

# Robotics Poised To Answer Food-Retail Dilemmas



*AS MORE YOUNG ENTRANTS TO THE JOB MARKET ARE RELUCTANT TO WORK IN WAREHOUSES, RECRUITING SKILLED EMPLOYEES WILL BECOME INCREASINGLY DIFFICULT FOR FOOD RETAILERS. COLLABORATIVE ROBOTICS IS SET TO ANSWER THIS CHALLENGE, AND THE GROUNDWORK IS ALREADY BEING LAID.*

**I**n today's food-retail market, consumer expectations are at an all-time high. Online shopping habits not only fuel the expansion of distribution centres (DCs), but create exciting opportunities to develop new business models to meet demand.

A shift from linear value chains to value networks stands as a viable solution in responding to society's lifestyle preferences. However, one of the key challenges facing the industry over the next decade will be having access to a skilled and dedicated workforce.

A recent report by the McKinsey Global Institute assessed the impact of automation on the workplace and analysed how tech-

nology could potentially take over the 'predictable' activities carried out by people. One of the factors it identified as influencing the pace of automation was 'labour-market dynamics', with respect to the 'supply, demand, and costs of human labour as an alternative to automation'.\*

## Automation Potential

The report highlights the potential for automation at a geographic level. With this in mind, McKinsey detects, 'The technical automation potential of the global economy is

significant.' It also suggests that 'automation is needed to boost global productivity and raise GDP' – a hard claim to ignore.

Indeed, by automating any number of processes within a DC, it is already possible to increase operational efficiencies, improve ergonomics, reduce picking errors and shorten lead times.

Such market trends have already been analysed by Vanderlande's Director of Food Retail, Remko van Gils, who believes that we are "going to witness the automation of all DC processes. Finding alternatives to the dwindling workforce is going to set unique challenges for our customers.

"For example, in the next five to ten years, we will see a decline in the volume of people willing to drive trucks – a key part of the supply chain. This means being proactive and exploring such advanced technology as driverless trucks. However, we can already look to automation within the DC itself."



Expert Vanderlande's  
Remko van Gils





Logistics Vanderlande has a lot of experience in the field of robotics.

## Collaborative Robotics

For many in the industry, robotics may hold the key to overcoming these challenges.

A recent report in *The Wall Street Journal*\*\* highlighted the potential impact of robotics on the US food-retail market. In the majority of cases, automation and robotics were the pivotal factor in driving down labour, time and footprint costs. However, according to author Robbie Whelan, only 8% of DCs owned by the largest North American grocers are partially or fully automated.

Over the coming years, a technological paradigm shift is expected, as rising labour costs, coupled with a shrinking workforce, begin to take hold. This will rapidly create the need for food retailers across the world to start robotising the process steps in their supply chain. Whelan argues that attitudes are already changing, and as competition intensifies, the reluctance to invest in automation may give way to a renewed demand for innovation.

There are a number of emerging solutions that can help retailers to bridge this gap.

As van Gils explains, “We already have proven technology, and it is possible to robotise a significant portion of the supply chain with our automated case-picking (ACP) solution. This works by automatically (de)palletising groups of products. Not only does the technology exist, but it will become increasingly prominent.”

## Gradual Integration

As attitudes continue to shift, van Gils adds that the baton will be passed to robotic technology in a gradual way: “Our long-term vision is that food retailers might not need any workers in a DC where collaborative robots are installed. However, this will take

time, and DC processes change slowly. In the next five years, it is easy to imagine that the volume of people per workplace will decrease in tandem with the scarcity of labour.”

Ultimately, as less young people show a desire to work in warehouses, the drive for automation gathers further momentum.

“The industry needs to start developing solutions,” adds van Gils. “We’re being proactive in defining a response – in this case, robotics. The next step is to implement these solutions in a progressive fashion, where people and collaborative robots begin working side by side.”

## Advancing Technology

Initially, adding a robot to a manual workplace will not fully remove the need for manual labour. Existing robots are not able to perform all human tasks, but, in time, they will advance and take on more work, enabling human operators to support multiple robots. Two of the main drivers will remain the availability of people and fulfilling day-to-day deliveries.

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**Remko van Gils**

Director, Food Retail, Vanderlande

As technology continues to advance, the opportunity exists to fine-tune the approach to robotics, process by process, product group by product group. It is most likely that incremental investments in collaborative robots will come first by installing a low number of robotic units. For example, to perform order-picking.

One of the unique advantages to food retailers of investing in collaborative robots is their adaptability. As algorithms improve, it is predicted that robots will gradually ‘learn’ more, increase their capabilities and assume the full function of a person within a warehouse. With the heightened need for automation, demand for new solutions will develop rapidly. Growing market acceptance will subsequently drive volume growth, which allows new technology to become more price competitive.

## Exciting Opportunities

As today’s robots learn to handle more processes and product types, smart integration is crucial. This also enables the seamless transition to robotised logistics, while existing warehouse operations continue undisturbed.

In addition, collaborative robots can also be retro-fitted onto manual work spaces. In this context, today’s robots can assume certain tasks while ensuring that manual operations can be resumed at any time. With this approach, it even becomes possible to build individual robotised item-picking solutions.

“Robotics is going to be a central topic over the next few years, and food retailers should see this as an exciting opportunity,” concludes van Gils. “The advantage of the ideas we’re developing is that, with ACP, we’re already able to robotise the core processes connected to product flows. Next to that, we have started our Smart Item Robotics platform to develop collaborative robotics solutions and hope retailers will want to take the next step with us.”

*Vanderlande will be exhibiting solutions from the Smart Item Robotics platform at LogiMAT 2017, in Stuttgart, and ProMat 2017, in Chicago. ■*

Sources: \*McKinsey & Co. 2017. *A Future that Works: Automation, Employment and Productivity*. \*\*Whelan, Robbie. 2016. ‘Fully Autonomous Robots: The Warehouse Workers of the Near Future.’ *The Wall Street Journal*, 20 September.