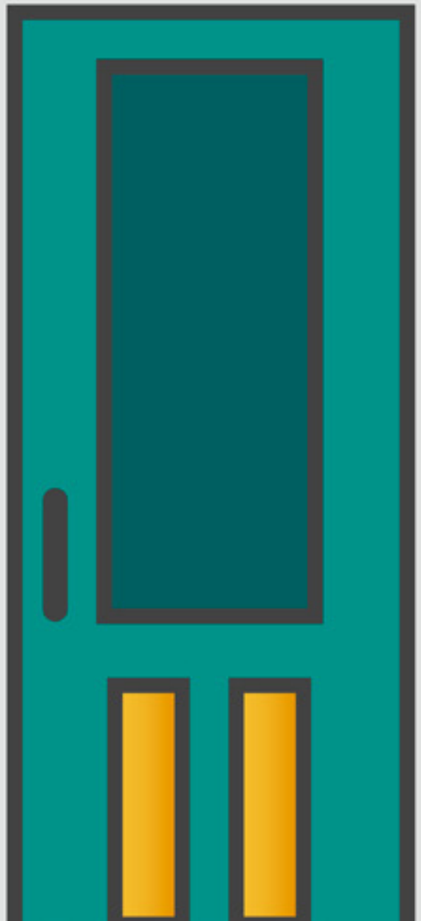
What's in store?

Unleashing the power of retail innovation



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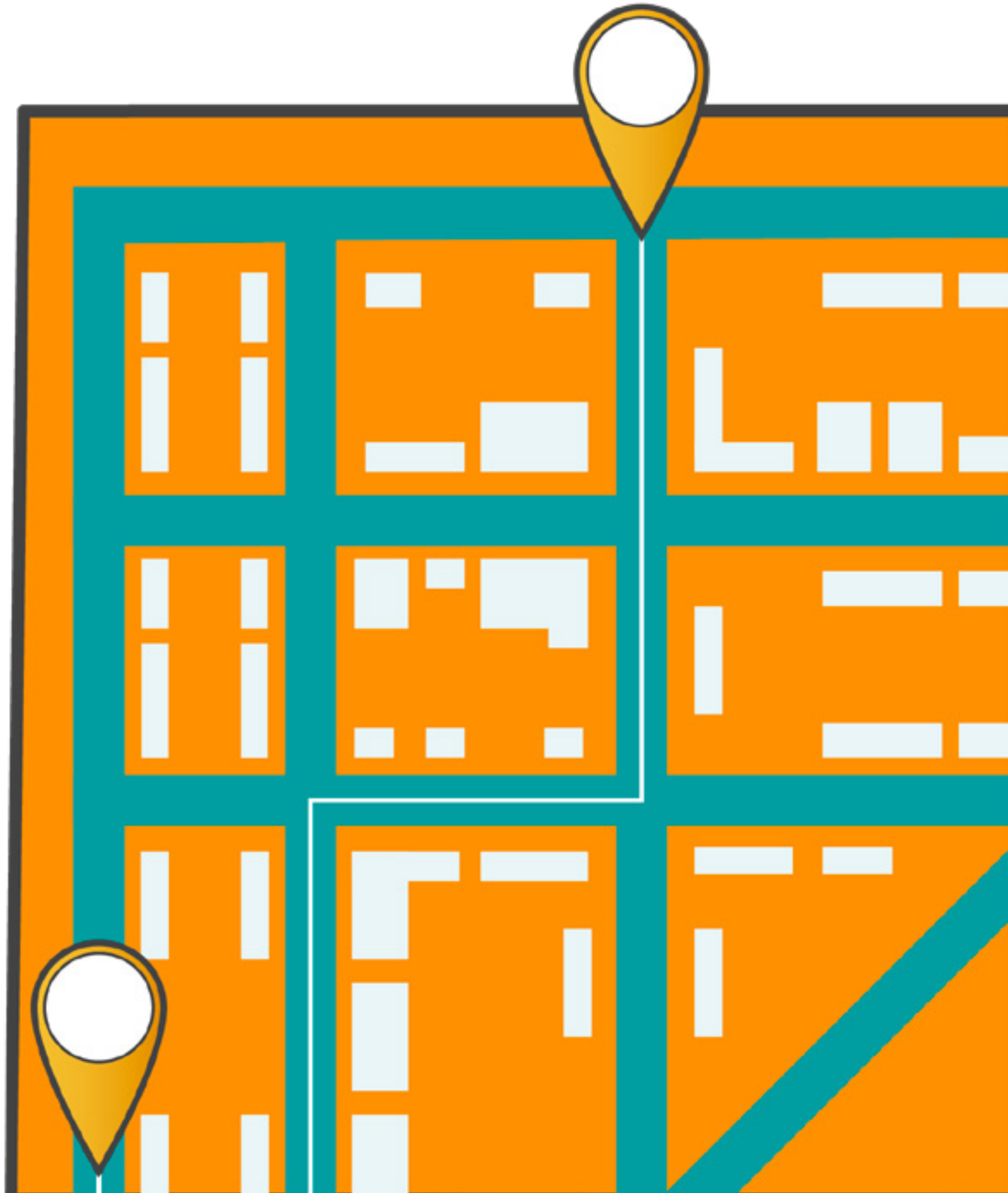
In no sector has the age of digital disruption had a more significant impact than retail. The rapid rise of ecommerce - accelerated by the Covid-19 pandemic - has put a huge amount of pressure on physical retailers.

