This can be accomplished through the use of condition monitoring. Maintenance is crucial to machines. Machine condition monitoring is an important part of maintenance, and thus, many companies have been focusing more on asset utilization and increasing productivity.
Predictive maintenance systems can help organizations with condition-monitoring tools to track the performance of any equipment or machine in idle, normal, and peak performances. The data from machines operating at different conditions helps plan maintenance in the future to prevent sudden failure or downtime.
Automated machine monitoring forms the first step toward achieving smart factories. In a smart factory, machines are interconnected with IoT-enabled, web-based sensors that facilitate real-time machine data extraction. The network of connected machines helps obtain valuable insights into machine performance, enhances ongoing production, and analyzes estimated versus actual production ratios.
The rise of smart manufacturing and Industry 4.0 increased the possibility of monitoring the condition of the production equipment in a factory. Physical sensors can be deployed to collect data from the factory floor, and they can be processed and visualized on a dashboard on a workstation. This provides an overview of the condition of the machines and enables increased uptime and efficiency.

All European businesses have crucial assets for manufacturing goods and services offering revenue, experiencing a rapid decline due to the COVID-19 pandemic. The management of such companies has been feeling extreme urgency and panic, increasing the emphasis on cutting costs. Since manufacturing activity is low, companies are tempted to eliminate maintenance, which can result in high costs during the forecast period.

Europe Machine Condition Monitoring Market Trends

Industry 4.0 and Emerging Industrial Applications Across Manufacturing and Process Industries

Industry 4.0 transforms how organizations manufacture, improve, and distribute their products. Manufacturers are increasingly integrating emerging technologies, such as IoT, cloud computing and analytics, and AI and machine learning, into their production facilities and operations.
Moreover, in the past, preventive maintenance helped reduce machine downtime and avoid unscheduled outages. Industry 4.0 brought a new method of ensuring machine availability called condition monitoring. It involves continuous monitoring of machine data to detect wear, making it easier to schedule repairs and reduce downtime. The method also has the potential to lower maintenance costs, as only worn-out parts need replacing.
Industry 4.0 is transitioning factories from legacy systems to smart components and machines, enabling digital factories and, eventually, an ecosystem of connected factories and enterprises. These smart factories are commonly equipped with advanced sensors, embedded software, and robotics that collect and analyze data, allowing for better decision-making.
Automated machine monitoring forms the first step toward achieving smart factories. In a smart factory, machines are interconnected with IoT-enabled, web-based sensors that facilitate real-time machine data extraction. The network of connected machines helps obtain valuable insights into machine performance, enhances ongoing production, and analyzes estimated versus actual production ratios. According to ETNO, the active Internet of Things (IoT) connections in the automotive sector would be 223 million, and industries would be 19 million across Europe by 2027.
Shop or factory floor communications can also be improved with machine monitoring. Manufacturers and operators across the shop floor are informed on machine behavior through analytics, warnings, and other notifications that expand production process visibility, creating a catalyst for better stakeholder awareness and engagement. Machine monitoring is vital for creating an opportunity for all stakeholders to connect individual, independent shop floor operations to account for broader performance and process outcomes that are essential for a smart factory.
Overall, a smart factory is effective when machines or assets in the production process are monitored in real-time with minimal manual intervention. By tracking several parameters like pressure, vibration, temperature, and noise, machine monitoring determines asset health conditions. Machine performance metrics are also identified, and any deterioration or faulty part is immediately reported.

Germany Holds the Highest Market Share

The automotive sector is one of the largest industries in Germany. The country is also one of the strongest in the world when it comes to high-tech automotive products, including autonomous driving technology. Germany is Europe's largest automotive market, accounting for around 25% of all passenger cars manufactured and almost 20% of all new registrations, according to the Germany Trade and Invest (GTAI).
Also, as per GTAI, German automobile manufacturers produced more than 15.6 million vehicles the previous year. Over 3.1 million passenger cars and 351,000 commercial vehicles were manufactured in German plants. Consequently, there was a significant demand for condition monitoring solutions from this sector to ensure the safe operation of vehicles.

According to OICA, new car sales and registrations in Germany increased, reaching 4.02 million in 2019. Due to the manufacturing halt during the pandemic, the sales decreased to approximately 3.27 million the following year. New sales and registrations decreased, with 2.97 million in 2021, a 26% decrease from 2019.
The market also benefits from a strong maritime industry in the country. Germany is among the largest seafaring nations globally. According to the Federal Ministry for Digital and Transport, the country has an international market share of around 30% in the container shipping sector. The German shipping industry generates an annual turnover of over EUR 50 billion (USD 52.51 billion).
In day-to-day ship operations, structural and mechanical failures might result in serious accidents, inflicting ship damage, placing the crew and passengers on board in danger, posing a threat to the environment, and causing substantial financial losses. As a cost-efficient and effective maintenance strategy that can save ships from such risks, condition monitoring is gaining popularity in the marine industry. Condition monitoring in onboard ships helps monitor critical onboard assets, such as main engines, thrusters, generators, compressors, and pumps.
Moreover, in April 2022, Germany-based Bruel& Kj□r Vibro(B&K Vibro), a global supplier of condition monitoring solutions for rotating machinery, introduced an array of product enhancements for its VCM-3/SETPOINT offerings to provide a single, integrated SETPOINT condition monitoring system (CMS) solution. The data from VCM-3 can be fully integrated with VC-8000 data and fed directly into SETPOINT CMS, creating a plant-wide solution that encompasses machine protection and condition monitoring for critical and BOP machinery assets.

Europe Machine Condition Monitoring Market Competitor Analysis

The European machine condition monitoring market is moderately fragmented, with key players like Honeywell International Inc., Schaeffler Technologies AG & Co. KG, General Electric Company, Emerson Electric Co., and Fluke Corporation, among others. Players in the market are adopting strategies such as partnerships, innovations, mergers, and acquisitions to enhance their product offerings and gain sustainable competitive advantage.

In July 2022, GE announced plans to become three independent and publicly traded businesses focusing on healthcare, energy, and aviation, where new names also reflect a new beginning. GE's healthcare business would be called GE HealthCare. GE's existing portfolio of energy businesses, including renewable energy, power, digital, and energy financial services, would sit together under the brand name GE Vernova. GE Aerospace would be the name of GE's aviation business.

In May 2022, NI announced the launch of ActiveUptime, its maintenance-as-a-service solution for condition monitoring and predictive maintenance of test equipment and facilities. This turnkey solution is tailored to the user's environment and provides the information needed to proactively monitor system health and prevent critical test equipment from failing. As part of the ongoing service, a dedicated technician from NI's maintenance team is expected to remotely monitor system health, provide support, and adapt the solution based on the customer's needs. This solution advances the user's capabilities to predict outages before they happen proactively.

Additional Benefits:

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

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