

# FUTURE OF MOBILITY

## The Mobility Roadmap for UK Auto Retail

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2017

in association with



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# Foreword

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**The UK auto retail sector has enjoyed unprecedented success in recent years with new car registrations growing to 2.7 million in 2016, a fifth consecutive year of growth. At the same time, the car retail industry (new, used, aftermarket and other downstream services) is navigating a rapidly changing environment, driven by evolving customer requirements in the internet and iPhone age, coupled with unprecedented product innovation around connectivity and autonomous drive.**

Reflecting on this it has been a pleasure to partner with Auto Retail Network on this future-focused report, which covers many key areas that we recognise represent a seismic shift in how the automotive industry as a whole will develop.

Tomorrow's car will represent a step change in form and function compared to what is offered now. As well as the longer term development of the autonomous vehicle, there will continue to be new levels of connectivity among vehicles, enabling new services inside and outside the car. There will be new kinds of cars, many dedicated to specific uses. The culture of the car, including how it should be purchased, owned, driven and looked after will also change. Already, the very notion of what a car is for is being radically rethought.

To remain successful, businesses in the industry whether suppliers, OEMs, retail, finance or other downstream services must continue to tackle the challenges and opportunities from the need of sustainability, demographic changes, consumer preferences and population shifts, changes in global trade agreements, regulation and compliance and the impact of Industry 4.0 and digitisation on manufacturing processes and supply chains.

Technology has had an impact on every area of the car buying process and will continue to do so in the future. Which customers will choose the dealer experience over 'click and collect'? Will there be unexpected new entrants into the market? Could 3D printed car parts disrupt aftersales service in the future? Confronting these challenges will



Technology has had an impact on every area of the car buying process and will continue to do so in the future



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require action on the part of automotive retailers, from adapting to digital channels and the price transparency they bring, to handling the changed customer shopping patterns involving fewer, more focused point-of sale interactions around more technically complex products.

Topics such as the evolution of inner city car-free show rooms, the potential divergence of rural and urban models and the increased tendency towards 'subscription' pricing models will all have a massive impact on the sector. We are therefore delighted to be supporting The Mobility Roadmap for UK Auto Retail because it shines a light on many areas that are critical for the automotive retailer and the upstream industry which the retailer supports.

**Neil Philpott**

*Partner, AutoRetail Leader, PwC UK*

**Rich Parkin**

*Partner, Strategy& (part of the PwC network), Strategy& UK Automotive Lead*

# Introduction

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**The rate of change in the automotive industry in recent years has been phenomenal, with everything from the way people finance their vehicle to what they expect from the cars themselves radically different to just a short generation ago.**

That pace of change is showing no sign of slowing and, in the chapters of this report, we will be investigating the future of mobility in the UK and in the industry as a whole.

We start by looking at how a change in attitude among the buying public has seen a huge rise in popularity for personal contract purchase (PCP) and other finance solutions in recent years. We've studied the reasons behind this shift in consumer preference and what sort of an impact it has had on the industry's structure and approach, and ask whether it has changed the industry permanently.

Attention then shifts to the car itself. Manufacturers and their partner companies have big plans for the coming years, and we consider the implications for insurers, the consumer and the retailer.

One area of technology that has seen particular advancement is that of the connected car. This technology brings various benefits to the driver, and we explore the potential for this and the sort of services that the car of the future will be offering. There are many uses for data, though, and we also investigate how a connected car could be of use to various elements of the car industry, from the first point of sale, to servicing and even for maintaining a personal relationship with the customer and the potential for boosting and rewarding loyalty.

Although the number of cars per person on UK roads increased from 2011 to 2016, one place has bucked the trend, with London seeing a drop in the number of cars per head. The nation's capital is often the first to benefit from new initiatives, both in terms of transport and the approach to cars. We examine

whether more rural areas and smaller towns will adopt these urban advancements, or whether they will result in a widening in the divide between town and country.

Autonomous technology was a recurring theme among those we spoke to while compiling this report, and the self-driving car is no longer a dream for the future. The technology is creeping more and more into the cars of today and we examine what this means for brands and retailers if the car of tomorrow is less about the driving, and what role the dealers will play in the adoption of this technology.

Finally, we'll take a look even further ahead, and consider what the future holds from a legal perspective, how consumer needs are likely to be served by a variety of different means and hear how the car of the future could read the driver's senses and respond accordingly.