Global e-commerce sales have increased by more than 160% over the last five years - from $1.8 trillion in 2016 to $4.9 trillion in 2021 - steadily commanding a greater percentage of overall retail sales. It's estimated that online sales now account for 30% of total retail sales in the UK, meaning physical retailers have had to adapt in order to survive.

As such, retail innovation and digital transformation have vital roles to play in the future of the sector. This has become clear in recent years, with many retailers responding to the rise of ecommerce by using technology to enhance the customer experience, maintain customer loyalty and increase employee productivity.

For example, convenience chain 7-Eleven recently introduced a new app-based delivery service called '7NOW Pins', which delivers items like food, beverages and household goods to popular public locations.

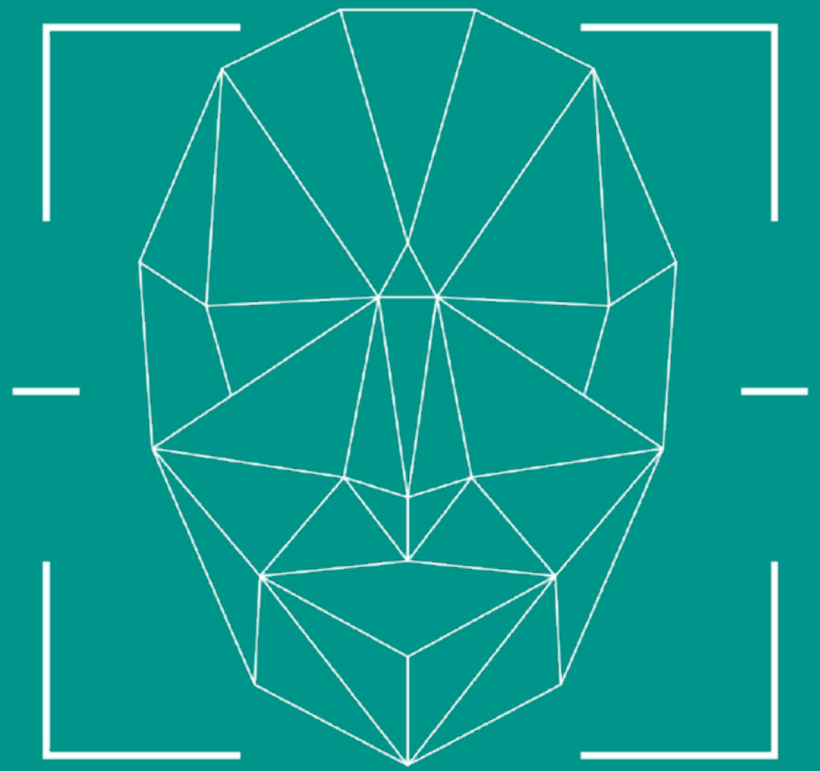
Customers can choose from a range of nearby 'pins' located in places that wouldn't traditionally be served by online delivery - like parks, beaches and entertainment venues - and have their items conveniently delivered to wherever they are in less than 30 minutes.



