Comparing the Just Walk Out stores in London

February, 2022

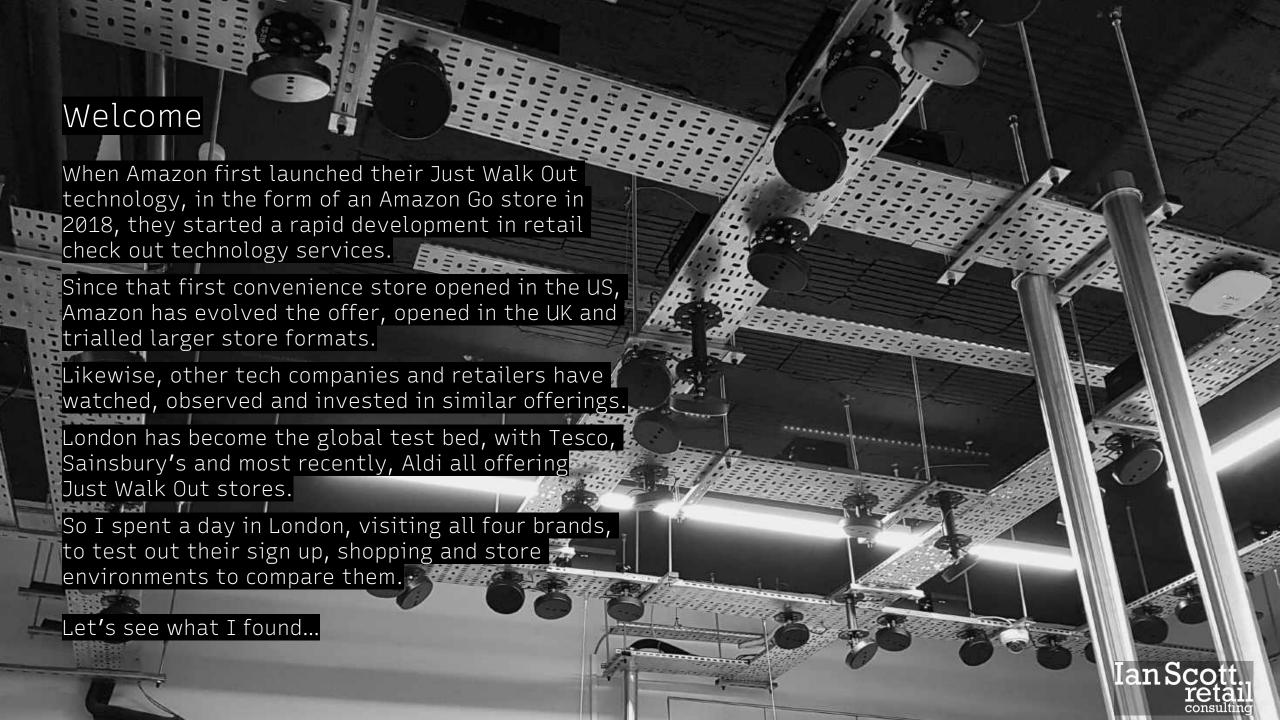
Ian Scott. retail













How Amazon Just Walk Out works

Hundreds of cameras are placed around the store. They're on shelves and above aisles, but they don't use facial recognition technology.

Instead, the cameras use computer vision – the process of allowing machines to "see" what is in front of them and determine what an object is – to detect when an item has been taken from a shelf by a customer and who has taken it. The system is also able to remove an item from a customer's virtual basket if it is put back on the shelves.

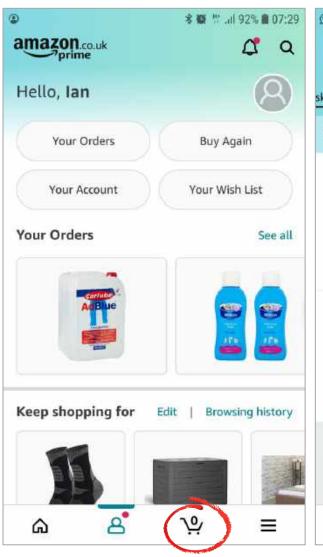
By using a network of cameras, Amazon is able to track people in the store at all times, ensuring it bills the right items to the right shopper when they walk out, without having to use facial recognition.

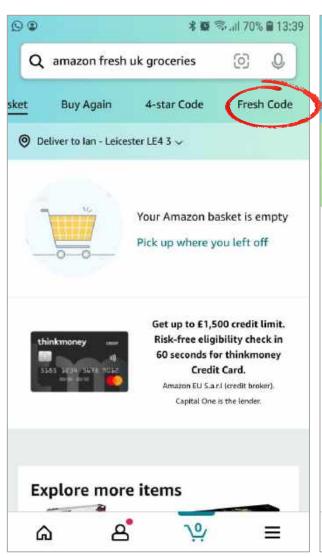
Underpinning the computer vision is deep learning. At their simplest, the systems are basically advanced pattern recognition and allow for machines to draw conclusions from vast datasets.

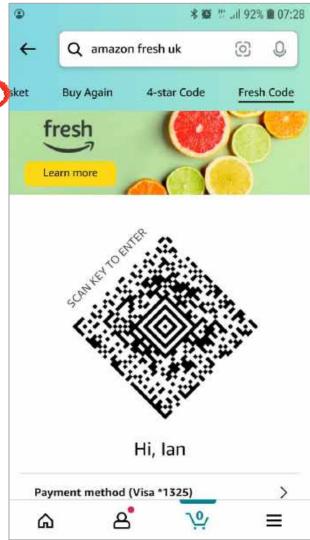
There are some human employees working behind the screens at the Go store to help train the algorithms and confirm when they have correctly identified a product. Humans also restock shelves, help with product locations and are employed as fresh food chefs. However, the majority of the data collected by cameras is analysed in the same way the Amazon Echo recognises voices, in the firm's large data centres.

The firm also says it uses "sensor fusion" during the shopping process. It's likely this systems involves combining data from many sensors – these include weight sensors in the shelves to track individual products.









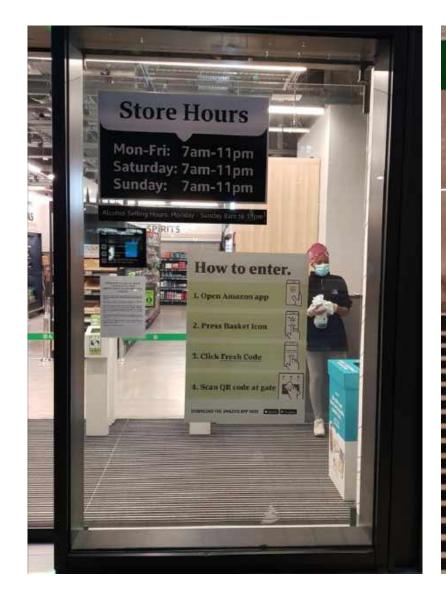
Like the other three retailers, Amazon requires you to use their app for access into the store.

Many of us already have Amazon Prime and this app provides a simple access.

Click on the basket icon at the foot of the home page. Then top right, click on the Fresh Code tab. Finally, scan the QR code into the entry gate.

In addition, you can scan a debit card already connected to a Prime account and most recently, shoppers can use Amazon One to scan hand palm for entry.





