white paper

The Great Grocery Retailing Fulfillment Challenge

We Optimize Your Supply Chain | DEMATIC

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Success in a Challenging World

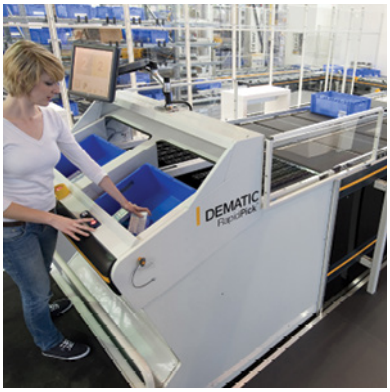
The Grocery Retail sector is in the midst of considerable market change, with radical shifts in the way consumers, work, live, and shop.

What are the forces influencing these new patterns of consumption, how is the cost to serve impacted, and what are the consequences for the retailers and their logistics processes?

There are a number of established and emerging trends within the European and North American food and grocery markets that have the potential to significantly disrupt the finely tuned mechanism that is the food distribution chain.

These trends include the rise of e-retailing in both home delivery and *click and collect* models, a shift by consumers from weekly or monthly big shops at mega-stores to smaller but more frequent use of local stores, and the growth of discounters such as Aldi and Lidl.

None of these trends in themselves are creating large changes in the market, but they have the cumulative potential to produce quite disproportionate disruption to established supply chain practices — all in challenging economic times that also constrain retailers' ability to adapt. No wonder that some foresee the end of a "Golden Age" for the large retailers in the face of new forms of competition — the Amazon acquisition of Whole Foods for example — while others see the good times for grocery consumers disappearing as the new models fragment the services offered and increase the cost to serve.



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Innovation and Diversity

The emerging grocery retail landscape has become highly complex, requiring innovative and highly diverse logistics solutions. While the challenges are real, there are huge opportunities to re-shape existing grocery supply chains for competitive advantage. Retailers who make sensible, considered decisions across their channels stand to gain greater control of costs and, at the same time, improve market offerings.

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The key to this is the ability to sequence products onto pallets by family group so that they are presented in an aisle-friendly manner — a particular challenge when, for example, fresh produce arriving at a cross-dock is unlikely to appear in the sequence that the stores want.

First, it is important to understand the dynamics of the market and the challenges ahead.

Online grocery shopping could grow five-fold over the next decade, with American consumers spending upwards of $100 billion on food-at-home items by 2025.

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Convenient Home Shopping — at a Price

Online food and grocery shopping is growing rapidly. Online grocery shopping could grow five-fold over the next decade, with American consumers spending upwards of $100 billion on food-at-home items by 2025. This is a staggering figure, but these sales will still represent only a small proportion of the overall market, and a good part is represented by online-only specialists and high-end retailers — new businesses that are not directly competing with the supermarkets.

Nonetheless, the retailers need to offer online shopping. This may not be in just a single channel but in several — especially in terms of delivery. Retailers may offer options ranging from delivery to domestic properties, to delivery at place of work, or to “dropbox” facilities at, for example, ride-share lots. Alternatively or additionally, an online order may be collected from a supermarket where it has been picked or delivered from a pick-point in a larger store, a DC, or a specialized online-only warehouse.

The difficulty here is obvious. In a big weekly shop, the consumer performs and pays for the picking and final delivery; however, with an online order some or all of this cost now accrues to the retailer. In the early days, with small order volumes, retailers were prepared to absorb this cost to attract customers. That is no longer a viable model.

Free delivery typically now requires a minimum order value of $50–$70, although some experts believe that an average order value in excess of $100 is required if costs are to be covered fully. At that level the online shop may simply be replacing the weekly big shop with more cost for the retailer and fewer opportunities to promote or entice customers to impulse purchase.

Meanwhile, there is the problem of picking, assembling, and delivering the order. Some early adopters chose to fulfill online orders from the shelves of their larger stores. This allowed them to achieve nationwide coverage quickly and relatively cheaply, and it worked as long as volumes were low. However, with larger volumes there are obvious conflicts between regular customers, order pickers for online purchases, and with replenishment activities as well. This may detract from an enjoyable consumer experience in the store.

Additionally there are built-in inefficiencies with an in-store pick. In a warehouse or DC, products are grouped to enable (as much as possible) the shortest pick journeys. The ethos of a supermarket is quite the opposite — they are laid out so as to expose consumers to everything available in the hope that some of this will find its way into their carts.

In many cities increasing regulation of truck sizes and times of operation are becoming significant constraints.

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Others have adopted a radically different strategy. Some retailers serve vast areas from just three or four online distribution centers. This eliminates cross-channel conflict, but must inevitably limit the ability to promise very swift delivery times. That is also a problem for retailers who fulfill online orders by picking in store overnight when the shop is closed to normal customers. By definition, the best they can offer is next day delivery, and a significant part of the online market has come to expect better than this.