In 2020, M&S became the first UK food retailer to incorporate on-the-spot payment capability in its stores through its 'Pay With Me' service. Instead of having to wait for a self-service or manned till to become available, customers with a small number of items can check out with a staff member while they are queuing. The staff member simply uses a handheld device to take contactless payments, helping to reduce queues and provide customers with a safer, more efficient shopping experience.

These are just two examples of retailers that have been prepared to innovate in the face of evolving customer needs and preferences. There are many other ways technology is being used to solve some of the retail industry's biggest challenges.

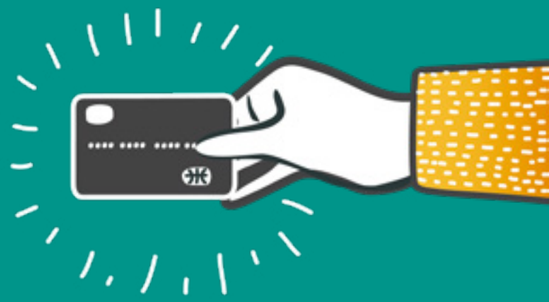
Fighting fraud

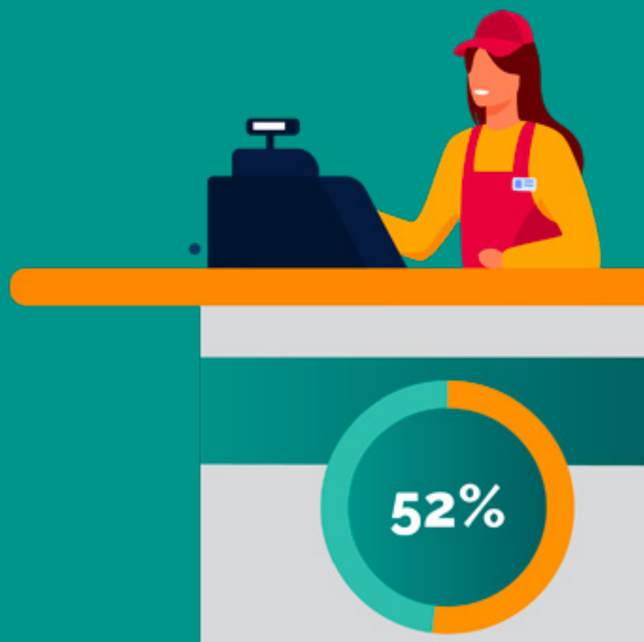


Once they get customers into their stores, theft and fraud - whether through self-checkout theft or underage purchasing - are two key problems that retailers are constantly fighting to solve. These are widespread problems that are costing retailers - particularly supermarkets - huge sums every year.

- A quarter of shoppers have committed theft at a self-checkout machine at least once
- One in five shoppers admit to regularly stealing items while using self-scanning checkout stations
- Supermarkets with self-service checkouts are more than 30% more likely to experience shoplifting than those without

With self-service checkout machines now ubiquitous in nearly all supermarkets - and a growing number of retailers - this is a problem that must be addressed. Enter: AI technology. AI-based tools such as computer vision and image recognition can help retailers fight crime and fraud more effectively.