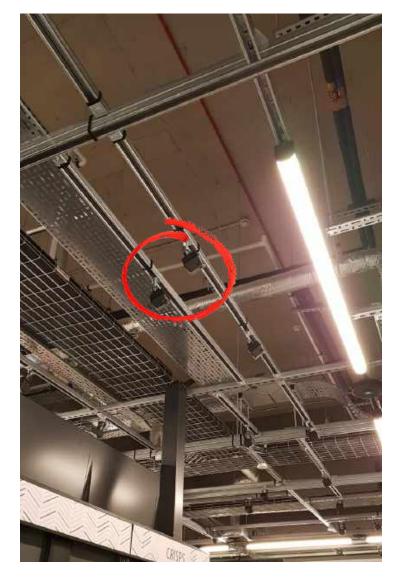


This process took about 15 seconds, and proved seamless.

However, shoppers without the Amazon app will face the same time considerations as the other retailers.

More on this subject later.





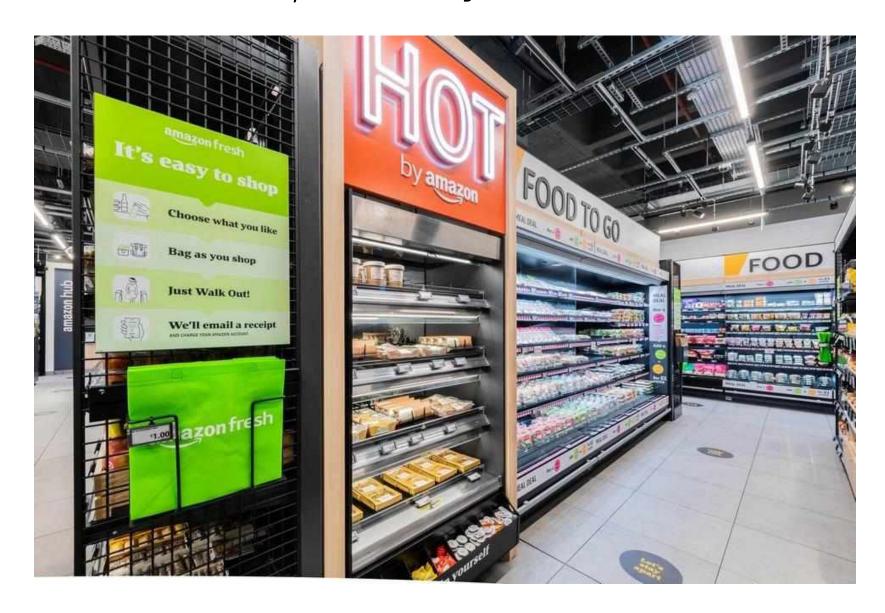


The technology is clear to see throughout the store.

The ceiling is a lattice work populated with the cameras.

The shelf sensors can also be picked out, as a multi-layer of metalwork indicates.





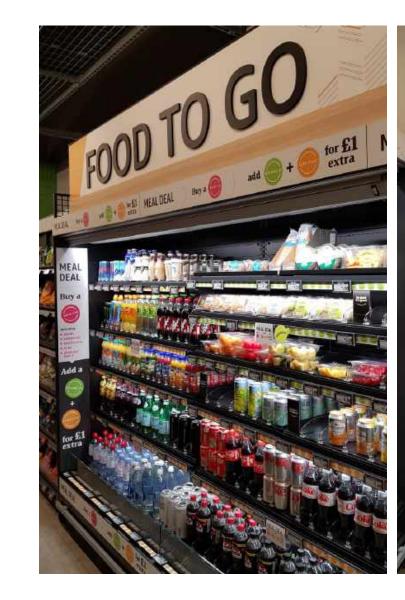
Aside from the much talked about tech, we need to consider the basics of store design and layout too.

The Fresh concept works well in this respect.

Navigation is easy with high level category signage. This is important with high levels shelfing that restriction visibility across the store.



Abc





The strong category signage is supported by well lit shelves, allowing the product to stand out strongly.

This might sound obviously, but so many food retailers fail in this respect.





Electronic shelf edge ticketing is probably no surprise here at Amazon, offering all pertinent information around the Meal Deal. It's intriguing to see the Offer Ends date. This is usually applied to encourage purchase before the deal ends. But in this instance the deal ends in over 10 months...

The Amazon hub is an obvious addition to the Fresh concept, providing parcel pick up and return services.





Hot drinks area





One of my favourite fixtures in the Fresh store is this Hot Coffee space. The signage is clear and easy to understand. And the choices are simplified, with a standard price for everything.

Messaging introduced two milk offers, semi-skimmed and Oatly. While so many cafes strive to offer thousands of options, this more basic offer fits well with the city centre grab and go environment.



Beers Wines and Spirits



Unfortunately, I visited the store at 7.30am and the BWS category was closed off, with shutters over the shelving.

But it appears that the area operates with a barrier and the Challenge 25 principles. So anyone that look under 25 will be asked to present ID to prove their age.

This category is an issue for the Just Walk Out technology – for all retailers – because the age criteria disrupts the frictionless process.

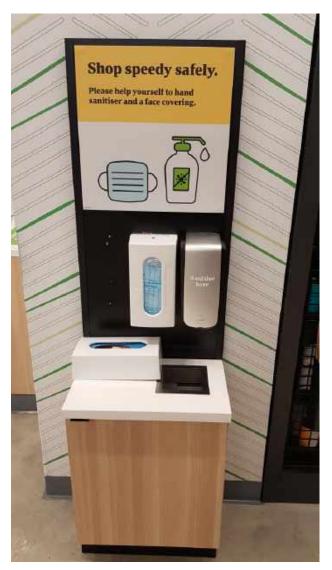
Aldi have an interesting take on this, but more of that later.



Abc



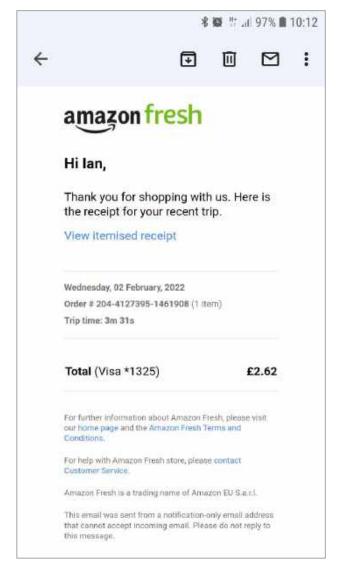


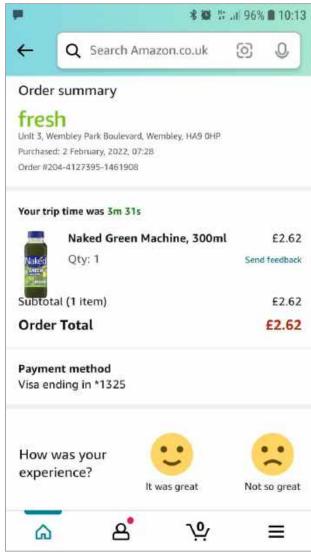


Like the other stores, Amazon reassures and reminds shoppers throughout the store regarding the ease of shopping and the on going COVID considerations.



Exit and receipt





When the Just Walk Out tech was first introduced in Amazon Go stores in the US, exiting the store required a final scan at the barrier, but now it really is Just Walk Out.

