

TRACKING THE CHANGE

After years focused on speed and hyper-optimisation, supply chains are rethinking their business models to offer the agility and flexibility today's market demands.

By Peter Howard.

Changes in grocery buying behaviour have shaken up the supply chain. With products finding new paths to the pantry, companies must find new ways to meet demand.

When Covid-19 reached Australia in 2020, localised panic buying caused weeks of empty shelves, giving the first hint of problems in the supply chain.

While the supermarkets willingly collaborated to move stock around the country, with Woolworths at one stage sharing stock with Coles to meet a remote community's needs, the supply chain cat was out of the bag.

Efficiency, speed, just-in-time manufacturing, and minimal warehousing may have been optimal in a perfect world, but weren't what was needed to support a nation facing a pandemic.

What went wrong

After the early bouts of panic buying, shopper behaviour began to change. Thousands turned to online grocery shopping, with unprecedented growth in home delivery. In 2020, online ordering of groceries increased globally by US\$60 billion over the previous year.

Other consumers began limiting their exposure in supermarkets by ordering online and picking up locally. They continue to do so today. Large numbers of people also began shopping for their non-perishables online, topping up with fresh produce at local independent supermarkets or convenience stores they hadn't previously used.

All this different buyer behaviour created new and previously unseen demands on a supply chain already under immense pressure.

New social distancing requirements had forced factories to reconfigure production lines and function with fewer staff across hastily introduced shift systems. Imported ingredients and packaging materials began to run out, forcing substitutions to be made and even temporary withdrawals of the product.

At the same time, producers were having to rethink their supply routes

because restaurants were closed, online ordering had grown and homes had become the new end point, adding further pain due to the significant increase in transport costs.

With so much change, supply chains couldn't possibly keep up. Having been optimised for efficiency and speed, they had little chance of success in circumstances demanding agility and flexibility. It was clear they needed to change their approach.

What makes a supply chain flexible?

While some of the changes in consumer shopping habits might return to pre-Covid models once the pandemic is over, many are expected to continue. Consumers have been shopping in these new ways for more than a year, and that's time enough to form a habit.

Recognising the change is here to stay, supply chains are looking at ways to transform their approach, including sourcing more products locally, carrying greater buffer stock, having a more resilient network, and introducing greater flexibility to move stock quickly from where it is to where it needs to be.

Keeping track of products on the move is one of the greatest challenges for supply chains. Movements can involve multiple supply chain partners, all of whom may be involved in the splitting or combining of pallets or loads, the use of different storage or delivery locations and the use of different modes of transport. For such complex supply chain activities to be effective, it's vital the information related to products on the move remains linked to those products at every handover and is continually visible to the supply chain controller.

Without visibility and traceability in a supply chain, confusion, limited fulfillment ability and the potential for the company to be exploited will result.

According to global data standards organisation GS1, this "can lead to an inability to capture the right demand signals to reveal shifts in demand, an inability to respond to demand shifts due to resource shortages, and an inability to redistribute goods where they're needed".

When it comes to grocery supply

chains, food safety and consumer health may also be at risk.

While many companies recognise the importance of visibility, it's of concern that only 44 per cent, according to research, have solutions that allow them to monitor their entire supply chain.

Know where, when and why

GS1 develops and maintains the global barcode standards many large grocery manufacturers use for production and supply chain data.

Having a globally accepted standard enables a high level of interoperability and inventory tracking between supply chain partners, adding visibility and accurate tracking of products moving through the supply chain.

GS1 Australia Manager Consulting John Szabo tells *Retail World* what those journeys may involve.

"From a logistics perspective, products may travel from one side of the country to another using various forms of transport from road, rail and sea," he said. "It's not unheard of to use air transport in urgent situations.

"Loads may be split depending on the size of the order and, if multiple forms of transport are used. Multiple logistics organisations may be used in the transportation of the product, as well."

With the supply chain journey now extending to homes, often through third party providers such as Uber Eats for the final leg, the need for traceability is vital, and the information contained in barcodes a vital part of the process.

"Home delivery means traceability is becoming ever more important in this day and age," Mr Szabo said. "Currently, however, traceability data such as batch, expiry date or production date aren't captured at retail point of sale. This would apply to home deliveries as well. Retailers have to rely on the consumer to check the batch or production date when a recall is posted.

"Traceability information is usually captured by large retailers into their main distribution centres. Foodservice organisations have similar processes. As product moves closer to the

consumer, traceability information becomes less and less.