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The self-driving car  
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# How car ownership changed in the past decade

“There are probably people that pay more for their phone than their PCH deal”

**Technology has had an impact on every area of the car buying process. It has certainly radically altered what people expect from their cars, inside and out, and in the eyes of many it has gone so far as to influence how they expect to buy them.**

After all, if you pay for your smartphone on a monthly basis, why not apply the same principle to your car?

The reality is not quite so simple, though, and there are many factors behind the rise in popularity of the personal contract purchase (PCP) and similar methods of funding a new car. According to figures from the Finance and Leasing Association (FLA), the number of cars bought by consumers through dealerships on finance rose by 11% over the 12 months to June 2016. The FLA reports a total of 1,037,000 new cars (of 1,226,510 retail new car registrations) were bought in this manner, with PCP accounting for 76% of this over the previous year. According to an Auto Retail Network study for this report, half of retailers feel that the popularity of PCP is at its peak, but 23% feel the trend is only on the way up, with saturation still many years off.

There are different opinions concerning what is behind the rise in popularity of monthly payments. The majority – 59% – of retailers believe that low monthly payments is the biggest influencing factor. However, the comparison with the mobile phone industry is one that consistently crops up, with 23% of retailers feeling an acceptance of monthly payment plans is the biggest force.

Mike Waters, head of marketing at finance and leasing company Arval believes smartphone tech is a crucial factor behind a shift in attitude, not just to PCP but to personal contract hire

(PCH) deals, too. He is not alone, with 90% of retailers saying they have seen a rise in popularity of the scheme that doesn't give the customer the option to own the car outright.

“There are probably some people that pay more for their phone than their PCH deal,” says Mr Waters. He believes this shift in approach is something that has been galvanised by a younger buying demographic, saying: “I have a personal view that is more acceptable now to use something rather than necessarily to own it and think that is generational in some respects.”

“If you are a younger couple trying to get a deposit together, the last thing you want to do is get rid of £5,000 from your savings to buy a car whereas you could afford £150-a-month.”

Ken Savage, Perrys chairman, has seen similar trends across his retail group, saying: “There is more of an acceptance from the general public that you don't need to own a car. Now new cars are very accessible to people and virtually everyone in the office here has a new car, even the junior employees. PCP has made that possible.”

Robin Luscombe, founder and managing director of Luscombe Motors, feels it is more a push than a pull factor, with the impetus coming from the car companies themselves. “Some cash buyers now buy on PCP as it is the only way to get a discount or a consumer offer. We haven't changed what we do but we do sell more on finance now,” he says. “It is driven by the manufacturers.”

Whatever the reasons behind the surge in popularity of these finance solutions, it has certainly made its mark on the automotive retail industry, affecting both the way in which deals are done and even the structure of retailers' businesses.

Mr Luscombe says the manufacturer-set finance deals can have a restricting effect on the sort of enticements that an individual dealership can offer, and allows less flexibility. However, as this is the case for all retailers, this levels the playing field and brings more transparency.

“One of the biggest fear factors with buying a

car [for the customer] used to be buying and realising they could have bought it cheaper elsewhere,” he says. “The nationally advertised PCP offer helps reduce the differential in prices.”

This means that Mr Luscombe and his company have taken the customer experience away from the traditional sales environment, focusing more on a tailored service. “[Customers] don't want to feel pressured at the moment,” he says. “That is why people are going on the internet – the consumer is in control.”

“I started with a culture that we were going to deal in the old fashioned way rather than having a sales manager, sales controller etc – I wanted the salesman to deal with the customer from beginning to the end.”

This personal relationship could well be necessary, as, despite the popularity of PCP and PCH schemes, there is still some learning and education needed. While the majority of customers are aware that they do not own the car, as many as 45% of retailers told Auto Retail that the customers are not aware that the vehicle doesn't belong to them.

The push for a less pressured sales environment and the rise in customers' demand for finance has necessitated a restructuring in other ways for some companies. Mr Savage explains that Perrys now places a dedicated finance expert at the centre of its business.

“We have business managers in the dealership who handle the deals. They are the experts in finance and are relatively well-paid,” he says. “Having that resource helps the sales and the customer service flows much better as a result. Car dealerships are having to go in that direction.”

Justifying the outlay on a dedicated member of staff becomes trickier at smaller dealerships, though, but the business manager role is not one that can be outsourced, says Mr Savage, and having the individual in the showroom allows for a smoother experience for the buyer.