I left the Wembley store, still feeling a little self conscious despite having used this store before. I am sure this will pass with time.

Two hours after leaving the store I had an email sent, with a link to a formal receipt that was easy to read, with concise information.

Unlike some of the retailers, that ask shoppers to fill out feedback questionnaires, Amazon has a simple face icon option for good or bad feedback. Less data, but probably more engagement.



Costs for Amazon Just Walk Out reduced by 96% since 2017

Amazon has managed to whittle down the cost of its 'Just Walk Out' technology by a staggering 96 per cent since 2017, according to *Business Insider*.

Not only this, but internal documents shared with *Business Insider* indicate the company is planning on implementing further measures to slash even more costs through until 2023.

The ecommerce giant is planning on growing the sales and profitability on the stores while meanwhile putting pen-to-paper on a number of new third-party partnerships.

The estimated operating cost of a 1,000 square-foot cashierless location has dropped to just \$159,000 per store, each year.

This marks a 96 per cent decrease from the eye-watering \$4 million it cost to run the store for a year in December 2017, a month before it opened its first 'Go' location.

The costs are spread out through the fees for using Amazon Web Services (AWS) cloud technology and hiring remote employees to manually verify the accuracy of the checkouts in stores, as well as other tasks. The fee also does not take into account marketing costs or merchandising fees.



Summary – Amazon Fresh

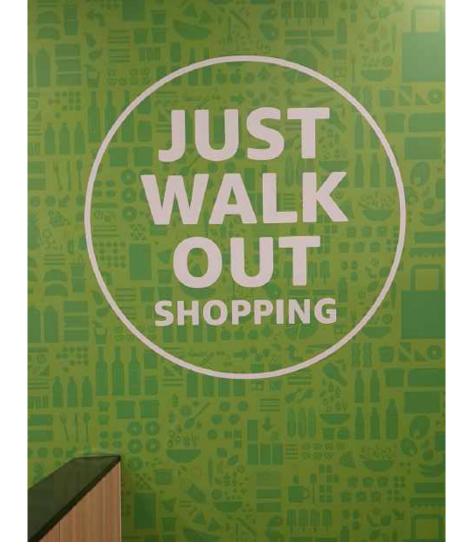
Amazon has evolved their Just Walk Out Technology since it was first introduced four years ago. I wasn't sure how much leverage this had when it first launched, due to the crippling cost - \$10m for a 1,000 sq ft store apparently.

But it has grown to become a viable and growing check out option, offering frictionless shopping – as well as providing invaluable data and insights – a key signature of Amazon physical retail ventures.

Inevitably, competitors have launched comparable products, but Amazon is still the benchmark for this tech.

We must not forget the store itself, because once the novelty of the tech has gone, what remains is a store that needs to function effectively as shopping experience.

And Amazon has done a great job with the Fresh format. Many Amazon store concepts are cold and functional, yet this design trait lends itself well to a city centre convenience store, where clear navigation, strong messaging and efficient layout are critical for shoppers that just want a frictionless experience.









How Tesco's GetGo works

Cameras in the ceiling and weight sensors in the shelves work with AI technology to track an individual's movement around the store, monitoring the items they pick up. This is a similar combination of tools as the Amazon technology.

As shoppers leave, the bill is charged to their Tesco account and the receipt sent to their device within 30 seconds. Trigo's GDPR-compliant AI solution anonymises a shopper's movement and product choice. No biometric or facial recognition data are gathered or analysed.

The cameras do not use facial recognition technology, but instead track body movements. Visual data from customers will not be stored or saved.

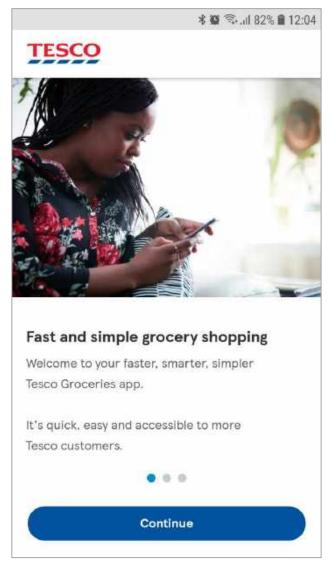
Tesco said this store's launch follows a trial at its store used by staff within the group's Welwyn Garden City HQ which began in 2019

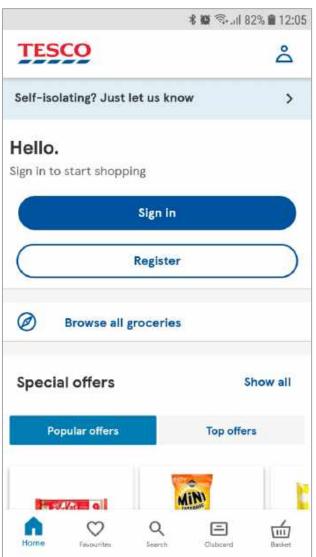
Tesco Convenience managing director Kevin Tindall said: "This is a really exciting moment for Tesco as we launch GetGo with customers. We are constantly looking for ways to improve the shopping experience and our latest innovation offers a seamless checkout for customers on the go, helping them to save a bit more time. "This is currently just a one-store trial but we're looking forward to seeing how our customers respond."

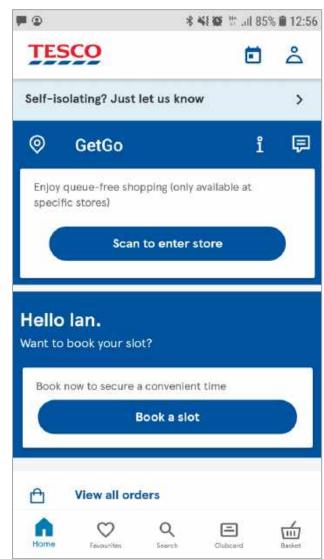
Other companies with frictionless checkout systems include Zippin, UST Global and Grabango.



App sign in







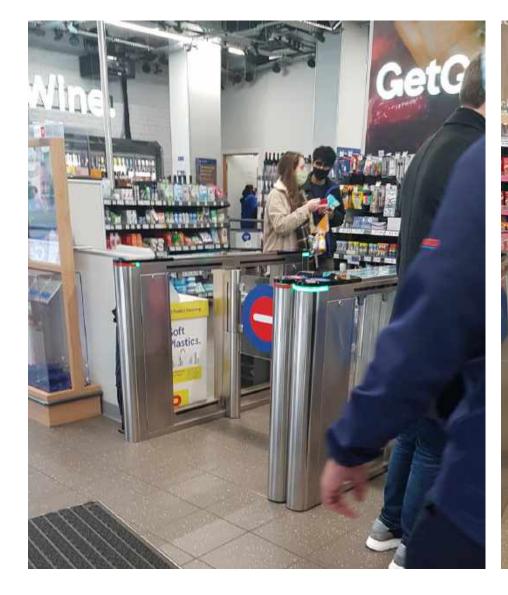
In anticipation of the potential delays at the store entrance, I had pre-loaded the app on my phone.

However, as I arrived, the helpful member of staff at the door reminded me I needed to add a bank card. She also told me I needed a Club Card, but I wasn't prompted for this as I uploaded my card details.

Once that was done, I created my code on the app, and was able to scan this and enter with no further delay.



