

Automation and IoT in the supply chain industry - what's next?

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With discussions around automation having moved up the global business agenda in recent years, supply chain companies have been looking at how this technology can help to revolutionise their sector.

A recent study found the industry's adoption rate for robotics and automation increased by more than it did for any other technology in the past year, with 39% of companies now having implemented such solutions - demonstrating the rising demand for them.

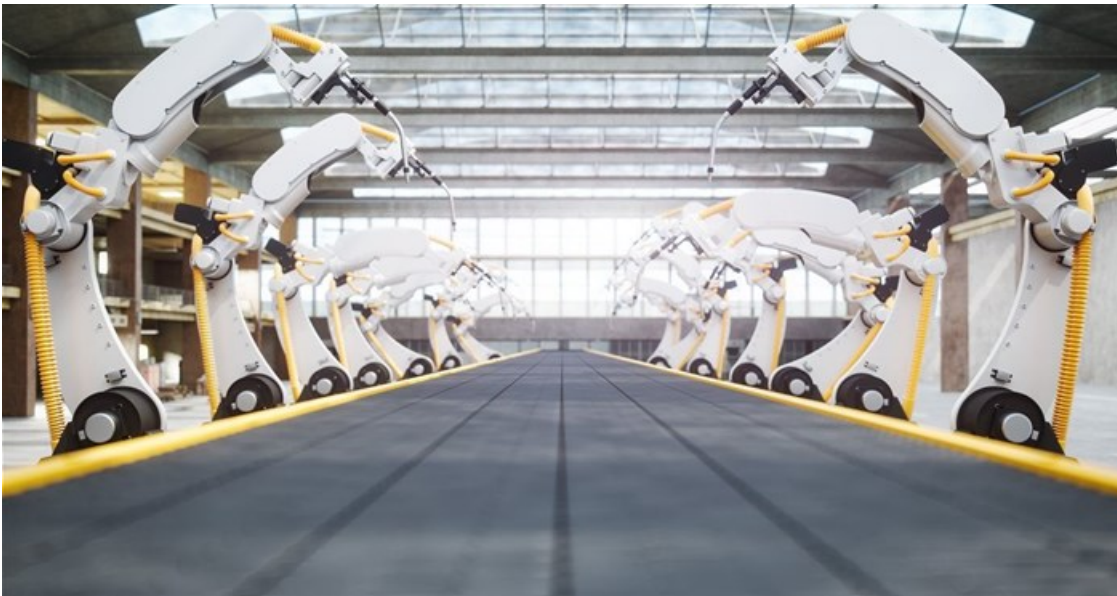


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But the story doesn't end there. As a result of the Covid-19 pandemic, there is an accelerated need for automation within the industry in order to reduce both the frequency and duration of human-to-human contact, thereby helping organisations to comply with social distancing measures.

The Internet of Things (IoT) is a key driver of automation, and these technologies together will play a critical role in empowering connected devices to support this need. However, there are still a number of challenges which businesses need to overcome to ensure automation can happen successfully – not least around the management of the vast swathes of data created by IoT solutions. Businesses will need to tackle these by introducing other technologies into the mix, such as edge computing.

An accelerated need for automation

The coronavirus pandemic has created a situation where the use-cases and capabilities of many digital solutions have become even more relevant. Automation and robotics, through the adoption of IoT, will likely become a core competence of multiple sectors in the foreseeable future. One such sector is that of manufacturing and logistics, as companies look at expanding the use of IoT across production lines and deliveries in order to increase workforce safety and reduce potential contamination.

For example, in logistics, IoT sensors can travel with a shipment to enable regular updates on a package, which can help to ensure the highest safety standards for delivery. Even prior to this – within the production stage itself – robotics has the potential to help transport products from a warehouse to packing stations, while also reducing employee interaction.

These innovations are increasingly important given the transition towards ecommerce in the current climate, with online orders growing by 49% during the pandemic due to brick-and-mortar stores closing. This has created additional strain on the supply chain industry as it has strived to keep up with the online shopping demands of consumers while ensuring worker safety.

Overcoming adoption challenges post-Covid

Any such adoption of automation and robotics driven by Covid-19 will though bring with it various challenges which need to be addressed, especially as business operations begin to normalise. Firstly, it's important that businesses can effectively manage and process the huge amounts of data being pushed through these robotic and IoT devices, while at the same time deriving insights from the data which could improve future operations.

With many companies within the supply chain sector and beyond still reliant on outdated legacy infrastructures, they also need to not only consider whether their existing technology stack can handle these new data-intensive technologies, but also – should an upgrade be required – whether they can afford both the time and resources investment required into building this.

Therefore, replacing the legacy infrastructure with newer concepts like edge computing will play an important role within the supply chain's IT ecosystem. Take for example the following scenario within the sector. A warehouse worker using the "pick-by-vision" feature on assisted reality (AR) smart glasses can help automate manual order picking, sorting, inventory management, goods receipts and removal processes.

At a time when latency occurs and receiving information from the device is delayed, this can affect the worker's productivity and can cause further errors. Edge computing offers a solution here by relocating data processing closer to the device at the edge of the network, eliminating latency and therefore reducing incidences of network lag related failure. At the same time it creates new methods of gathering, analysing and redistributing data, and helps boost processing power to the edge of the network where the device is.

Ultimately automation has an essential role to play within the supply chain both now and in the future, something which has only been heightened as a result of the Covid-19 pandemic and the increasing demands it has placed across all aspects of the supply chain.

However, before the widespread use of automated and robotic devices can be implemented, organisations need to be confident they have the infrastructure in place to support and maximise such technologies. Edge computing negates the need to revamp the entire technology architecture, allowing businesses to benefit from the aforementioned devices, but on a larger scale and with minimal changes to or impact on current systems.

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