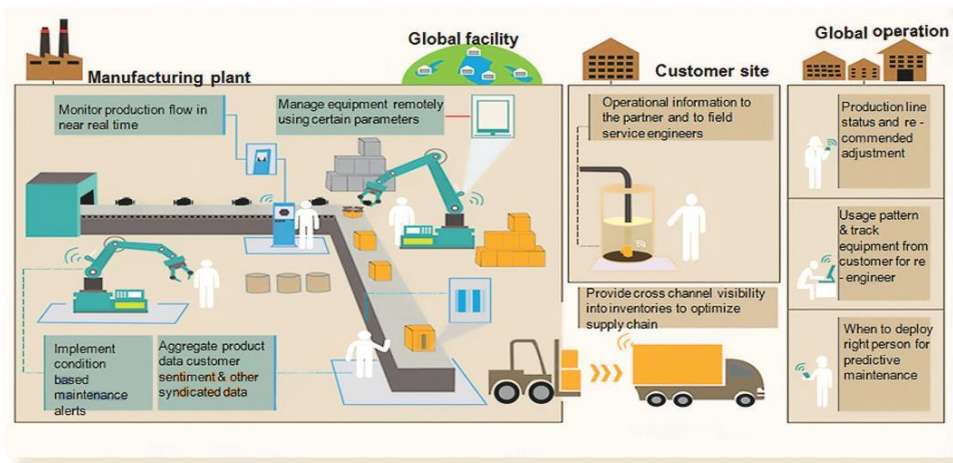


Print coverage report
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MANUFACTURING IT | TECHNOLOGY



IoT application in manufacturing sector

The article talks about the benefits of IoT technology and how connecting production line systems can reduce cost and help for the optimum use of resources



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The Internet of Things (IoT) is bringing radical changes in the manufacturing process and can make the entire process flow and people more informed, efficient and productive. Smart manufacturing builds an environment where all information is available from within plant floor to supply chain.

With IoT, manufacturers can monitor the condition of machinery and look for indicators of predictive failure, for example, vibration, temperature, or pressure outside threshold limits. This means that the technician needs to make fewer visits, reducing costs and resulting in faster recovery.

Connecting production line systems

Production line monitoring and automation is a popular IoT application. By connecting production line systems, manufacturers can move to predictive maintenance, making better use of resources and reducing unplanned downtime. It can improve equipment utilisation and plant output overall.

Manufacturers can also track pallets, shipping containers and equipment, both on - and off-site, using location-aware IoT devices. Using a mix of connectivity technologies,

including cellular and satellite, this tracking can cover shipments across road, rail, sea and air transport. This end-to-end monitoring reduces the chance of loss or theft and additional sensors can be used to verify that perishable or fragile goods are kept in appropriate conditions and handled properly throughout their journey.

In connected supply chain, by connecting the production line and plant equipment to suppliers, all units can understand interdependencies, the flow of materials and manufacturing cycle times. IoT-enabled systems can be made capable for location tracking, remote health monitoring of inventory, and reporting of parts and products as they move through the supply chain. IoT systems can also collect and feed delivery information into an ERP system, providing up-to-date information to accounting functions for billing.

Cost savings

Energy is the second largest operating cost in many industries. However, many companies lack cost-effective measurement systems and/or performance and management tools to optimise energy use in individual production

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TECHNOLOGY | MANUFACTURING IT

The IoT cloud platform is capable of interconnecting with various devices, collecting and analysing data and getting integrated with custom-built vertical applications

operations. There are numerous ways in which IoT can create cost savings for manufacturers.

The top five objectives for incorporating smart devices or embedded intelligence into operations are to:

- Improve product quality (58%)
- Increase speed of operation (57%)
- Decrease manufacturing costs (57%)
- Improve maintenance/uptime (47%)
- Improve information for business analytics (42%)

Additionally, the top five IoT capabilities that present the biggest challenges are identifying opportunities/benefits of the IoT, network capabilities to handle the IoT, budget/resources to develop or expand the IoT, incorporating smart devices or embedded intelligence and adapting to existing technologies.

Furthermore, manufacturing executives believe that embedding smart devices or intelligence will increase revenue from new products by 39%, increase market share by 39%, access data from products or services in the field by 34%, increase profit margins per product by 34%, improve branding/market awareness by 27% and access to new markets/sectors by 26%.

IoT cloud platform

Tata Elxsi's IoT cloud platform namely TETHER is capable of interconnecting with various devices, collecting and analysing data and getting integrated with custom-built vertical applications. It is a layered platform with the base IoT platform at the bottom and provides customers with the flexibility to add domain layers of their choice on top. Its lego-like architecture allows components and applications to be developed and linked together easily.

TETHER helps reduce risk, time to market and cost of deployment and thus acts as a simple, reliable, secure and scalable platform.

Looking forward...

Potential market for smart factories and factory automation technologies is estimated to be \$151 billion. There are some interesting ongoing and upcoming trends in the manufacturing sector. The APAC region is projected to be the largest market for IoT in the manufacturing sector by 2020. Within APAC, China held the largest market share for manufacturing sector in IoT, whereas India is expected to grow at the highest CAGR among the major markets.

Factors which are driving the IoT for manufacturing market include technological advancements in semiconductor and electronics, evolution of cloud computing technologies, standardisation of IPv6 and support from governments worldwide. The manufacturing sector is witnessing a transformation through the implementation of smart factory concept and factory automation technologies. Government initiatives such as Industry 4.0 in Germany and Plan Industrial in France are expected to drive the manufacturing IoT solutions in Europe. The rising adoption of IoT in manufacturing is expected to boost the market for networking technologies, especially wireless networks.

The current landscape of IoT is growing rapidly, but it is important to have the right set of partners. The diverse yet cohesive IoT solutions require interoperability between various hardware and software. It is, thus, important to have partnerships with key vendors to provide the best solution to customers. □

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