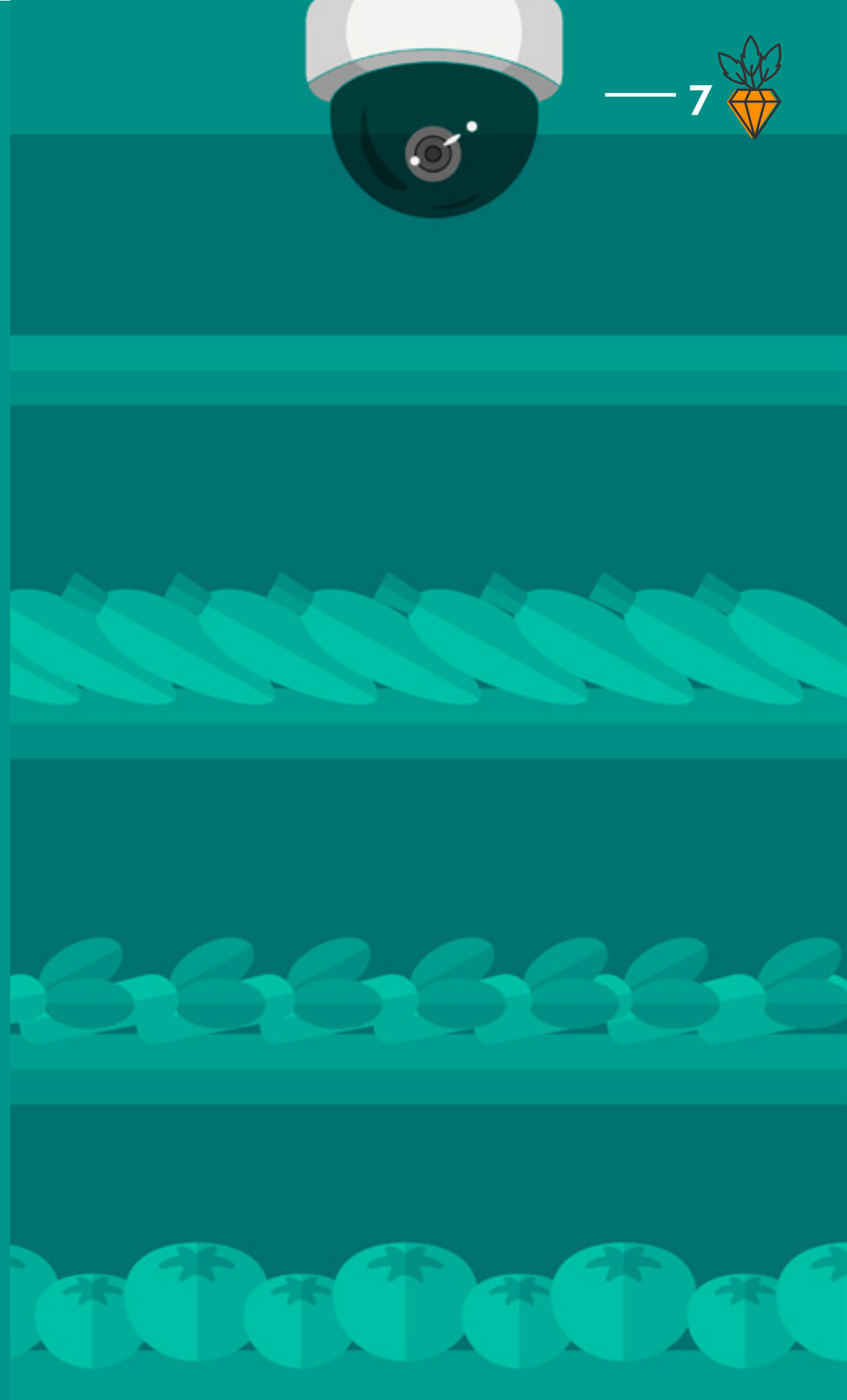


For example, computer vision technology can be implemented alongside traditional weighing scale systems to prevent customers from tricking the system. It can monitor what customers are scanning through self-checkout machines and flag any anomalies in real-time.