Entry gate

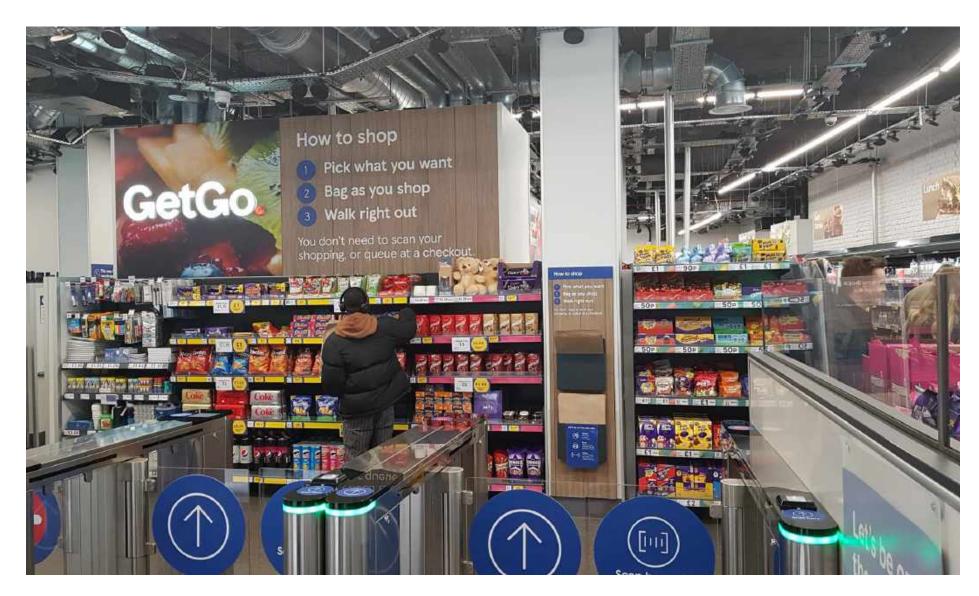




Other shoppers arrived as I was sorting my account, most chatting to the staff and appearing to have the app fully prepared.



GetGo communication

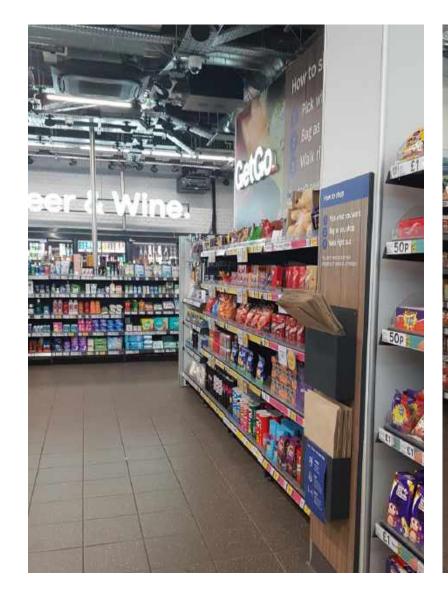


This high level message faces the entrance, is an effective way to introduce the offer and reassure new shoppers.

I wonder how long before this key messaging can reduce to a supporting role, rather than dominate the store?



Category signage





The category signage is high, bright and clear, which meets the main criteria for this type of communication.

Still above head height, the display shelving is notably lower than Amazon, foregoing the top level signage above product. The result is a slightly more open feeling to the store.



Meal deal



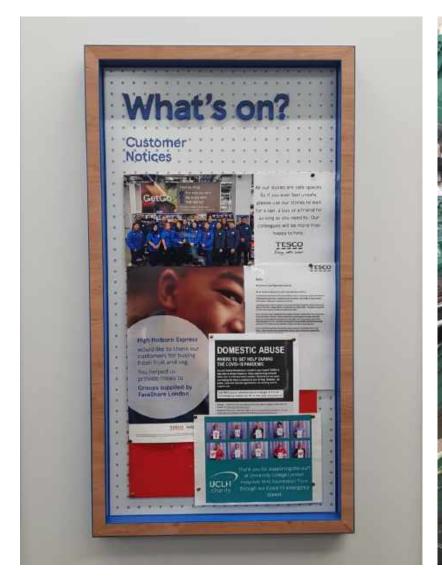


Apparently the Meal Deal is £3....

This extensive ticketing around the meal deal is a bit excessive to my eyes. The large message – above to the left – explains the offer. However the text on the images is tiny and gets lost. Meal deals are a huge footfall driver in city centre convenience stores, so I get the focus, but this is overkill.



In store messaging





Like Amazon, the convenience of GetGo is communicating multiple times throughout the store.

This is necessary as shoppers learn to use the technology.

It's always good to offer bags at multiple points of the journey, allowing shoppers to buy more product than they can carry in their hands.

The What's On panel is a nice community touch, often seen in suburban stores, but not normally so prominent in city centre locations like this.



Further messaging and the drinks issue







Secondary messaging uses wood effect brown graphics that are once again conveniently high and easy to read.

The ease of GetGo is further endorsed with this screen messaging, using the rear of a window display rather cleverly.

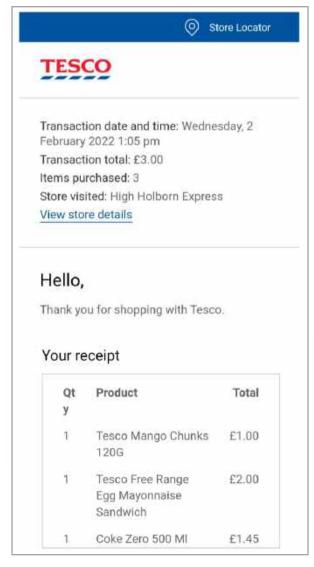
The Beers Wines and Spirits section has a barrier with the Challenge 25 message, although no apparent technology is employed to monitor age.

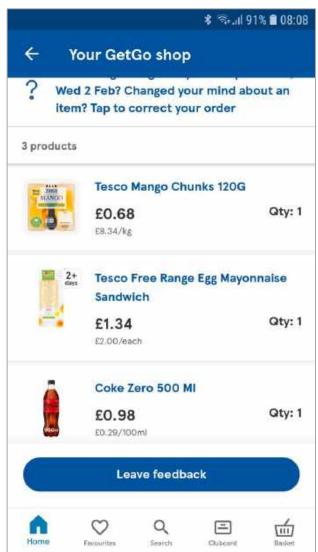
Frustratingly, once you have finished browsing the drinks area, you can only exit outside the main shopping area. So I had to rescan to enter the store to look at other categories.

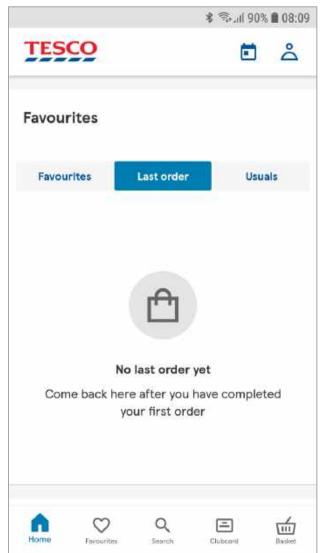
This will frustrate a lot of shoppers in a rush, I am sure.



Receipt







The receipt for my purchase arrived within a minute, which may be useful for some shoppers.

It arrived by email, as well as on the app. Each product has an image on the app.

