

Clearview

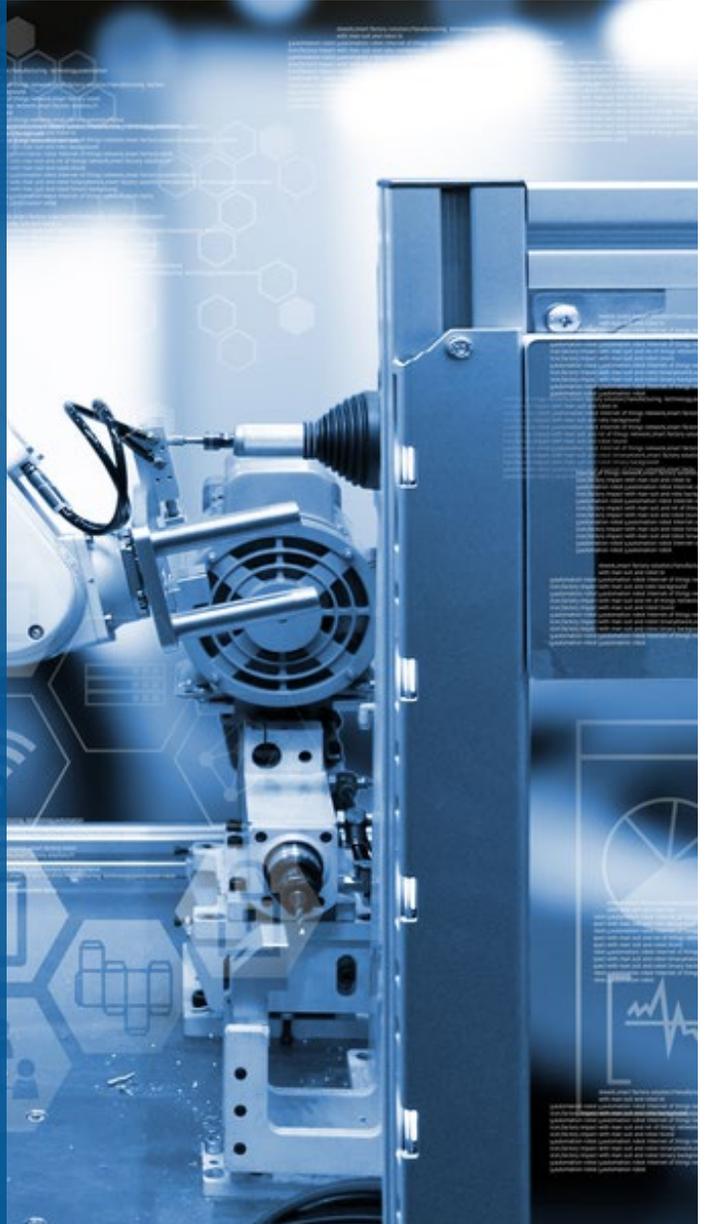
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Smart factories

Smart factories are revolutionising the manufacturing industry as players overhaul their production systems.

Inside:

- Intelligent manufacturing
- Servitisation
- Increasing M&A and investment





Intelligent manufacturing

The concept of a smart factory is about making products which customers want in the most effective and efficient way through automation and intelligent manufacturing.

The convergence of industrial robotics, artificial intelligence, and operational and information technologies has now made this possible, while the use of sensor-driven data-gathering technologies means that real-time information can be retrieved from production operations. This helps drive critical decision-making and much greater production efficiencies.

Automated systems mean that manufacturers can proactively adapt their work streams to respond to changing production schedules, thereby leading to fewer periods of downtime and faster responses to market developments.

Modular solutions

Smart factories have typically adopted modular machinery solutions which have replaced fixed-cycle production. This approach is based on cyber-physical production systems (CPPS), that integrate the operational control of machine tools and other machinery with digital systems. These systems are also responsible for order scheduling, equipment monitoring, manpower management, sales activities and the processing of shipments.

These advances in both the physical and virtual elements of production systems mean that manufacturers now have much greater control over the adaptability, efficiency, reliability, safety and usability of their operations.

As a result manufacturers are having to become much more flexible. A core element of smart factories is that manufacturers will effectively release themselves from controlling their production operations as activities are controlled by intelligent machines which automatically make decisions using dynamic data from other parts of the production chain.

Collaboration

Another result is that companies - whether they are suppliers, manufacturers or customers - are collaborating much more as they are brought closer together by entirely integrated production processes.

As such, businesses are having to adapt their business models to become more transparent in order to be able to co-operate effectively with each other, which in turn drives financial benefits within their own businesses.