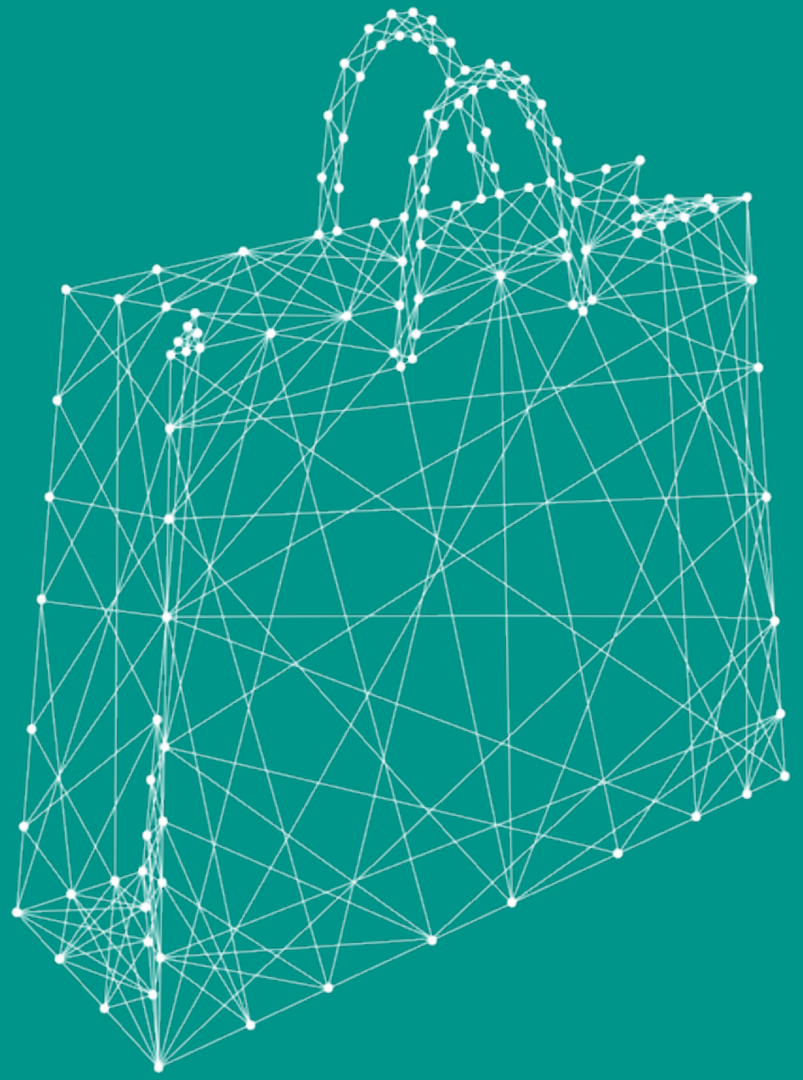
This could include scanning expensive items through as less expensive ones based on their weight - e.g. scanning steaks as carrots - or using the price sticker of a lower priced item to cover the barcode of a higher priced item.

Similarly, image recognition software can be harnessed to spot suspicious behaviour. Sainsbury's recently trialled an AI-enabled concealment detector in several of its stores, which stopped thousands of attempted thefts by spotting if customers were attempting to steal items and sending a short video to security staff.

But this is just scratching the surface of how AI technology - most notably computer vision and image recognition - can be used to drive retail innovation and transform the sector. As well as being pivotal in the fight against fraud, AI technology has the power to drive a new era of retail - one characterised by smarter systems, more efficient operations and an unparalleled customer experience.



Retail's digital future



implementing digital transformation plans expect that their own digital investments will increase revenue in the next 12 months

According to a 2021 survey of retail executives, 75% of retailers implementing digital transformation plans expect that their digital investments will increase revenue in the next 12 months. An even greater proportion - 97% - expect to see increased profitability in the same timeframe.

