

DRIVING YOUR DIGITAL TRANSFORMATION

The latest digital manufacturing trends are aimed at connecting physical and virtual factory environments to boost productivity, efficiency and profitability. To successfully bridge these two worlds, businesses need to combine a number of cutting-edge technologies on the road to digital transformation.

Jeremy Shinton, Edge Computing Product Manager at Mitsubishi Electric, looks at how to implement a winning digital strategy using the right technologies

Developing and implementing digital transformation programmes is crucial for manufacturing businesses. Advances in aggregation, analysis and mining of Big Data as well as Artificial Intelligence (AI), edge computing, industrial automation and networking offer a range of ideal tools to develop highly accurate digital management, monitoring and control models for machines, systems, processes and other assets.

These virtual systems can be used to forecast future equipment requirements, e.g. for predictive maintenance, or to optimise monitoring and control strategies aimed at improving production processes. In both cases, digital models allow manufacturers to increase plant productivity and efficiency by offering a clear, in-depth process understanding.

Starting your digital transformation journey

While it may be tempting to adopt all these innovative technologies and solutions at once, it is important to plan the implementation in stages. The majority of manufacturing plants have grown, developed and adapted over time as market demands have changed. Businesses tend to implement new technologies as they become available, in order to improve their operations and maintain a competitive role in the market. As a result, they are composed of both old and new equipment with varying degrees of intelligence.



Therefore the first step in a company's digital transformation journey should be to review its assets and determine where data can be easily and effectively gathered. To develop futureproof automation systems, businesses should design controllable, backward compatible and scalable systems that can be expanded. In this way, they can start installing solutions that suit current processes, needs and resources available while also laying the groundwork for future digital migration work.

For example, to leverage the power of Big Data and Smart Manufacturing, existing plants need to increase the accessibility and visibility of data collected on the factory floor. This can be achieved by upgrading existing drives and controllers with newer solutions that can collect and transfer information to other machines, networks or data management platforms.

Following on from this, another key element of the future of manufacturing is utilising Industrial Internet of Things (IIoT) technologies to optimise operations, from manufacturing processes to maintenance activities. For this to work, it is important to bridge the divide between IT and Operational Technology (OT), enabling information to be shared for advanced analytics. Thus one of the next steps in a company's digital transformation is the combining

of IT and OT by implementing automation products that can process data at the edge. Edge computing provides a secure solution that has the benefit of near real-time processing with AI and Advanced Analytics (AA) capability.

Keeping a step ahead

To develop and implement successful digital transformation strategies in a step-by-step approach, it is important to partner with an automation specialist with extensive and comprehensive experience in factory automation as well as the latest technologies. In this way, a roadmap of suitable and scalable solutions that will deliver a rapid Return On Investment (ROI) as well as clear technical benefits for the intended application can be developed. Furthermore, continuous support and assistance can be offered throughout the entire digitalisation process.

Mitsubishi Electric and its UK integration partners have a proven track record of helping manufacturing businesses with digital transformation and migration strategies - built on innovative automation products that incorporate the latest technologies. These include intelligent automation devices that are capable of local AI processing and deliver a wealth of preventative maintenance features and diagnostic data.

The company's solutions for edge computing are also helping manufacturers to process data, effectively integrating IT and OT. Furthermore, Mitsubishi Electric's condition monitoring and smart maintenance tools utilise equipment data to create accurate and precise models aimed at optimising predictive maintenance activities.

By relying on the right partnership for their digital transformation journeys, manufacturers can benefit from the latest technologies, modularity and scalability. In this way, businesses are supported at each stage of their digital strategy, which will ultimately lead to the development of a competitive edge.

Image captions:

Image 1: A key element of the future of manufacturing is utilising Industrial Internet of Things (IIoT) technologies to optimise operations, from manufacturing processes to maintenance activities.

[Source: Mitsubishi Electric Europe B.V.]

Image 2: The latest digital manufacturing trends are aimed at connecting physical and virtual factory environments to boost productivity, efficiency and profitability.

[Source: Mitsubishi Electric Europe B.V.]

Image 3: Jeremy Shinton, Edge Computing Product Manager at Mitsubishi Electric.

[Source: Mitsubishi Electric Europe B.V.]

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About Mitsubishi Electric

With nearly 100 years of experience in providing reliable, high-quality products, Mitsubishi Electric Corporation (TOKYO: 6503) is a recognized world leader in the manufacture, marketing and sales of electrical and electronic equipment used in information processing and communications, space development and satellite communications, consumer electronics, industrial technology, energy, transportation and building equipment. Embracing the spirit of its corporate statement, Changes for the Better, and its environmental statement, Eco Changes, Mitsubishi Electric endeavors to be a global, leading green company, enriching society with technology. The company recorded consolidated group sales of approximately 40.7 billion dollars* in the fiscal year that ended on March 31, 2020.

Mitsubishi Electric Europe, Industrial Automation – UK Branch is located in Hatfield, United Kingdom. It is a part of the European Factory Automation Business Group based in Ratingen, Germany which in turn is part of Mitsubishi Electric Europe B.V., a wholly owned subsidiary of Mitsubishi Electric Corporation, Japan.

The role of Industrial Automation – UK Branch is to manage sales, service and support across its network of local branches and distributors throughout the United Kingdom.

*At an exchange rate of 111 Yen = 1 US Dollars, last updated 31.03.2020 (Source: Tokyo Foreign Exchange Market)

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