A further positive development is the tendency for manufacturers to innovate new products at a quicker rate, responding to the demands of their customers in an automated manner. This means they can bring new products to market much more quickly than ever before. In turn, as systems become ever more automated and digitised, it also releases company manpower onto research and new product development.

Servitisation

Alongside these huge changes in the actual manufacturing process, smart technologies and the harnessing and use of data are also transforming what happens after the manufacturing process and how a business then sells a particular product to customers, the so-called 'servitisation' of products.

In particular it has turned the business models of many leading industrial players into service-based activities as they move beyond simply using machinery for production operations.

One of the big drivers in this context is that smart technology allows machines to tell users when they are going wrong, what is wrong with them, and how they can be used more efficiently. These advances are also about utilising different business models in order to charge the customer based on what is important to them.

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Changing environment

Industry examples

A good example is UK aircraft engine manufacturer Rolls Royce, which traditionally sold its products to aircraft manufacturers who were then responsible for servicing the engines. However, now customers increasingly pay for engines by mile of usage, and smart technology enables Rolls Royce to monitor their performance and tells the company when their efficiency could be improved through servicing.

Another is construction equipment manufacturer Caterpillar, which today provides a remote tracking and monitoring service providing clients with updates on the location of equipment and helps monitor maintenance of components.

In addition Xerox, a company once best known for its photocopiers, is a company which now sees more than half of its business come from offering services such as document publishing and management, and business process outsourcing. It says servitisation not only offers increased revenue streams, but also helps build closer ties with customers to add value to their operations.

M&A activity

The increasing focus on the adoption of smart factory technologies means that manufacturers are having to rapidly adapt to the new environment, and for many this has brought into focus the need for significant capital investment in their operations. These businesses are looking for external sources of funding to support this capital expenditure, with sector partners, global competitors and private equity firms all being used to support these exciting new initiatives.

As a result, there is an increasing number of transactions taking place around the smart factories sector as companies look to harness the capabilities they now need. Groups are tapping into these opportunities through the acquisition of companies which have developed these new specialist technologies.

Deal drivers

In the robotics field a good example was the €3.7bn acquisition of KUKA AG by the Chinese group Midea Group Co., Ltd. KUKA is a German group which is a worldwide player in factory automation, building on its core capabilities in the production of

factory robots, and has expanded its activities to include full human-to-machine (H2M) connectivity solutions for production systems. Siemens AG has also been active in the sector, recently acquiring Mendix Inc., a US developer of industrial mobile and web tools which require limited coding.

In the machine-to-machine (M2M) communication sector, Wireless Logic underwent its third private equity transaction in 2018 when Montagu acquired it from CVC. Meanwhile, the acquisition of Intelligrated by Honeywell highlighted the desire of global players to have end market specialisms in automation as another key deal driver. Intelligrated's supply chain and logistics solutions include automated storage and retrieval systems, palletizers, and robotic solutions.

A good example of an OEM acquiring a channel/services-based integrator saw the US group Rockwell Automation acquire Maverick Technologies, to help deliver control and information solutions to customers in industries such as chemical, food and beverage, and oil and gas.

Case Studies

Clearwater International advises Centriq on its sale to Körber

Centriq Group is headquartered in the UK with operations in France, Germany and the US. It is the holding company for Voiteq and Cirrus Logistics. Voiteq delivers voice-oriented solutions across the full-spectrum of warehouse activities that are built around its middleware product, "VoiceMan". Together they allow workflows in a warehouse to be directed, measured, monitored, tracked, and reported, improving productivity and providing meaningful operational data. Cirrus Logistics' decision support software products include: CLASS, the industry standard for warehouse design and simulation, Seaberth, vessel berth scheduling used in ports globally and Cost2Serv, logistics planning and optimisation.



Clearwater International advises MacDonald Humfrey on its cross-border sale to L-3 Communications for a purchase price of approximately €300m

MacDonald Humfrey (Automation) Limited is a globally recognised leader in the deployment of effective and efficient checkpoint security and wider aviation solutions, as well as in the development of state-of-the-art process automation and collaborative robotic capabilities supporting aviation and other end markets.

MacDonald Humfrey's aviation solutions have been deployed throughout Europe, the Middle East and Canada, and most recently in the US where the company has engaged with airlines and airports to help reduce lengthy checkpoint delays.



Recent transactions




sold to



Sell-side
Undisclosed





acquired



Buy-side
Undisclosed





sold to



Sell-side
c. €100m



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