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# Automating a change

2020 brought with it a change in the way warehousing works. Supply chains have seen a significant boost in activity, thanks to a surge in e-commerce, and this has forced logistics operators along with retailers to make a choice; shape up or ship out. New and emerging technologies will define the warehouse forever; so how has automation transformed the supply chain? **Michelle Mooney** investigates.

## What needs to be sorted first

Automation doesn't just exist within the confines of the warehouse; it bleeds into almost every aspect of the supply chain. In order to gain a better understanding of how productivity will be impacted, it is essential to establish how introducing automation will affect different aspects of the supply chain. Phil Harrison Manager at BearingPoint says that "Automation extends beyond the warehouse featuring communication and order processing, and these also will have an impact on productivity." And it doesn't stop there; he adds that determining the correct type of automated equipment, and the level of it needed, for any particular process, is essential. In recent years, there has been a major boom in warehousing technology, including equipment, meaning that all aspects of a logistics operation should be considered before choosing the right fit. Harrison says that this typically would mean undertaking a "detailed business analysis, and diagnosis" to determine key factors.

## Cutting time without cutting corners

The processes involved in automation are essential to cutting costs for a business, increasing efficiency, and scaling operations, says Greg Contell, Supply Chain Management Consultant at digital transformation specialist Sigma Dynamics. The key to achieving greater outcomes, with "significantly less effort", he says, is to use the right warehouse management systems. By utilising these sorts of technologies, warehouse operators are able to reduce manual-based processes, which in the past have led to "inaccuracies and delays in the receiving, checking, put-away, storage, picking, packing and shipping of goods."

Contell adds that by adopting technologies that help to reduce avoidable errors, warehouse operators can enjoy "significant improvements in productivity" while also gaining access to new data,



which makes it possible to detect errors, and improve "less obvious operational inefficiencies."

James Smith, UK Managing Director of AutoStore suggests that efficient automation will help a business keep up with the times and avoid being left behind. He says that automation allows a business to "maximise its operations", ensuring that "demand does not exceed supply." Automation can be utilised to get rid of manual methods of storage, such as traditional shelving, which improves "space occupancy" says Smith. He also details that AutoStore's automated system allows warehouse storage space to increase by 400%, whilst also increasing picking speeds - which in today's current climate of heavy online demand, would benefit a warehouse greatly, allowing the company to stay on top of demand, and avoid falling behind. Using the right technology can greatly enhance operations, as Smith explains: "The average worker will on average 'pick' around 60-80 picks per person per hour, whilst an automated system can deliver approximately 300 picks per person at the same time, with this number expected to rise even further as the technology progresses."

## Making way for robots?

The purpose of automation is not necessarily to remove humans entirely from the equation, but instead, to enhance general productivity, by incorporating the efforts of both man and machine. Dr Gero Decker, CEO of Sigmasvio agrees: "The objective of any robotic process automation initiative is to have humans and bots working in harmony - leaving rule-based business processes to software robots while human employees apply their creative and critical thinking to higher-order challenges."

He adds that the implementation of automation technologies, is "as much about change management as it is about technology." And to this

end, employers will need to understand how automation will work for them, meaning setting up an informed workplace is essential.

So as automation seems to be the way forward, what sorts of efficiency gains might warehouse operatives hope to gain? Alexey Tabolkin CEO Eiratech says that automation will see order accuracy improve significantly. With automated processes, the 'holy grail' of 99% accuracy can be achieved, significantly cutting down on costs associated with returns arising from defective products or picking errors.

To ensure your warehouse is ready for automation and new technologies, Harrison suggests that your supply chain be examined; from inventory levels, to service: "Firstly, it is important to analyse the business options - how the supply chain and distribution network will impact inventory levels, material flow volumes, growth, and service level requirements. We would also evaluate the operations profile - how will the different sales channels behave throughout the year, in-week, in-day, for average and peak periods?" He says.