There is also an option to change the order on the app. I am not sure if this is about returns and refunds, or an opportunity to challenge the summary in case the technology fails.

Either way, it's a useful facility that helps reassure sceptical shoppers.





The first third party store using Amazon Just Walk Out

"We have collaborated with Sainsbury's — one of the largest supermarket chains in the UK — to enable a checkout-free convenience store powered by Amazon's Just Walk Out technology at their Holborn Circus location in the heart of London. Our work with Sainsbury's means that they have become the first international business customer of Just Walk Out technology.

The opening of the SmartShop Pick & Go also marks the first time Amazon has retrofitted a store with Just Walk Out technology, meaning the store uses Sainsbury's existing fixtures and fittings with our technology.

Integrating Sainsbury's SmartShop app into Amazon's Just Walk Out Shopping experience is new—it's the first time we've enabled a business customer to use their own app to manage store entry, exit, receipts, and payments for shoppers. The integration enables Sainsbury's to leverage existing systems, and their shoppers are able to use the Sainsbury's app they're already accustomed to.

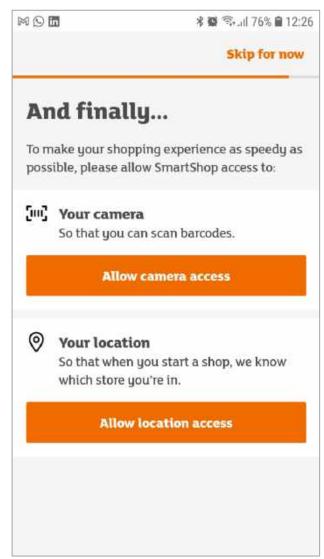




Sign up







Sainsbury's was the most frustrating and convoluted process.

Like Tesco, I had already downloaded the app but hadn't added my card.

A member of staff was at the store entrance to assist shoppers. They stood patiently as I took four attempts to add my card to the app, eventually using the link; png.Sainsburys.co.uk

Then I had to add a nectar card, which was another drawn out, frustrating process. After nearly ten minutes, I was ready to start shopping.



Sign in







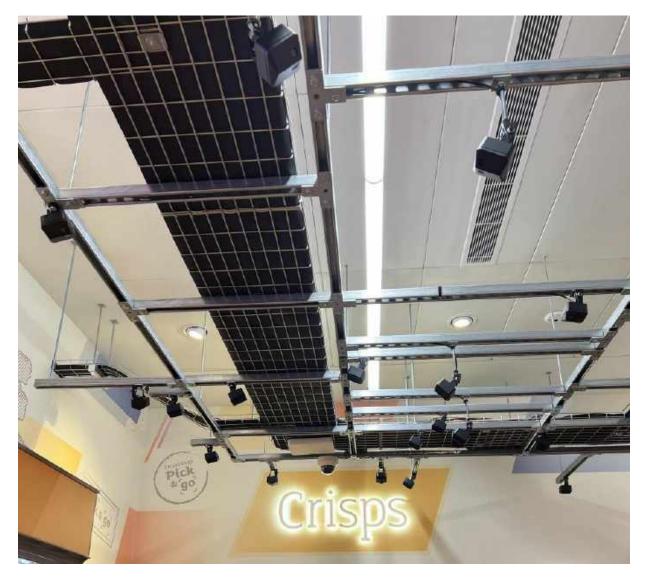
Once everything was in place, I was issued a QR code to scan at the gate.

Notably, as I was trying to sign up, five people arrived at the store entrance, and each one walked away when the staff explained the need to sign up before they could shop.

I appreciate this is not a comprehensive study on shopper behaviour, but it is an indication of the challenges faced by this new technology and it's sign up process.



The technology



It is well publicised that this Sainsbury's store uses Amazon technology, which has been tested and proven for over two years.

This combines ceiling mounted cameras and shelf sensors, as detailed earlier with the Amazon Fresh store.

Does the Amazon origins matter to the average city centre shopper? Probably not.

The tech is still a novelty, and I imagine people will either be regular Sainsbury's shoppers keen to try the new format, or people working/living close by and this is their local store.



Images courtesy of The Sun

Category signage and lighting





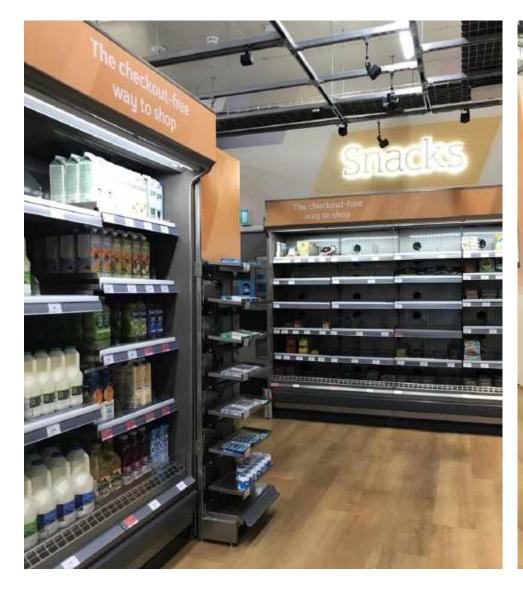
There is some great, high level illuminated category signage, mounted on the walls above the corresponding fixture.

Interestingly, or unusually, depending on your perspective, in most bays only the top shelf is illuminated.

Selective lighting is always a double edged sword – giving great emphasis to the illuminated products, while casting the rest as a poor relation that can disappear from attention.



Product display





This store struck me as the most bland of the four.

The offer seems exclusively focused on lunchtime meal deals and dinner offers.

This is fine for a city centre convenience store, but does feel unsupportive as a result.

The biggest issue I have is the sparse environment and lack of communication and imagery throughout the store.

It feels empty, and I don't mean the issues around stock levels. There could be so much more warmth and engagement, particularly when encouraging shoppers into this new format.





Beers, wines and spirits



BWS is the one category that need some consideration, because of the age limits.

Like Amazon and Tesco, Sainsbury's employs a physical barrier and staff to check ID of any shopper that appears to be under 25.

It is a frustration for all, including the retailers, but I expect to see things evolve, particularly as sign up and age recognition technology become more efficient.

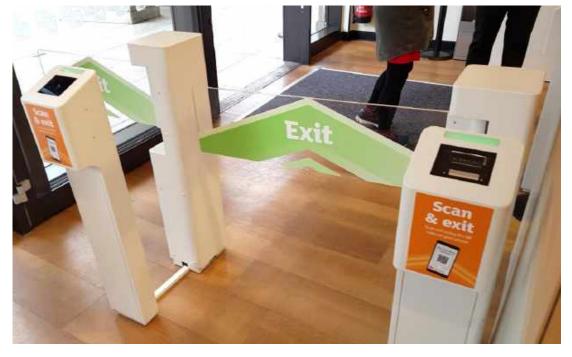




Exit







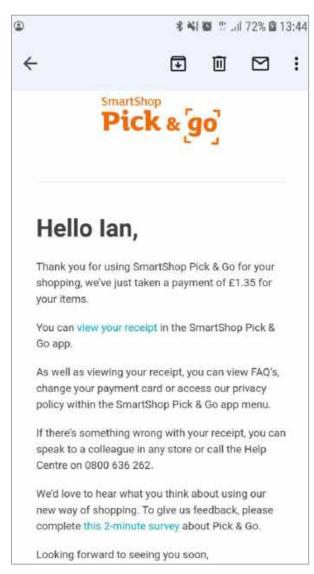
I was intrigued to find that I needed to rescan my QR code to exit after shopping. So not quite Pick and Go, as the messaging suggests. This is surprising, considering it's the same tech as Amazon.

