The Scope

How digitization is transforming the manufacturing industry?

Digitization in Manufacturing

- Internet of Things
- AI and Machine Learning
- Digital Supply Chains
- Improved Speed & Efficiency
- Unified Manufacturing Process
- Rapid Iteration

Internet of Things (IoT)

IoT leads the dream of a total product data loop. Data can be collected and managed only if it is a digital product completely;

- Designs can be automatically changed based on the environmental challenges
- Changes can be pushed to the manufacturing floor automatically.
- Products can be altered along the line

AI and Machine Learning

Artificial intelligence and machine learning are two of the most important technologies in a digitized factory;

- Increased production capacity
- Intelligent resource use
- Prediction of customer demand
- Optimised operational efficiencies
- Enabling all business departments to work together

Digital Supply Chains

For creating a digital factory of the future, manufacturers must integrate the entire supply chain, by incorporating every stage of the product lifecycle. The end goal is to create a supply chain ecosystem where the relation between various parts of the machine is affected by changes that happen elsewhere in the system.

This will allow the manufacturer to have a real-time overview of all the links in the supply chain and will enable them to simulate different scenarios that may occur in the future.

Improved Speed & Efficiency

Automated technology will help the manufacturing companies to improve the speed and efficiency, as it optimizes the production flow and inventory.

This level of predictive accuracy will help in improving the condition monitoring process and allows the manufacturers to manage the Overall Equipment Effectiveness (OEE).

Unified Manufacturing Process

Digitization can assist in process enforcement. Organizations should be able to share the data across several locations in real-time. Further, all the necessary data should be accessible by anyone at any given point in time. These are the two important criteria for a unified manufacturing process to work.

Rapid Iteration

Digitization will not only make the manufacturing process faster, but will also help in driving innovation through rapid process iteration.

What fuels the iteration speed?

- Better data sharing across organizations/divisions
- Software suits via API

Summary

As we move to Industry 4.0, we realize that digitization is not the end of the story of digital transformation. But is a crucial start to it. Once most of the processes are digitized, then technologies like machine learning, AI, IIOT, digital twin, and an all-inclusive product lifecycle can emerge.