“If you’re unable to track or trace, you put your organisation under a lot of risk and potential pain if something goes wrong. The biggest impact if an organisation doesn’t have adequate traceability processes is in the event of a recall.

“A lack of traceability as to where a specific batch of product being recalled is stored, or who it was sold to, can result in a massive recall of all batches of the recalled product. This not only carries a large financial cost but can also severely damage the product brand.

“Food safety is another important aspect of traceability. Being unable to identify and isolate potentially harmful products can severely impact consumer safety.”

Integrated equipment and processes

At the heart of traceability and visibility are the familiar but widely misunderstood barcodes. These play a key role in how a product is traced, potentially down to an exact location, such as a warehouse bay or store, but the barcode alone isn’t enough.

“How accurately a product can be traced comes down to three aspects,” Mr Szabo said. “There’s the ‘barcoding’

aspect and what information is encoded into the barcode. There’s the systems and hardware aspect, relating to the scanners and software capturing the data and storing it in the appropriate system. Then there’s the process of identifying the critical events and movements, and ensuring information is accurately captured at those points, which is just as important as the barcode and the scanner.”

If any of those aspects aren’t designed for the level of accuracy required, the results are going to be inadequate through missing information, misread or unreadable barcodes, or movements not captured at all.

The combination code is coming

Despite their size, barcodes have always carried a large amount of data, and with the latest technology including QR codes, a 2D form of barcode, their potential has caught the attention of many in the commercial world.

“We’re seeing more and more new barcode types out in the market,” Mr Szabo said. “The QR code is the most easily recognised, and these can be natively scanned on iPhone or Android phones using built-in cameras, which makes them very attractive to product marketing managers.

“Scanning a QR code can take you to

a webpage where you can find cooking instructions, assembly instructions, ingredients and all manner of different information, including validating of a product’s authenticity.

“However, QR codes aren’t currently scannable at the check-out. As a result, some products end up having more than one barcode on them: one for scanning at the check-out (linear barcode), one for marketing (QR), and potentially a totally different barcode that works solely with a specific consumer app.

“GS1 is working with industry, looking at reducing the number of barcodes on products while still delivering the functionality required – for example, point of sale scanning, marketing material, nutritional information, etc. We’ll see a day when one barcode will have multiple uses, both in logistics and supply chain, and for the consumer.”

Moving forward

It’s clear that supply chain adjustments to build in flexibility will need to be supported by technology giving visibility and traceability.

To find out more, GS1 Australia can be contacted for advice on implementing the barcode technology required. Details are available at gs1au.org. GS1 Australia is a not-for-profit organisation.

CASE STUDY

Cold Xpress is a Melbourne based cold and refrigerated delivery company that began in 1998 with a 12m refrigerated container. Today it operates from 26,000sqm premises with a fleet of more than 100 trucks going out to metro and country Victoria every day.

Retail World asked founder and Managing Director John Di Losa about the importance of traceability to the business.

“We’ve installed a transport management system and a warehouse management system, and they’re both linked up to our conveyor, which at 80 chutes is the largest and the longest in Victoria,” he said.

“We bring bulk loads of cold and frozen products into the warehouse from our customers and then we use those products to make up smaller mixed loads for delivery to thousands of their customers every day.

“We have an automated picking system, and whether it’s 1D, 2D or QR, we can read any barcode.

“A lot of customers are linking into our system so we can create a label with their own barcode, and they don’t have to do anything. Other larger organisations that prefer using their own systems simply add CX in front of their barcode, and our scanners can then recognise it.”

Mr Di Losa says there may be seven, eight or even 10 barcodes on one box. Some may reference the actual box, some may be a product code, some may be a store’s barcode, and there may be different labels on there, too.

“When that box goes through a scanning conveyor belt, the scanner needs to know which one of those barcodes it has to read,” he said. “Otherwise, we’d have no way of knowing what’s in the box or where it’s going.

“By adding our unique identifier, which is CX, in front of the customer’s own unique barcode, and also adding the box number and number of boxes at the end, we can accurately identify every box, in every load, all the way through the supply chain journey to the drop-off point.

“Our customers trust us to maintain the cold chain. That means us making sure that the customer’s product is kept at the same temperature as we received it. We have full traceability on how we handle products from the second we pick it up, bring it back to our warehouse and deliver it. Everything is always being monitored.

“We couldn’t do that without having barcodes that ID everything and data loggers that monitor temperature conditions.”