Home-based research is another way in which customers have forced change at retailers, with many now carrying out extensive comparisons before they arrive at a dealership with, in many cases, a choice already made.

“Online is far more important,” says Arval's Mr Waters. “What has changed is that you used to go to a dealership and sit in a car, looked at the

boot and took it for a test drive. Now a consumer does all that research online.”

However, Waters doesn't believe the opportunity for offering an extra financial incentive has been completely removed, saying: “I don't think it has made a massive difference. Particularly if you are going into a dealer or talking to a broker they will still have a margin and have flexibility. If you take a price from online and take it into someone they can do a deal.”

Mr Luscombe agrees, saying: “If the consumer knows, pretty accurately, what his car is worth, the difference to where he buys comes down to the service he receives. It is like a supermarket. If the price is the same, you will go where the service is better.”

As well, there is still a place for the physical dealership in the buying process, especially with the variance that comes with selling used cars. The attractiveness of finance has moved many buyers from the second hand vehicle they might have been considering into a brand new one. Mr Savage says that Perrys is selling one and a half used cars to every new one, with the target being two to one.

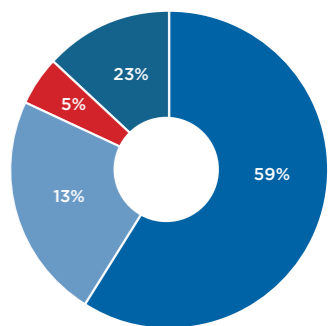
Mr Waters explains that the trickle down of affordability at first registration also has a knock-on effect, and allows people to consider a newer car than they might have first imagined. “What we've seen is that new cars are competitively priced so used cars will be too. Someone who was looking at a five-year-old car might look at a three-year-old car.”

To maintain the focus on used sales, which can offer greater margins and more profit, Perrys has kept the two sides of the business divided.

“We try to have separate departments otherwise you get a dilution,” says Mr Savage. “In plate-change months all the focus can go on new cars so keeping them separate keeps the focus on both.”

The changed consumer mindset that has brought about a greater acceptance for new-car finance can't be attributed to one single factor, with smartphones, financial pressure on young families trying to get on the property ladder and the attractiveness of modern vehicle technology and safety features all contributing to the rise. Whatever the reason, it is clear that it has brought new opportunities, and challenges, for the modern retailer that faces competition from many sides.

**What is behind the rise in the popularity of PCP?**



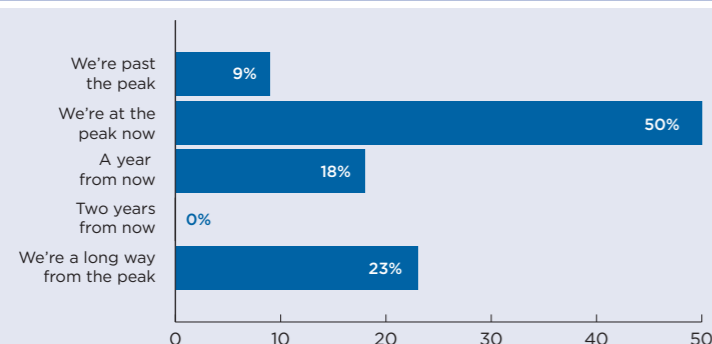
- Low monthly payments
- Public acceptance of monthly payment model
- Ease of transaction
- Other

**45%**

- the number of PCP and PCH customers that aren't aware they don't own the car

Source: ARN research

**When will we see 'Peak PCP'?**



# Developments shaping the industry

## Car dealers have a crucial role to play in the next few years, with innovative new technology being introduced to the market of the like that hasn't been seen before.

This is the view of Matthew Avery, Thatcham's director of insurance research, who says: "There is a huge role there for the retailers to translate to the consumers. Consumers may know something, but retailers have to do that translation job."

Mr Avery says that one notable change in the coming years will be the spreading of technology that is currently only seen on niche and high-end products, leading to potential confusion among buyers. The confusion, says Mr Avery, could come in two areas – the technology itself, and the terminology used to name it. He likens it to the recent rise in autonomous emergency braking (AEB), brought about in part by the inclusion of the AEB criteria in the Euro NCAP crash test from 2014.

"We have 56 different names for AEB from the manufacturers," says Mr Avery. "The consumer has no idea what Active City Stop, City Safety or Smart City Brake Support et cetera are. You can multiply that number 10 times with lane keep assist, turn signals and the like."