Local Store Trends — the New Hot Spots

The second notable trend is the resurgence of the smaller, more local store model. These may not always be particularly small, but are typically either serving defined localities without easy access to a big supermarket, or are located at hot spots such as town centers, commuter rail stations, and the like. A limited range of fast-moving goods is carried, often emphasizing fresh “food to go” as well as staple items.

The offer from local stores is constrained, not just by economics but often by physical limitations. Prime locations in urban areas are unlikely to afford much in terms of either loading bay or back room space. Replenishment — especially for fresh food — must be in small but frequent shipments. There is little space to accommodate full pallets of product, or extensive chilled or freezer capacity back of store. Orders will usually be for less than pallet load, often for less than case load.

This requirement for split case or single item picking, especially for slower-moving goods, can be a problem. Traditionally one might set up the DC with two pick faces for the product, one for full cases and one for split cases. An alternative is to decant into split case totes and fulfill the smaller requirements by family using a goods-to-person automated system fed by a buffer system.

Another consideration is that local stores are unlikely to offer a solution to the online conundrum. They can’t carry the full range, there is no space to store assembled orders awaiting shipping, and there is unlikely to be adequate car-parking for a “click and collect” option, even if the order has been picked elsewhere. In many cities, regulation of truck sizes and times of operation could become significant constraints as they have in Europe.

Many urban areas have successfully implemented laws that increase minimum wage beyond upcoming increases on the national level.

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The Rise of Discounters

Another important trend is the rise of the discounters, in particular Lidl and Aldi. Although their growth has been remarkable, they still only account for a small percentage of the market. However, as with the other trends, their potential to disrupt the operations of the established retailers is out of proportion to actual market share.

Interestingly, discounters are expanding their ranges/number of SKUs and introducing other features such as cafés more typical of the bigger stores. It will be interesting to see whether they can retain their price advantage which comes, at least in part, from their minimum touch, distribution, and presentation approach.

These disruptive factors have come into play at an awkward time for the major grocery retailers. Profits have been flat at best in recent years and in some cases dramatically down. As in many areas of retail, the middle market is being squeezed as consumers look for either high-end quality or price value.

Additionally, it is difficult to attract competent, reliable workers for what is likely to be physically demanding, low paying jobs. Many urban areas have successfully implemented laws that increase minimum wage beyond upcoming increases on the national level. And there has been a period of food price deflation, which means there is less revenue to support a given cost of service.

Given all this, it is clear that the grocery sector will have to find ways of doing more by being smarter with its existing assets.

Store Friendly Sequencing will be an important aspect of the store replenishment cycle.

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The Cost of Service — a Challenge with Time and Space

In terms of logistics, what are the consequences of these trends and what are the constraints?

Mostly they boil down to controlling and (if possible) reducing the cost of service. The challenge is, what was essentially a simple system for warehousing and delivery is now frighteningly complex. With the old model of large supermarkets a very significant proportion of business could be transacted at the pallet or case level — goods in, racked, goods out, with little intervention.

Now, the same distribution network has to cope with local stores that neither need nor can accept full pallets — for slower moving goods not even full cases. So breaking bulk and reconsolidating becomes critical, and stores may be looking for replenishment several times a day rather than perhaps once every other day. Here preparing deliveries in a store-friendly way (items sequenced by aisle) will be an important aspect of the store replenishment cycle.

Then there is fulfillment for online customers that involves order picking at the individual item level. But pause a moment to consider the implications of a properly executed order for, say, $100 worth of groceries.

Clearly, there will be goods coming from, and to some extent needing to be maintained at, ambient, chilled, and frozen environments. In each of these it is important to separate products such as uncooked meats. For flavor reasons it is ill advised to co-pack meat with, say, fish. Delicate products, be they bottles of finest Scotch whisky, or soft fruits, may need different treatment. In addition, it is essential to separate out non-grocery items such as bleaches and cleaning products. That is a lot of bags or totes per order, many of which will have been picked separately and then need to be combined into a single delivery group.

Some retailers, in response to local and state legislation, may require customers to pay for plastic bags or offer bag-free shopping. That could mean delivery drivers having to wait while the consumer empties the delivery totes, or if the consumer is not at home, a new system must be devised to collect the totes on the next order.

So, left alone, cost of service overall is set to rise, and there is little chance of passing this on to the consumer. What's more, shoppers expect the online offer to be cheaper than a store, even though the retailer is doing more of the work. In addition, some retailers have reflected costs in differential pricing for local stores, but this has not been received well by customers who expect supermarket pricing at convenient locations.

One interesting solution being contemplated by certain retailers is to convert all or part of an existing big outlet into a "dark store" to serve local and online channels.

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Optimizing the Cube — and Going "Dark"

All the above suggests that floor space within grocery DCs (or wherever local store replenishment and online orders are fulfilled) is about to get extremely congested. So, too, will goods-outward facilities. Typically, a home delivery vehicle, limited as it is by the need to access urban streets, is doing well if it carries 20 orders per trip. That is a lot of traffic that a facility may not be designed for. To free up space it is important that the full cube of inbound delivery vehicles be optimized as much as possible.

