The number of smart machines in manufacturing will double in the next three years

By Antony Bourne

3 Feb 2016

The use of smart machines in manufacturing is growing rapidly; by 2018, 50% of the fastest growing companies in the world will have fewer employees than smart machines, according to Gartner.

Image credit: IFS

At IFS, we see that there is currently a limited application of smart machines, so it will be interesting to see just how close we get to the Gartner forecast. Over the next two years, as hardware and software advances, smart machines will evolve from being programmable tools to devices capable of self-learning and cognitive development.

The computerisation of manufacturing, also known as Industry 4.0, which will drive the agenda for the next World Economic Forum, will generate efficiency savings as machines can learn and interact with each other without the need for complete human supervision and intervention. IFS has seen, and is seeing, this evolution happen as it supports communications between systems and smart machines, enabling them to learn, report back and manage scheduling.

Uptake of 3D printing will grow

3D printing is set to change the face of manufacturing by reducing time constraints and costs. Manufacturers will be able to print parts that they need. Airbus, for example, is known to have used 3D printed parts to build the A380 aeroplane. However, there is still a long way to go until 3D printing becomes a core part of the manufacturing process. The integration of 3D printing into the manufacturing process will also greatly reduce the requirement for storage space for parts on the assembly line, as businesses create parts on premises or source from a local 3D printer.

Developments in titanium printing that provide high-quality products that will make the manufacturing process much simpler and easier to handle are also likely to drive the uptake of 3D printing. Research and development is likely to benefit from advances in 3D printing as companies will be able to print test products quickly and affordably, rather than invest in the risks associated with building prototypes in the hope that they will work in full roll-outs.

Some doubts remain about 3D printing, most notably around traceability of parts and products. If, rather than employing an engineer or buying from a reputable source, companies opt to print their own parts, it could make devices less reliable. This could also lead to a break in the service contract because non-approved parts have been used. In addition, there are concerns about intellectual property breaches as companies could potentially scan and copy machinery and parts. Whichever side you come down on, there's no denying 3D printing is going to lead to significant changes in manufacturing.

Manufacturing industry growth in 2016

Based on discussions that IFS had with customers during 2015, 80% of manufacturers are expecting to see some degree of growth in the next 12 months. This is a view supported by the United Nations Industrial Development Organisation, which predicts a global growth at a steady pace of approximately 3.5% in 2015 and into next year. This is in part due to external factors, such as falling oil prices, but also ongoing efficiency improvements within manufacturing.

Technology is now a core part of the manufacturing process, and as the likes of smart machines and 3D printing become more integrated into production lines, it will deliver greater efficiencies and offer opportunities for manufacturers to reduce cost and grow revenues.

The UK is a good example of this: In 1978 25% of all jobs in the country were in manufacturing; now only 8% are. Despite this, the UK remains one of the top manufacturing economies in the world.

In order to successfully grow over the next year, manufacturers are looking for support to enable them to be more agile, so that when business environments do change, they can use solutions such as IFS' to adapt in order to get a competitive advantage.

ABOUT ANTONY BOURNE

Antony Bourne's responsibilities include acting as the global industry director for industrial manufacturing and high-tech as well as managing the other global industry directors. Antony has over 20 years' experience in the IT industry, including working in the manufacturing sector. Prior to joining IFS in 1997, he held business analyst positions with Ford Motor Company and AlliedSignal. During this time he implemented ERP applications as well as business process improvements.

- Game-changing trends for the manufacturing industry in 2018 - 5 Feb 2018
- Three strategic approaches to help manufacturers seize the opportunity of rapid industry change - 1 Jul 2016
- The number of smart machines in manufacturing will double in the next three years - 3 Feb 2016

View my profile and articles...