Technological developments are driving innovation in bricks-and-mortar and pure-play retailers at a pace never seen before, but what impact are emerging cutting-edge technologies having on retailers' warehousing and logistics capabilities behind the scenes? **Ben Cooper** investigates

The virtuous circle of innovation

Dixons Carphone is in "very good shape to have another successful year", according to chief executive Sebastian James.

The mobile phones and electricals powerhouse posted a strong first-quarter performance last month, with group like-for-likes up 8%, driven by its core UK and Ireland arm.

The sales rise followed an impressive trading performance in its first full year as a merged business as sales and profits increased. The retailer achieved record customer net promoter scores in the 13 months to May 2, while its pricing was at its "most competitive ever".

The peak period, which now stretches six weeks from Black Friday into the new year, was "particularly strong with both small and large white goods, as well as large-screen TVs, selling very well", the retailer reported.

It is a remarkable story, not least for the way Dixons Carphone has had to adapt behind the scenes. With increased phone and electricals sales in store, as well as growth in big-ticket online sales and mounting demand for home delivery, the retailer has had to look to its operational network for efficiencies, and technology is at the centre of that.

On Black Friday alone, its state-of-the-art branch fulfilment operation in Newark despatched more than double the amount of online orders than it would normally handle on an average day in November. In its big-ticket home delivery network, it took more orders than it has ever done in a single day and more than six times the amount it did the weekend before.

It is no coincidence that Dixons Carphone's Black Friday success coincided with the culmination of a four-year drive to move reliance on parts of the supply chain away from third parties and introduce greater efficiencies in its own business.

The strategy says a lot about modern retailing. With margins so tight and competition so great, growing sales and consumer loyalty are only half the picture. Behind the scenes, retailers are making great efforts to adapt their operations and management of their end-to-end supply chain.

Smart technology

Pleasing consumers has always been the goal – how business achieve that, and do it profitably, has got more complicated in recent years. Emile Naus, partner and technical director at supply chain management consultancy LCP Consulting, says that appetite from consumers has forced retailers into a whole new direction and technology is now catching up.

"With the ways that omnichannel has changed there are very different requirements in operational terms for retailers; they're effectively interacting directly with consumers ↘

from their supply chain. In a store you interact with a customer, you talk with a customer. This is a very different approach.

"People are almost shopping straight out of the distribution centre, so automation in warehousing is moving very quickly and automated picking systems are moving in fast," he says.

The need for smart technology that drives speed and efficiency through a network has never been greater. With online retailing surging and shoppers wanting ever greater convenience, it is a race that is getting faster, especially with the vexed question of how to turn a profit from home delivery and even click-and-collect now on every boardroom agenda.

You only have to look at examples such as John Lewis and Sports Direct charging for click-and-collect orders while having to grapple with Amazon's new one-hour delivery service to see the challenge.

With such tight margins and so little room for error, even among the pure-play retailers that do not have costly store estates to worry about, wastage of stock through errors in fulfilment and delivery is bad news. It is a relatively new problem, and Naus says that many companies are still managing this balance.

"Network design is about the balance of service with operational cost," he says. "If you look back over the history of retail, businesses have consistently pushed back their costs and tried to get customers to do more things such as with self-service, self-scan and click-and-collect. With home shopping it has been the exact opposite, it's been getting more expensive, especially on small items.

"Retailers are thinking about all this now but there's still a limited understanding of the true cost of networks."

An area of the supply chain that can often be overlooked, but is nonetheless crucial for reducing costs, is businesses' workforces, according to Andrew Kirkwood, regional vice-president for the EMEA region at supply chain software specialist JDA. "The biggest cost in a DC is the workforce and so we're seeing a trend in investing in workforce management software so that people are in the right place at the right time and have more efficient planning of shift patterns. If you get that right you can have significant impact on costs."

The UK is already a long way down the road of ecommerce maturity, further than most countries in the world. Even in Europe's largest economy Germany, ecommerce is a relatively small proportion of shopper spend. But international warehousing operator WCS's chief executive Joshila Makan says these are big discussions that pretty soon all retailers will need to have in any market. "All over Europe retailers are being put under pressure in this area," she says. "Chief technology officers and chief executives are now saying they have got to operate better and change their technology to cope with the influx. They are moving and if they aren't they will have to."

Retailers will know very well that behind every shopfront, every online product page, and every sale is a large – often huge – supply chain backing it all up. Ecommerce has become so advanced in the UK that retailers here are at the cutting edge, and so is the technology, yet there are a lot of unanswered questions, especially in the service-to-cost debate.

With pure-play retailers having changed the game, the race for margins in the supply chain is tougher than it has ever been, but with big leaps in technology being made, new possibilities are emerging all the time for retailers dedicated to growing sales and customer satisfaction.

Lessons from pure-plays on efficiency and managing stock

Driving down operational costs is hard for retailers that have to manage a sprawling network of stores and ecommerce fulfilment, but there are ways multichannel brands can look to pure-plays for inspiration.

Andrew Kirkwood, regional vice-president for the EMEA region at supply chain software specialist JDA, says online giants use technology to intelligently manage stock throughout the journey along the supply chain.

He says: "The pure-play model is about building huge distribution centres and then getting as much output through them, making them as operational as possible. But it's also important to think about the whole network, such as with Asos where it's about being able to use the inventory not just in the DCs but throughout the network."

New technology is enabling logistics providers and retailers to do this in very exciting ways, and bringing more power and control than ever before.

International warehousing operator WCS serves a range of clients including Nisa in the UK, and its chief executive Joshila Makan says that full visibility and real-time data are the powerful new weapons retailers want.

She says: "Right from scheduling a delivery there can be a lot of wastage and inefficiency; retailers need to be able to efficiently schedule themselves into the distribution network and have total visibility of the supply chain so they can plan better.

"They need to have user interfaces that they can configure and plan deliveries in real time."

Asos is focused on using inventory not just in the DCs but throughout the network