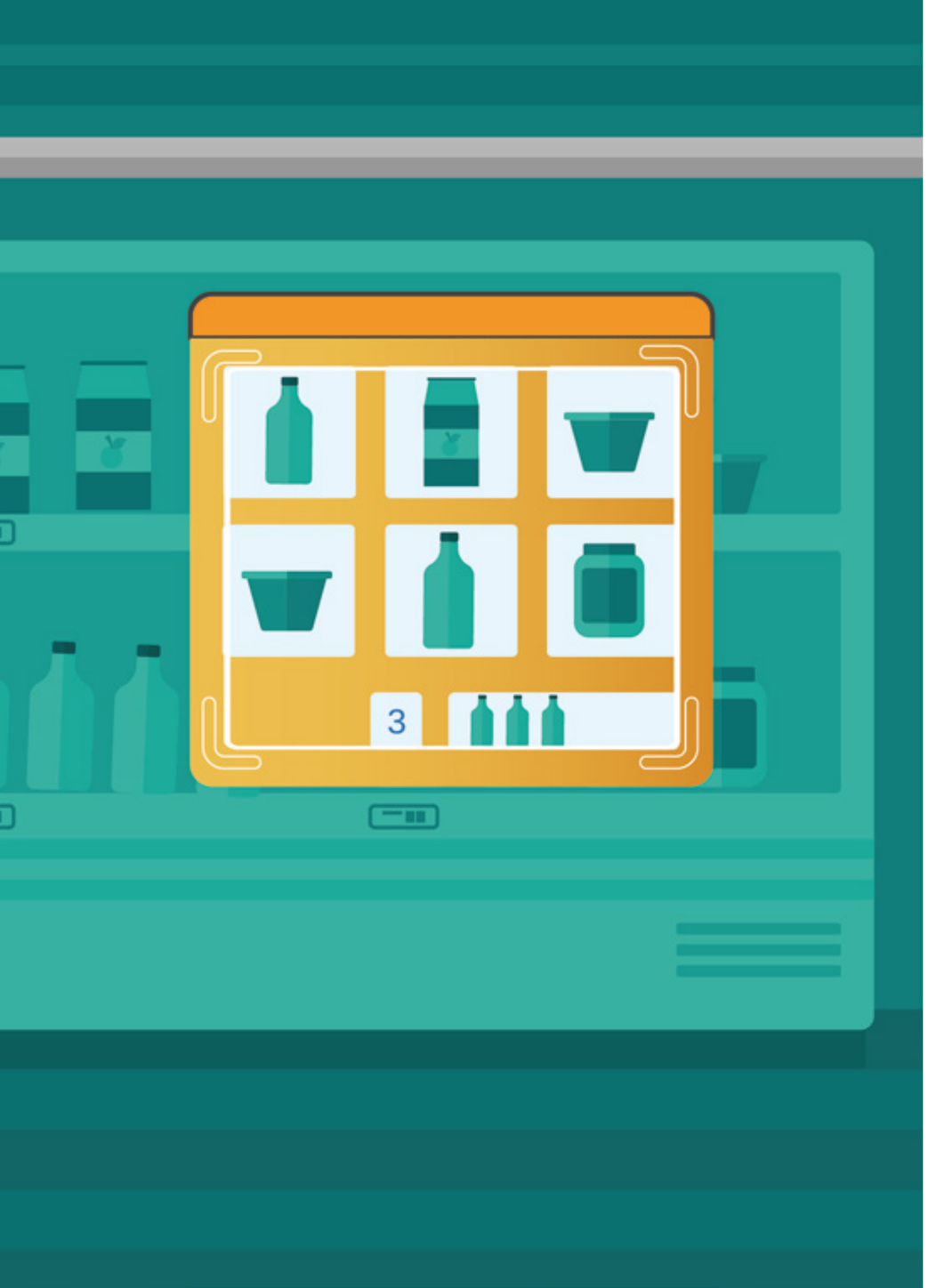
This clearly shows the ROI that can be achieved if retailers are prepared to adopt a digital-first mindset. But where should you focus your investment? Which technologies will be central to retail's evolution over the coming years?