Mr Avery is not the only one who feels this semi autonomous technology will have the biggest impact on the cars that arrive on the market in the coming years.

"When we look at the industry there are three trends – automated, electric and connected," says Joern Ebberg, spokesman for mobility solutions at Bosch. "Automated is the biggest trend and will take away the driving from the driver – in the future it will take over this task."

"It will come step-by-step, we are currently at partially automated driving, which is level two. This means that you, as a driver, are still

responsible for steering, and can't pass the driving task to the car. This is something we will see in the market up to 2020."

The current technology that has been making its way onto the market, predominantly through the premium class cars, will become both more mainstream and more intelligent. This technology includes systems such as lane-keep assist, which warns the driver when they drift out of their lane at speed, adaptive cruise control and blind spot warning will all become more prominent.

Mr Avery suggests the next evolution of lane-keep assist is what will be the most notable in the market in the coming years, saying that the systems will become more sophisticated and able to assess how much to intervene. The aim is to get the systems to work with the driver, rather than become an annoyance that is then ignored.

"We drill down into the data and customers say they don't like the systems – they nag, they annoy and the driver turns them off," says Mr Avery. In order to encourage greater intelligence from the various manufacturers that are involved in making the next generation of the technology, Thatcham is aiming to take a similar approach as it took with AEB. Any manufacturer aiming for the full five-star Euro NCAP crash rating is bound to offer AEB as at least an option across the range.

"What we are doing is designing a test system with Euro NCAP that makes systems much smarter," says Mr Avery. "They assess the threat level. If you are crossing a solid white line and there is no car coming, it uses a low level vibrate. If there is a car coming the other way then the system takes over and steers you back."

The new test is expected to come into force in 2018, and is likely to use a similar approach to the AEB test, which will see manufacturers able to get a higher rating for more sophisticated systems.

The next step of automated driving is going to require more than just upgrades to the car, though, with the road network infrastructure

also in need of adapting in order to fully realise the car's potential.

Alex Mangan, automotive product marketing manager from mapping and connected data company Here, explains how the interaction with the car can be taken outside of the car.

"If I make plans for dinner with my wife and look up a restaurant and save it to my favourites, then when I get in the car it knows I want to go there and there is no need for me to enter a destination," he explains. "When I get there it gives parking recommendations, based on my preferences – whether I want to park near to the restaurant or further away for cheaper. When I get out of the car I am offered walking advice to the restaurant."

To truly realise this potential, though, the infrastructure will need to feed information back from the parking locations. Newly built off-street car parks are now including occupancy sensors, but the next challenge is on-street parking, but Mangan says that systems should be able to provide advice on this in the coming years: "We are able to take data from cars driving around, so we are able to tell people where an off street park is, but also what restrictions there are to on-street parking," he says.

Although it is widely accepted that autonomous driving will arrive in stages, with the truly self-driving car still some way in the future, much of the tech is already here, with Mr Ebberg saying: "The next most desirable tech will be the highway assistant, it supports drivers on motorways and is a combination of already existing technologies."

To allow this to become more than a glamorous but unusable piece of tech, another large development to the UK road network is expected to be implemented in the coming years, according to Thatcham. Mr Avery believes that geofencing is an important imminent development, and will allow safe and legal use of self-driving equipment in certain areas, such as on motorways.

"Geofencing will not be ground based, it will use mapping on the vehicle and the camera that most systems use for road sign recognition," says Mr Avery.

Self-driving systems have been proved to make roads safer, with AEB shown to reduce

crashes in cities by around 38%, which should have a positive impact on insurance costs. However, one area that could suffer in the future is security.

"I think it will get worse before it gets better. A big issue is cyber crime," says Mr Avery. "Right now you have to smash a window or a door lock to get into a car but lots of vehicles have the ability to talk to a mobile phone and that is a problem, it's an attack surface."

"It could hold back progress. All manufacturers are building teams to deal with this as they realise there is a huge reputational risk."

One possible way of improving security is the increased use of biometric technology, such as fingerprinting as used on mobile phones, but this is not likely to come for some years yet.

Self-driving systems are feasibly relatively close, but one big barrier is the law – currently self-driving systems are not permitted to take over control of the car completely, and drivers are legally required to keep a hand on the wheel at all time. This means that the industry can get ahead in terms of getting the message across.