### Brexit and pandemic disruption

The current pandemic has caused chaos throughout the world, and Brexit has already put a strain on the labour force, as many workers from EU countries left the UK to go back home. Tabolkin says that by automating processes, disruption can be eased: "Automating retail with modular robotics will make it less victimised to disruptions caused by the pandemic, labour shortages and wage inflation."

### Constraining your warehouse with outdated tech?

An evaluation of e-commerce trends places pressure on a fulfilment centre, as these trends can fluctuate wildly and quickly. Harrison agrees: "A retail replenishment model is typically a day-to-day process, pre-planned and smoothed as much as possible whereas eCom is near real time. This places a huge demand upon the fulfilment centre with widely fluctuating in-day hourly demands to achieve the promised customer service levels."

He adds: For operations with medium to high levels of volume throughput in terms of orders, pick lines, units, there exists many examples throughout distribution centres of outdated technologies. These old technologies are constraining processes and holding Retailers and e-commerce back in coping with today's challenges."

So what kinds of traditional technologies are there? And what possible pitfalls could there be? Harrison explains that high-speed sorters have "an initial high cost" and have a fixed capacity for sorting batch-picked products to output stations. Systems like these, he says, provide limited flexibility and scalability, and are more suited to stable volumes, yet, not as easily suitable for e-commerce order fulfilment.

Contell suggests that another mistake warehouse operatives are making, is storing excess stock. "Wholesalers in particular can find it easy to fall into this trap, in an attempt to take advantage of bulk quantity discounts." He notes.

Instead of making this mistake, warehouse operatives should aim to reduce stock levels as much as possible, says Contell: making the supply chain leaner". He adds that using the correct software can help, as "retailers can benefit from instant access to accurate, high-quality data that can inform real time decision-making regarding inventory stock levels."

It seems the main concern in automation, is older technology which cannot keep up with new trends. Smith agrees: "Many supply chain and logistics companies are still operating mechanised equipment that has been installed for many years, which typically requires high



maintenance to keep operational, is slow when it is in operation, and is very energy in-efficient."

Decker adds that it isn't just about the type of automation used, but how it is used alongside other forms of technology: "For long-term success, automated processes need to be monitored to ensure they're operating as intended and following the rules they've been assigned. However, a robot cannot extrapolate data about its own performance." To this end, an online system can alert you to errors which the robot technology might not necessarily be able to do. "To access these kinds of analytics, you will need a process monitoring tool that can show you data in real-time, and in an easy-to-understand format." Decker explains.

### A change in perspective?

It wouldn't be surprising to find that many consumers measure every retailer, no matter the size, by how the biggest are performing. Tabolkin agrees, adding that whether "delivery times, returns policies, shipping costs" are judged, they will inevitably be compared to the giants. And if there is a failure to compete on things such as delivery times and returns, consumers may be lost to another retailer that does meet their expectations, which is why automation is so important to consider.

However, in recent years, there has been a change in the way automation is carried out, with a "democratisation", says Tabolkin. He adds that this has happened by an "increasing number of scale-ups [that] have disrupted the oligopolistic robotics market and offered robotics solutions and services at more affordable prices and bundled with advanced AI-powered software."

He adds that every company is different, and no matter whether you have "6,000 or six million SKUs", each operation requires a bespoke system that "resolves its own current challenges, but one which also looks to the future and ensures the initial investment in automation can grow with the retailer, and accommodate the latest innovations in retail automation."

### The do's and don'ts of automation

Choosing how to automate your warehouse comes with the possibility of failure if not done properly. Considering risks is essential if you want to get it right. Harrison agrees, and says a business should not commit to an automated design that to manage "absolute peaks" - instead, you should consider the capacity versus utilisation factor: "peak period volumes can be many times higher than average periods."

Another problem to consider, is that with escalating e-commerce sales, comes the rise of returns, which can be costly, and must be considered, says Harrison.

Importantly, Harrison adds, whatever the automated system installed, it must come with flexibility and scalability, because the rise in e-commerce is ever-changing and all sorts of outcomes could arise. ■



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