

ANALYSIS

Accelerated development

Driverless cars are expected to be on Britain's roads in just three years' time. How could they impact retail?

George MacDonald reports

Fast-forward a few years. It's summer, 2025. You've just got back from holiday, the flight touched down mid-evening and you know that back at home you're out of bread and milk for tomorrow and something ready to eat when you get there.

It's too late to order anything for home delivery today. The drivers will have clocked off until tomorrow.

So, instead, you order your essentials to arrive in a driverless car, which you'll meet by the side of the pavement outside your house. Perhaps that same autonomous vehicle that will also pick you up from the airport and whisk you home.

Alternatively, you have some shopping to do. Maybe you are collected by a self-driving car offered by a big department store's concierge service. You're transported to the retailer's experience hall – much of the trading space once devoted to product in what was previously a conventional shop is now given over to storage for collection items – and, after lunch, a visit to the spa and a cookery class, you're driven home with the goods you've ordered.

Far-fetched? Not necessarily.

Such possibilities may be part of tomorrow's retail world as driverless cars gear up to take to the streets and potentially unleash a new wave of challenge and opportunity for retailers.

In last autumn's Budget, Chancellor Philip Hammond unveiled an ambition for "fully driverless cars" to be on the UK's roads by 2021.

That timescale may not be met, but what is certain is that deployment of the technology, being developed by new entrants such as Google parent Alphabet's Waymo division, as well as established manufacturers such as Jaguar Land Rover, is coming rapidly down the road.

In fact, the pair joined forces at the end of March to develop a premium self-driving car.

Autonomous vehicles are the next phase of the 'new mobility' trend that is already under way as businesses such as Uber have revolutionised established transport options, and it could transform retail business models, consumer behaviour and everyday life.

Retail trials

Online grocer Ocado is one retailer to have already experimented with autonomous vehicles. Last summer in Greenwich, Southeast London, it piloted deliveries to customers in partnership with specialist technology company Oxbotica as part of the Gateway Project.

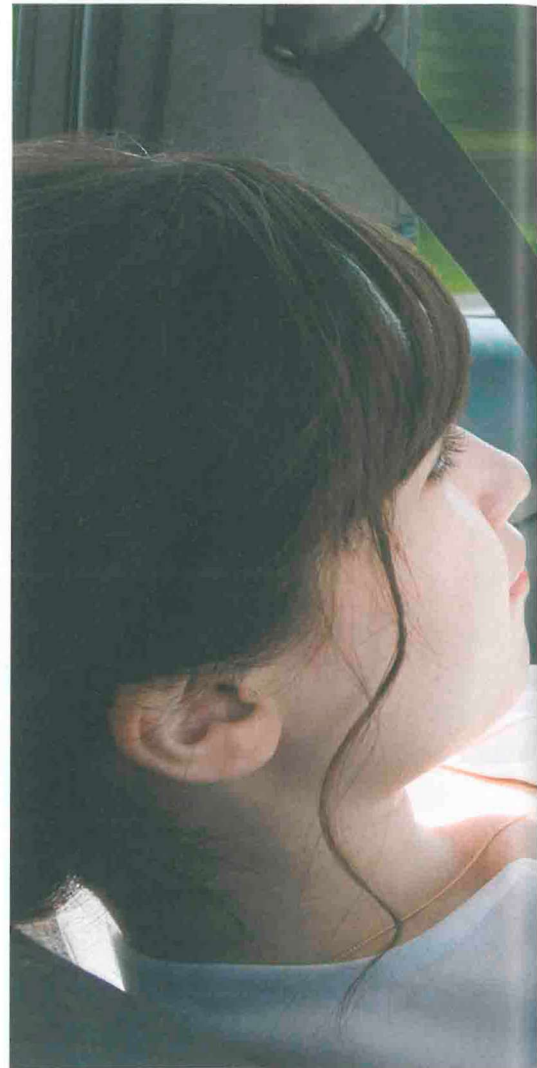
The test was conducted by Ocado's 10x department, which focuses on "creating game-changing improvements that have the potential to revolutionise our business".

Ocado chief technology officer Paul Clarke was pleased with the results. He says: "The trial was really to enable us and Oxbotica to try out that technology. It was very positive and well received by customers. We definitely think we achieved a lot of what we wanted. Now we're thinking about what to do next."