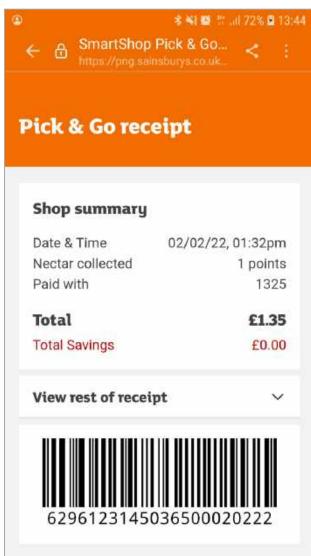
Apparently it is part of the data capture process for Sainsbury's, but another small friction for the shopper embracing the Just Walk Out option.

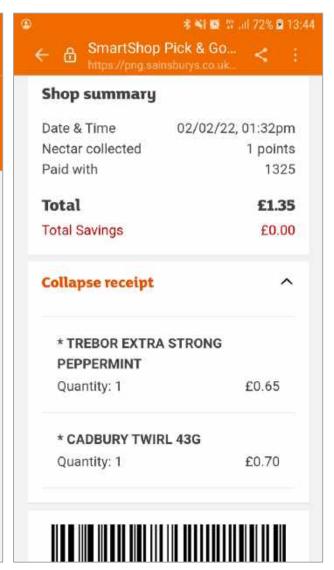




Receipt







The receipt arrived within 10 minutes of the shop.

Notably, if there is an issue with the receipt – and I assume the billing of products taken – shoppers can phone a number. Alternatively they recommend talking to a member of staff in store, although shoppers may have already left the store before they discover this.

I groaned when I saw the request to complete a 2 minute survey, but I was pleased with the single, solitary Nectar point I had earned. Well worth the frustrating sign up...





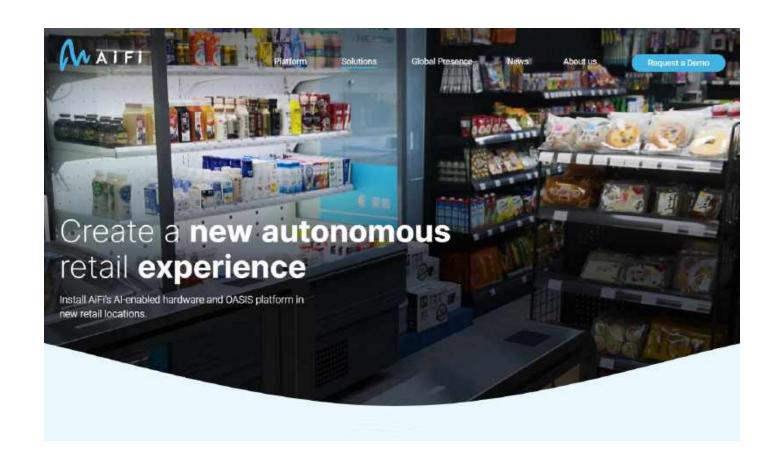
How Aldi Shop & Go works

Aldi has tapped retail technology brand AiFi for the technology, which is very similar to Amazon Fresh's 'Just Walk Out' (JWO) tech that has been integral to its grocery rollout in the UK.

AiFi's technology uses specially positioned cameras to detect what a customer has picked up.

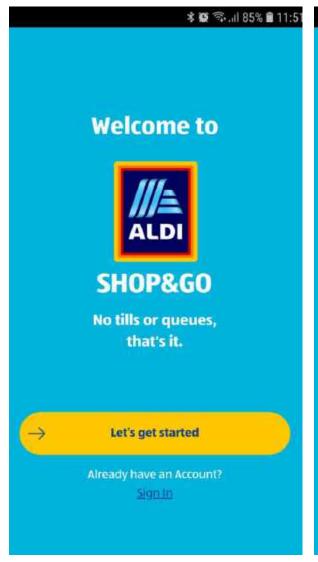
Currently, in Amazon Fresh locations, an employee must stand by the Challenge 25 products and manually check the ages of anyone who is seeking to purchase one, however in the Aldi Shop&Go store, facial age estimation technology provided by tech company Yoti to authorises their purchase.

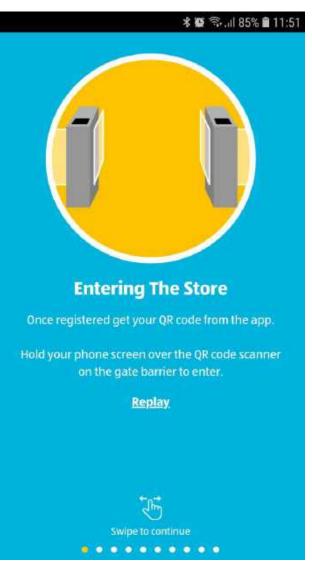
Those who choose to not use the system will instead be age verified by a store colleague.

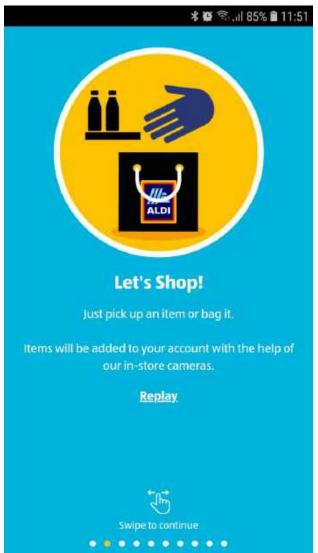




Sign up







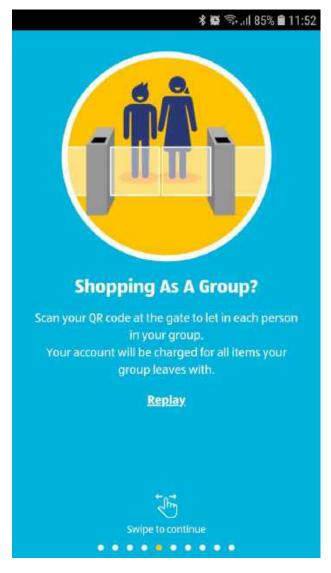
Having learnt the hard way with Tesco and Sainsbury's, I added my debit card to the app before arriving at the store.

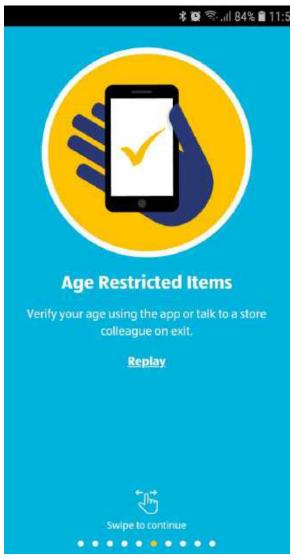
I found the app to be the most communicative of all four, having a friendly supportive tone of voice.