Boundless stores

One area where AI will have a key role to play is the ‘boundless store’. Seen as the future of the retail shopping experience, the boundless store concept incorporates AI and computer vision technology for forecasting stock, personalising the shopping experience and allowing frictionless shopping via an auto-detect basket.

The goal is to provide a seamless shopping experience, enabling customers to purchase items without having to interact with a physical checkout. Computer vision technology detects when customers pick up or return items to a shelf, immediately adjusting their bill and charging them accordingly through a connected bank account when they leave. This means customers can simply walk into a store, pick up the items they want, and walk out again without any physical interactions with staff or payment systems. This requires a computer vision system that can:

- Consistently identify which products are on the shelves through object tracking and detection
- Accurately follow items in real-time to determine when they have been added to or removed from a shelf
- Recognise when specific events - i.e. the shopping of a product - have occurred



Having such a system in place would provide a much more streamlined and efficient shopping experience for customers, with the potential to integrate it into a broader retail solution that provides customers with real-time recommendations based on their shopping history. It can also provide valuable benefits for the retailers themselves - most notably enabling them to reallocate in-store resources to the most value-adding areas and more accurately anticipate inventory shortages before they become issues.

This is exactly what Amazon is doing in its Amazon Fresh stores, which don't have any physical checkouts. Amazon's 'Just Walk Out' computer vision technology automatically detects when products are taken from or returned to the shelves and keeps track of them in a virtual basket. When shoppers are done, they can just leave the store and their Amazon account is automatically charged - providing a convenient and effortless shopping experience.

Customer engagement

Computer vision is poised to tackle many retail pain points and transform the customer experience. For example, customer journeys can be redefined by using data to improve store layouts. Cameras with computer vision capabilities can track customers' movements to identify purchase patterns and 'hot areas' that can inform decisions around product placement and staffing.

This is exactly what Samsung did in pop-up stores dedicated to the pre-launch of the Galaxy S9 smartphone. It collected comprehensive footprint, dwell time and product interaction data in different store zones, enabling it to adjust the store layout in real time. Any bottlenecks could be quickly identified, thereby improving the shopping experience and driving conversions.

AI technology can also be used to enhance in-store personalisation. Virtual mirrors or virtual fitting room solutions provide perfect examples. These technologies can show customers a range of contextual information and make real-time fashion recommendations based on the items they try on. This can help customers connect with the brand and provide a superior shopping experience.

Operational Efficiency

AI and computer vision technologies also have vital operational roles to play, specifically in areas such as inventory management. According to a recent study, **64% of retailers are planning to deploy new solutions** related to inventory optimisation within the next two years. This could include computer vision cameras that alert staff about incorrectly placed products and gaps on shelves, or AI-powered inspection systems that notify staff of low-stock products and can detect damaged packaging.

Having solutions such as these in place means many of the manual tasks that currently demand a considerable amount of manpower time can be automated. As a result, employees will be free to focus on customer-oriented tasks and help improve the store's level of customer service.

At the same time, it empowers retailers to leverage the data these systems collect to make faster and more effective decisions. Whether plugging stock gaps, repositioning products or simply increasing operational efficiency, customers' propensity to purchase - and in turn business revenues - will be increased.

More recently, UK supermarket chains Asda, Co-op and Morrisons have started testing an automated age-verification system to save employees time and reduce checkout waiting times. The system uses cameras at self-checkouts to estimate each customer's age using algorithms trained on a database of anonymous faces. If customers consent and the system guesses their age as being over 25, the customer can check out without having to wait for a member of staff.

Unlock your AI potential

What's in store?

This all highlights the huge potential for AI and computer vision in retail. However, the industry still has a long way to go.

Are you ready to realise the potential of these next-generation technologies and drive retail innovation in your organisation?

Here at Dae.mn, we have the skills and industry expertise to kickstart your AI journey. We know how to harness the readily available platforms - such as AWS Panorama - to drive innovation and digitalisation.

Are you ready for computer vision? Take our free maturity assessment to determine your maturity level and unlock your potential.

https://daemn-cv.scoreapp.com/

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