That may ultimately include using the technology not just in the UK but overseas, as Ocado considers how autonomous vehicles can be deployed alongside or as part of its Smart Platform, which it aims to sell to other retailers worldwide.

For Clarke, delivery to customers by autonomous vehicles is likely to be an extra, rather than the core service, as its existing choices effectively cater for shoppers' needs. A typical Ocado order at present might include 50 items, and can be delivered in an hour.

"That's a very compelling offer and the majority of customers will want to retain that option," says Clarke. "Autonomous vehicles is another choice. If you got home late at night



and suddenly want some food, you might be very happy to pick up from the kerb while still wanting [general] orders to come to your kitchen table. I think autonomous will augment what currently happens."

He sees other uses as being of more immediate value, such as complementing the various intelligent technology already deployed in Ocado warehouses.

"New technology we use has many of the same characteristics of being able to swarm [when AI-facilitated agents work together with one another] or co-ordinate," he explains. "This process of how we use self-driving vehicles to perform tasks is something we are using actively and we can see other applications."

Big opportunities

The aim, of course, as across retail and other industries, is to improve efficiency as well as enhance the customer offer where possible.

Ashish Khanna, partner and global co-head of mobility at strategy consultancy LEK, believes driverless vehicles can bring big opportunities.

He says: "What technology creates opportunities for is economies of distribution as we think of shortening the supply chain from producer to consumer."

Read the latest on how new technology will affect retail
Retail-Week.com/Tech



The Government wants to see “fully driverless cars” on UK roads by 2021

If you don't need your multi-storey car park, it provides an opportunity to bring residential back into town centres

**Mark Charlton,
Colliers International**

Autonomous vehicles are graded levels one to five. The first level means one aspect is automated, at four the vehicle is fully autonomous but the areas in which it can operate are restricted, while at five it may travel anywhere. It is the latter two levels, in particular five, that will presage the greatest change and could transform cost structures.

Walmart obviously sees the potential for disruption – it has pre-ordered 15 of Tesla's new self-driving Semi trucks.

But it will also affect customer deliveries. Khanna says: “If you take out the cost of a human being, you take out £3 to £5 of delivery

cost. All of a sudden, products that can't be delivered become viable. If you want a pint of milk... then it might be delivered to you for £1.”

It also creates opportunities not just for retailers but for brands, perhaps accelerating the direct-to-consumer trend. For instance, drinks giant Diageo sells its products on takeaway delivery platform Deliveroo.

It does not take much of a leap of imagination, assuming driverless cars take off and bring cost benefits, to see how such services from manufacturers could proliferate.

Khanna observes: “It offers the opportunity to reduce the level of intermediation required and brings you closer to customers and able to distribute without needing a retailer to step in.”

Retail parks under threat

There could be other implications for retailers' established business models too. What would the uptake of driverless cars mean for town centres or retail parks, for instance?

Mark Charlton, head of UK research and forecasting at property services giant Colliers International, can envisage big changes.

Easy car parking has traditionally been a big attraction of retail parks for shoppers, but will that still be the case if autonomous

cars become a commonplace option? Active asset management may be needed “to create distinctive and quality destinations that are future-proofed”.

He wonders how much parking space would be necessary – a question relevant to individual big stores out of town as well as centres. “Do you need 500 to 750 parking spaces if ultimately we're moving from an ownership model to a ride-sharing model?” he says.

If consumers are making use of autonomous vehicles, the focus moves to “facilitating that through drop-off and pick-up areas”.

It opens up the possibility of retailers and park owners devoting former car parking space to alternative uses such as leisure centres, cinemas or even schools and housing.