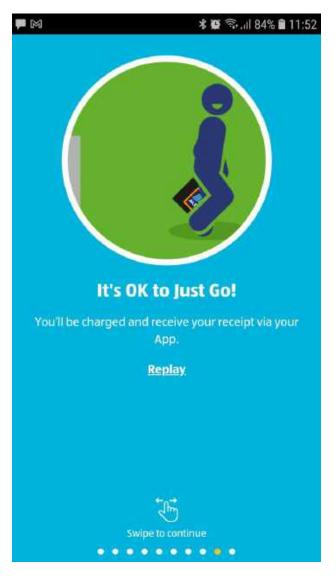
A nice touch was the Replay option for each page of the introduction, allowing shoppers to fully understand every step of the process.



Group shopping







I visited the store with Louisa Evan from Uncrowd, and she hadn't downloaded the app.

So we activated the group option on the app, where more than one person can shop together, with all purchases being charged to my account. Let's hope Louisa doesn't buy too much...

Each person in the group is allocated a separate QR code, so they can be tracked as individuals.

People in a group have to scan and enter within 60 seconds of each other.



Entry







Entry was via the generated QR code.

The staff at the entrance were the most friendly and engaged of all stores. This maybe because the store has only just opened and it was still a novelty.

The shoppers appeared very enthusiastic and happy to use the system. Notably, this isn't a city centre store, so the shopper profile is different to the other three.



Communication





Unlike the other three stores, this is not a London city centre convenience offer.

This store is much larger than the others, although noticeably smaller than a typical Aldi supermarket.

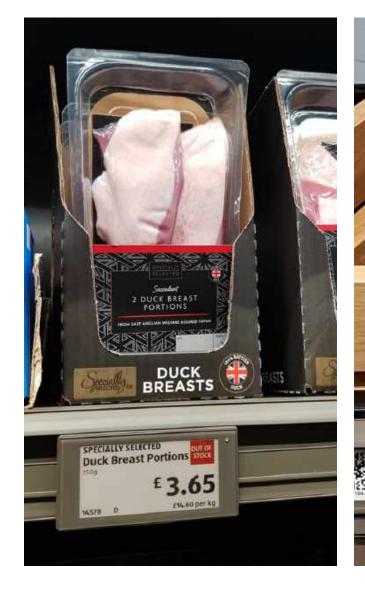
But, fortunately, much of the store interior is usual Aldi, and that is a good thing.

The current Aldi store environment is well designed, logically laid out and well presented.

I have always enjoyed the tone of voice and communication in these stores, and the friendly manner works really well in a store that will have many shoppers wandering around, staring up, unsure what to do.



Electronic ticketing





Much like Amazon, Aldi employs electronic ticketing for product pricing.

Louisa and I were intrigued to note that several product tickets had a red Out of Stock message, despite having the product on the shelf.

We spoke with a staff member who told us that the camera technology does not connect with stock control. Instead, members of staff walk around the store, manually checking shelves.

It is surprising that the tech can count product pick ups, but can't translate that into stock management.



Shopping advice and tips







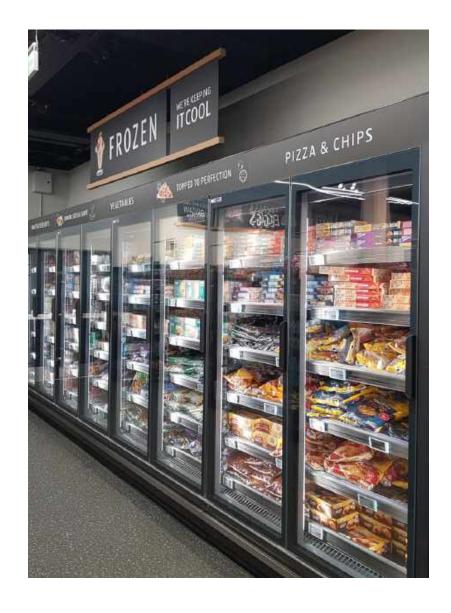
All four stores communicate about the shopping process throughout the store. Some better than others.

Aldi do it most comprehensively, with printed graphics and screens offering advice on selecting products, replacing products and just walking out.

Another interesting point made with one message is helping others. If someone needs help picking something they can't reach, move it to a lower shelf, don't pick it up and hand to them. Otherwise it gets charged to your account.



Messaging



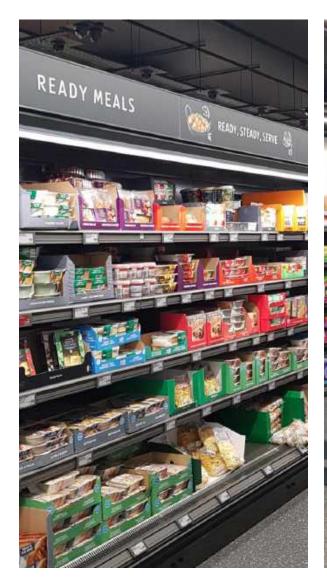


More examples of the great product messaging throughout the store.

Dual level category messaging helps shoppers navigate then select products.



Category communication







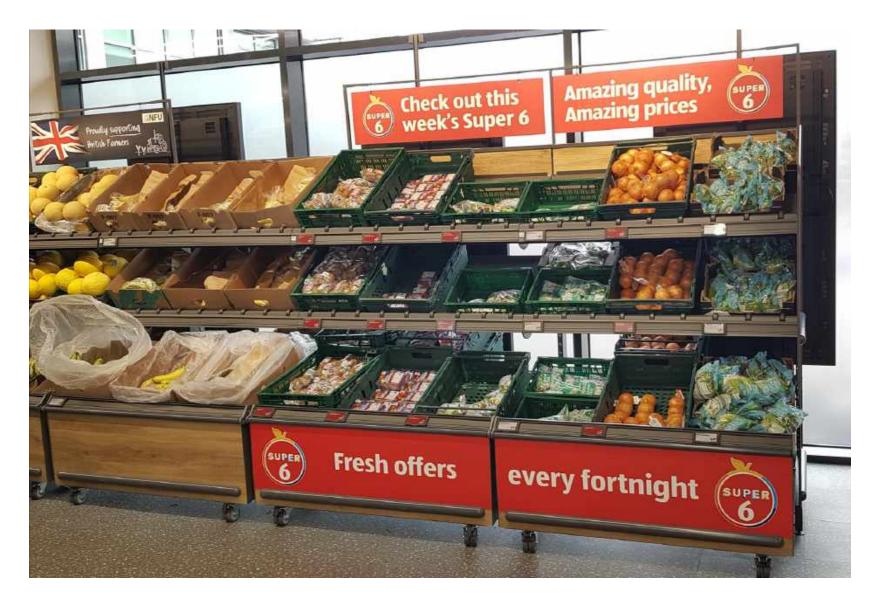


The category titles are focused on occasions and activities where relevant.

This demonstrates a good understanding of the target audience.



Super 6, but no welding torch



Sadly there is no Special Buys offer in this store. So no opportunity to just walk out with a welding torch or set of spanners.

But the Super 6 offer is retained, offering discounted prices for 6 fruit and veg products to encourage healthy eating.



Not all bays are equal



While Sainsbury's have only illuminated the top shelf of many fixtures, Aldi has chosen selected bays to light up.

The result is similar to Sainsbury's, in as much as the non-illuminated bays appear as the poor relation.

