

Speed of innovation determines the warehouse of the future

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Many companies were not prepared for an increase in online orders of up to 500 percent this spring. How should we prepare our warehouses for a future with more disruptions? Pieter Van den Broecke explores three focus areas: robotisation, artificial intelligence and gamification.



Pieter Van den Broecke
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Let's explore two warehouses which both have their own story: The first warehouse was forced to shut down the company's webshop this spring - it lacked the capacity to process an increased number of orders. The second warehouse was able to increase its order processing capacity sufficiently. The company initially planned it would take three years to reach their online turnover target. As a result of being able to increase their order processing capacity, they achieved the target within three months. "What's more: this warehouse managed to take on the fulfilment for a webshop from another country within 24 hours. The same goes for the fulfilment of two large brands in a third country," says Pieter Van den Broecke, Managing Director Netherlands, Belgium and Germany at Manhattan Associates. "If, like this warehouse, you are able to handle an unexpected shift from the offline to the online channel without any problems, you can make a difference in the market. That's one of the most important lessons we learned over the past six months."

Small online orders

Now that many companies are slowly emerging from the crisis, new questions arise. Questions about the warehouse of the future. How can we prepare for future disruptions? Which processes and systems are needed? And what role can people play in the warehouse of the future? Van den Broecke gave that question some thought. "The biggest challenge is to process online orders that often only consist of one or two pieces. Many warehouses are used to working at a pallet or box level, but picking, packing and shipping small orders is something completely different. Especially given the tight cut-off times that many webshops handle.

Warehouses do not have three days to process an order, but have to ship their parcels the same day," says Van den Broecke. Warehouses that do not adjust their processes lose efficiency. Without measures, an order profile with more small orders leads to a lower picking density. "This means that warehouses have to look for new solutions which they can work with efficiently, despite all those small orders."

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Man & machine

Automation and mechanisation of processes offer warehouses extra order fulfilment capabilities and possibly extra storage capacity. "But also think of robots that are increasingly capable of performing physical operations at the item level. Automation and robotisation are crucial for a fast, reliable and efficient fulfilment process." Van den Broecke has high expectations of the deployment of robots, which partially can replace order pickers. "The big advantage of robots is that companies can increase capacity in the warehouse in a flexible way without having to commit themselves in advance to a large-scale automation system with a limited capacity. Moreover, the capacity that must be reached within three, four or five years to make the high investments profitable."

Whether companies opt for automation or robotisation: people continue to play a crucial role in the warehouse. "Not all operations can be performed by machines or robots. People provide flexibility, for example, when handling large or fragile products. Also, they offer the possibility to scale up quickly in the event of peaks. An unexpected increase in online orders cannot be absorbed by quickly adding a machine."

Gamification

The question is how DC activities remain attractive to people. How much fun is order picking when robots are the closest colleagues? How do you keep your associates engaged? Van den Broecke introduces the term 'gamification'. As an example, he mentions a fitness application such as Strava, which is popular among cyclists who want to measure their performance and compare it with that of their friends. "In a similar way, we can constantly give associates in the warehouse new challenges. We can reward them as they take up those challenges and complete them successfully. We can compare employee performance honestly. Moving a pallet can't be compared to moving a box or a loose item," Van den Broecke emphasises. "If performance is good, associates can earn points, for example, a gadget or an extra hour of leave." Managers can also set up joint challenges by setting a target of one million picks as an example. With gamification, we can keep the work attractive and challenging for the younger workforce who enter the market, the digital natives. By giving them access to the latest tools and empowering them, we can keep them engaged and self-motivated.

Versionless

Besides robotisation and gamification, artificial intelligence and machine learning are other important elements of the future warehouse. If you want to be able to process and ship even that last order on time, you will have to pull those orders through the system, as it were. "You can increase the picking density in the warehouse by merging orders into batches, but then you have to sort the picked items by order again. That again takes extra time. Artificial intelligence helps ensure that all orders are dispatched on time." Artificial intelligence and machine learning help increase operational efficiency. By comparing today's order profile with order profiles from the past, the system can predict with greater accuracy how much time it is needed to process all orders. Based on that analysis, the warehouse management system can release the right orders at the right time. "Important in this respect is that with the rise of the cloud, we are moving towards versionless software. As a result, companies always have access to the latest innovations and upgrades are no longer necessary; for example, when it comes to artificial intelligence. The speed with which we can implement innovations determines our customers' competitive position. If the processes and systems cannot follow the speed of change in the business, and a company is not prepared for the future, it will have a hard time to survive."