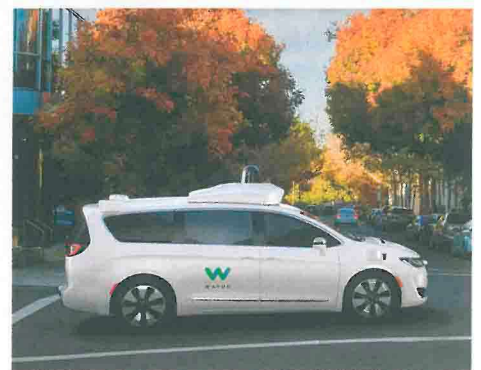
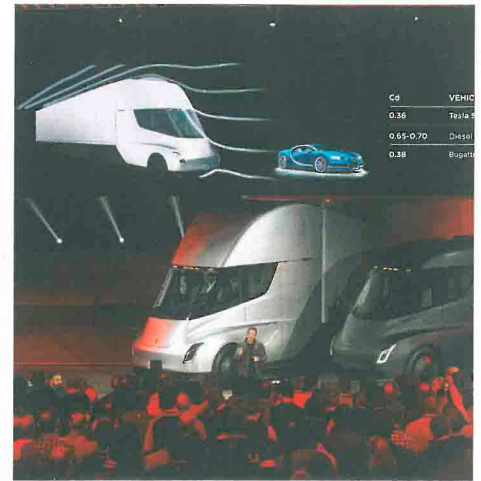
Similarly, in town centres, where local authorities and others have traditionally generated cash from parking facilities, the operating landscape could change.

Charlton says: “If you don't need your multi-storey car park, you've lost income and got a property to redevelop. That could provide an opportunity to bring residential back into town centres.” That in turn might bring a beneficial knock-on effect by providing a fillip for high street retailers.

ANALYSIS



Clockwise: Ocado's trial with Oxbotica; Elon Musk launches Tesla's Semi; Waymo's Chrysler Pacifica



Brian Kalms, partner at consultancy Elixirr, even speculates about whether a 21st century version of the old mobile shop might emerge—a van carrying a retailer's top SKUs that visits locations such as villages or office parks, as well as people's homes.

"The advantage would be that you could summon it on demand," he says.

Chauffeurs to store

However, assuming driverless cars become popular for home delivery, getting people to the shops at all could be more challenging as online shopping grows in popularity.

That means retailers, more than ever, will need to find ways of making their bricks-and-mortar branches appealing.

"Experience, service, convenience and some sort of differentiation—there's got to be a USP that makes me want to come to your centre," argues Charlton. "Why go to Oxford over Reading? We're already in that environment and it could be accentuated even further."

However, if the economics stack up, retailers could potentially use driverless cars to bring people to shops—an option probably only possible for those offering experiential stores.

Some think that retailers might run their own car services, but Khanna does not see that happening and instead envisages partnerships with car operating companies. He says: "It's unlikely that retailers will own the fleet, but others will potentially offer the service," he says.

If you think about driving environment complexity, London is at the upper extreme – there are lots of cyclists, jaywalking, it's not grid-based
Ashish Khanna, LEK

Be prepared

The people Retail Week spoke to are sceptical about Hammond's hope that autonomous cars will be fully operational by 2021, but believe it is a case of 'when, not if' the technology takes off.

Issues such as infrastructure (including the provision of charging points) and the effects on road congestion, insurance and safety are all challenges. The death of a pedestrian after being hit by an Uber self-driving car in Arizona last month brought home that the latter concern remains.

And introducing the technology in the UK will bring specific challenges. Khanna says: "The underpinnings of this are based on machine learning in sets of conditions.

"If you think about driving environment complexity, London is at the upper extreme – there are lots of pedestrians, cyclists, jaywalking, it's not grid-based. Contrast

that with Arizona where there's hardly any pedestrian traffic and it's very grid-based.

"In Europe, testing at scale hasn't really started. But Google's carried out five million miles of road testing in the US. We're nowhere near that in the UK."

The advent of driverless cars is one more, perhaps seismic, new technology development that retailers must keep abreast of. What they need to consider is whether it can bring benefits to their particular business and customers.

Khanna points out that it can take more than 10 years to get payback on a new distribution centre. Driverless cars are likely to have progressed rapidly in that time, opening up new supply chain possibilities, so the potential of this technology should be considered when planning for the future.

From the shopper perspective, Kalms says retailers need a clear idea of if, and how, the technology can enhance the relationship with their particular customer: "What's the customer experience you need to deliver in order to be differentiated? If it's not going to drive your point of difference, then why?"

Clarke believes autonomous vehicles could become part of everyday life "sooner than people might think". From a retail perspective, he says: "Some of us who are interested in paving the way are going to need to get on and do the experiments and get the learnings."

Retailers will have to decide whether to put their foot on the accelerator or stay in the slow lane until the technology is proven. **RW**