All this extra, detailed activity also suggests that more staff will be needed — that is if reliable people can be obtained at the wage being offered. The only conceivable way forward is to automate processes.

How to respond depends very much on the retailer. One interesting solution being contemplated by certain retailers is to convert all or part of an existing big outlet into a "dark store" to serve local and online channels.

The dark store looks very much like a large supermarket with the aisles laid out with similar logic, but usually with wider spacing to improve traffic flows. With no ordinary customers in the way, there is opportunity for some considerable use of automation. This could include the automatic routing of both pickers by pick-to-voice or similar technologies, and order totes to the appropriate part of the pick face. Goods-to-person automation, fed by multishuttle systems are also appropriate especially for slow moving or batch-picked SKUs. And conveyor-based systems involving sortation and consolidation for van/route sequencing could also be usefully deployed.

Dark stores have so far been specially constructed, but with high property prices and overcapacity in some large stores as retail patterns have changed, is there another viable approach? The possibility of converting a portion of an existing large retail to a dark store hybrid is enticing.

There are many advantages in adapting an existing store: the building itself, lighting and other services, staff amenities and car parking are already present, and existing consumer parking can be sequestered to accommodate the delivery van fleet. Most or all order picking is removed from the customer environment and can be automated as required, but inbound logistics is essentially unchanged. It is a compelling proposition that could benefit still further through the application of increased productivity by automated techniques.

In Scandinavia and in the US, automation is being used to reduce the impact of claims for industrial injury due to lifting and stretching.

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A pallet-oriented warehouse or DC is usually quite good at using the full cube or volume of the facility. When we start breaking things down, it tends to be area rather than volume that matters. Given the costs of commercial property and the need for cost-efficient operations, it is vital that the full potential of the building is used. Here automated storage and retrieval system configurations could best optimize store density and performance.

Many warehouses and DCs could benefit from relatively inexpensive software and hardware automation. This automation may range from high-bay racking systems with operators at a height to inserting mezzanine floors to using straight-forward conveyor systems for efficiently moving totes or other containers.

Automation of the human element also has possibilities. Voice-directed picking is now quite common; vision-direction (via “smart glasses”) is rapidly becoming affordable. Both of these methods have been shown to improve pick accuracy. Combining voice direction with automated guided vehicles (AGVs) is also a possible future direction.

A further consideration is that of worker health. In Scandinavia and in the US, automation is being used to reduce the impact of worker compensation claims for industrial injury due to lifting and stretching. In the US firms such as Walmart are trying to pick by pallet layer, rather than individual case, wherever possible for just this reason.

The complex requirements of omni-channel fulfillment, flexible store replenishment, and advanced sequencing techniques will demand the greater use of automated technology for order picking and order assembly activities.

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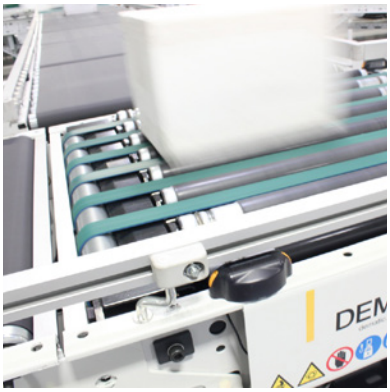
Automation Is up for the Challenge

Grocery retailers face an increasing challenging environment with downward pressures on pricing meeting higher costs, notably the living wage. Attracting suitable labor is a problem to be addressed not just by increasing labor productivity, but also by providing a safer and more rewarding working environment. The consumer demands ever more accurate and timely fulfillment through many channels.

If grocery retailers are to accommodate and also capitalize on the changing demands of the market, they will need to think carefully about how supply chain processes can be optimized and attuned more closely to the needs of the grocery market. To do this, grocery retailers will need to account for the subtle shifts occurring in consumer buying behavior and the pressures placed on retailer logistics activities through rising labor costs and the constraints of rigid property portfolios.

What is clear is that the complex requirements of omni-channel fulfillment, flexible store replenishment, and advanced sequencing techniques will demand the greater use of automated technology for order picking and order assembly activities. Intelligent automated systems applied and optimized in innovative ways will provide the means to meeting these challenges and will create new opportunities.



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About Dematic

Dematic is a leading supplier of integrated automated technology, software and services to optimize the supply chain. Dematic employs over 6,000 skilled logistics professionals to serve its customers globally, with engineering centers and manufacturing facilities located around the world. Dematic is one brand under the KION Group of companies and has implemented more than 6,000 integrated systems for a customer base that includes small, medium and large companies doing business in a variety of market sectors.

Headquartered in Grand Rapids, Michigan, Dematic is a member of KION Group, a global leader in industrial trucks, related services and supply chain solutions. Across more than 100 countries worldwide, the KION Group designs, builds and supports logistics solutions that optimize material and information flow within factories, warehouses and distribution centers. The company is the largest manufacturer of industrial trucks in Europe, the second-largest producer of forklifts globally and a leading provider of warehouse automation.

If you are interested in learning more about this topic and how we can help, please contact Dematic at (877) 725-7500 or visit: dematic.com.

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