We see this effect here, where toothpaste and tampons are in the spotlight, but nappies and baby food remain in the shadows.



Yoti age recognition technology





Read about the Yoti experience here: https://inews.co.uk/news/technology/aldi-facial-age-estimation-tech-sell-alcohol-no-checkout-supermarket-1408253

Unlike the other retailers, Aldi is attempting to use technology to overcome the age approval for alcohol purchases.

Yoti is facial recognition Ai gained approval for UK trials along with other tech companies. The trials will take place between January and May this year.

Other retailers including Co-op, Tesco, Asda, and Morrisons supermarket chains will trial age estimation technology in their stores in the coming months.

I was unable to test the Yoti technology because Louisa and I had entered as a group, and we had a manual check at the exit. Another complexity for the technology is groups of people with different ages trying to buy age restricted products.

But you can read about the experience in the link to the left.



Exit process



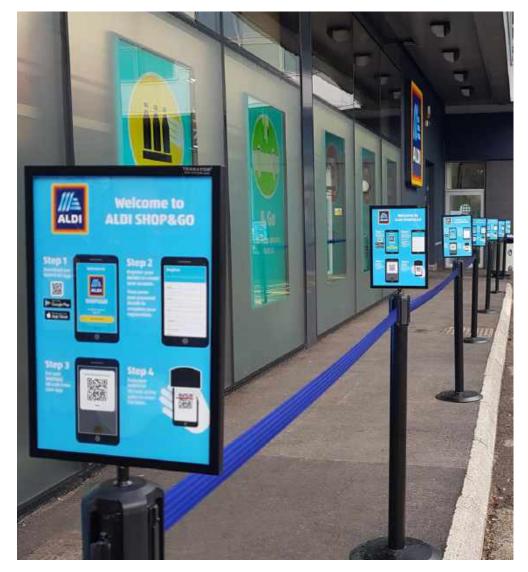
Staff were at the exit to assist shoppers as they leave.

Most are able to walk out with no interaction. However, anyone with an alcoholic product cannot just exit, unless they have been approved by the Yoti tech.

Staff check the bag and then open the gate to exit, checking ID for anyone that appears to be young. Sadly not a consideration for me.



External screens



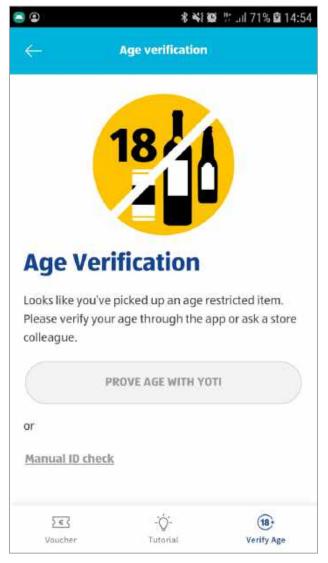


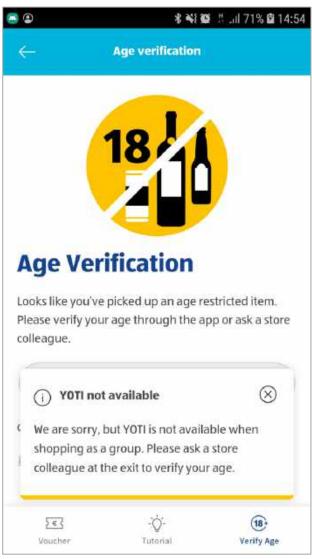
The store benefits from a long wide frontage, offering lots of space to promote the store and it's (currently) unique shopping experience.

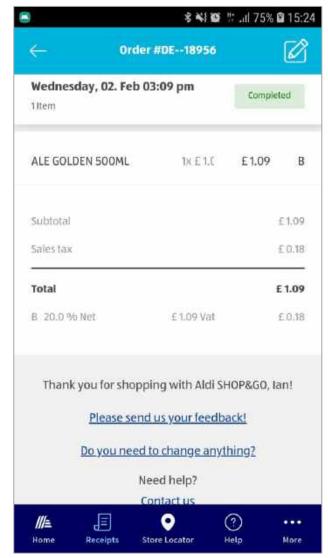
There is a row of screens in the window with looping content about the Shop & Go offer. One minor observation is the way the image quality deteriorates as you view the screen from an angle, resulting in the faded yellowing of content, as shown above. But the display and communication is effective otherwise.



Abc







The receipt arrived within minutes.

Like Tesco, the opportunity to return products or challenge anything is clearly communicated on the receipt, as well as the inevitable feedback form.

The age verification messaging is very clear and helpful too, reflecting the high standard of communication throughout the store.



Compare at a glance





Sainsbury's



Store size	2,500 sq ft	2,400 sq ft	2,000 sq ft *	5,000 sq ft
Tech name	Amazon	Trigo	Amazon	Amazon
Tools used	Cameras, shelves	Cameras, shelves	Cameras, shelves	Cameras
Ease of sign up	9/10	7/10	4/10	7/10
BWS management	5/10	5/10	5/10	8/10
Overall store display	8/10	8/10	6/10	8/10
Product communication	7/10	6/10	6/10	9/10
Ease of shop	9/10	7/10	6/10	8/10
Overall	8/10	7/10	6/10	8/10





Summary – the technology and sign up

In my mind, there are two aspects to analyse with these four stores.

First we have the technology and the subtle differences between each retailer, even the two using the same tech.

Secondly, there is the generic shopping experience, something that will long outlast the novelty of the payment process.

The biggest challenge for this new technology is the friction that exists around initial sign up. There is an ironic conflict in choosing mostly city centre convenience stores to launch these initiatives. The busy city centre workforce are most likely to appreciate and use the Just Walk Out tech as they literally grab and go during busy lunchtimes.

At the same time, these 'time poor' shoppers are the least likely to spend ten minutes signing up at the store entrance, which will be perceived as a huge inconvenience and obstruction.

Over time, this issue will dissipate as more and more shopper understand and adopt the technology. But right now, as these retailers seek to gain the upper hand, I can't help thinking Amazon will make the biggest initial gains, purely because more people already have the Amazon app, making the first shop so much easier.

It helps that they have seven stores already open, with more planned, while Tesco are currently only trialling this singe store before assessing the situation.



Summary – the stores

Beyond the shiny, exciting apps, we have to consider the stores that deliver product, communication and ease of selection.

Amazon creates a predictably functional and clinical experience, that is well communicated and easily navigated. I have issues with some of the Amazon stores, but this clinical approach is perfect for an urban convenience store, where clarity and access are king. Their messaging is concise and easy to understand.

Tesco offers a simple store environment, but drowns the Meal Deal category with £3 ticketing which is an eye sore. The annoying BSW journey, that exits outside the main store space needs addressing. Otherwise the environment is typical Tesco and none the worse for it.

Sainsbury's delivers the least impressive store environment, where messaging, imagery and a tone of voice are notably absent. This is one of the most austere convenience stores I have visited.

The Aldo store is different, being located in Greenwich, away from the hustle and bustle of the city centre. It is also twice as big, feeling more like a small supermarket than a convenience store. Size and location aside, it still delivers the most immersive, communicative and pleasant shopping environment, something I am sure they would maintain in a city centre small format too.

If I have to judge, I would say Amazon and Aldi have taken the lead in this area, but we have a long way to go as it matures and becomes part of every day shopping.



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