"It's about merging tech with legislation – we see this as an evolution," says Mr Mangan, at Here. "Some people are jumping into an automated world where the car doesn't have a steering wheel but we see this as taking consumers on a journey so they trust in the tech so it will be much easier for when the tech is in place so they will invest in it."

This journey is going to require a degree of education, with many of the systems having names that imply more ability than they currently offer – Tesla's Auto Pilot for example. "There is a significant role for the sellers to communicate the advantage of this tech – now is the time to do it," Mr Avery says. "The real pinch point will be 2018/2019. That is when things will change in terms of the Road Traffic Act and what manufacturers can put on their vehicles."

"Our vision is you have a safety video like you have on an aeroplane. We would like a standardised script that takes you through all the things. If you travel a lot you switch off, and if that is the message with automated tech that means they get the message, brilliant."

“One possible way of improving security is the increased use of biometric technology”

“Customers say they don't like the systems – they nag, they annoy and the driver turns them off”

52%

- the reduction in vehicle theft offences in 2015/16 versus 10 years previously

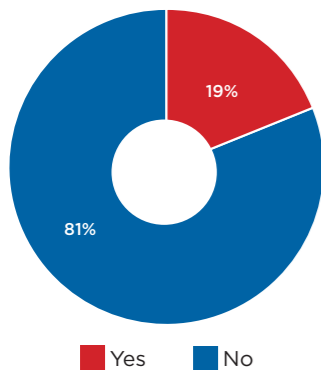
source: <https://www.ons.gov.uk/peoplepopulationandcommunity/crimeandjustice/bulletins/crimeinenglandandwales/yearendingsept2016>

# Connected cars

84.8%

- the number of smartphones sold in 2016 running an Android operating system

Retailers that are supplied with data from connected cars by the manufacturer?



**The next big power struggle in the automotive industry will be a multi-directional tug of war, with the consumer at the heart of it. The asset being eyed up by all parties is not a tangible one, but one that could, if used correctly, provide endless benefits to all concerned – data.**

The rise of connected cars has come in a variety of forms, and from a number of different directions, with manufacturers and aftermarket installers tapping into the modern car, and recording where it goes, whether it suffers a malfunction and how it is driven.

Paul Inness, CDK Global's International Strategy Director, explains: "Today you have got a mixed environment. There are cars with no connectivity at all, cars with systems in-built from the production line, and 'after the fact' cars that are using the OBD [on board diagnostics] port."

Collecting data through the OBD port allows for companies to add value to a car after it has been sold, most often for black-box insurance schemes that assess how the driver behaves, and reward or penalise accordingly. These use elements such as yaw sensors to record harshness of braking, cornering and acceleration.

This raises an issue with cars that don't have in-built connectivity, with Mr Inness saying: "There are a range of benefits and you might see a battle for that port. An insurer and a dealer group might both want to put their dongle in there."

This battle will continue for a while yet, but in the future it will be brought in house, allowing manufacturers greater control. Experts believe that any future form of connectivity will have to be embedded, having been developed by the OEM and sold off the factory line.

The principal aim of the many systems that require connectivity is not to record information about what the driver does, where they go and the health of their car, but capturing this data is possible nonetheless.

This offers a vast array of possibilities and benefits to both the car's owner, and every member of the retail and ownership chain. One of the biggest opportunities is customer retention, says Here's automotive product marketing manager, Alex Mangan. "By being able to drive drivers back to the service channel

through recommendations in the head unit, they can incentivise CRM through the service channel."

Diagnostics and maintenance have a particularly heavy overlap, say experts. You can have a sign from the in-vehicle system that you are due a service, which then books the car in. It is all automated – you get booked, you get a call and you take it in.

This could see a drastic reduction in the amount of time required for service handover, allowing both customer and service centre to make better use of their time, and is something that is starting to appear in the industry already. A study for this report revealed that 19% of retailers are already receiving information from connected vehicles from the OEM. However, with 81% not receiving any information, there are plenty of opportunities that still remain.

Andrew Till, chief technical officer of Harman Connected Services says that data will improve the on-going relationship between retailer and car owner, moving beyond the typical engagement points of initial sale, service and trade in. Owners are expected to be able to get access to upgrades without going anywhere near a dealership.

"The data received through connected cars will allow drivers' habits to be recognised and enable retailers to offer subscription services and even allow the customer to purchase new services using over-the-air [OTA] updates," says Mr Till. These updates will be personalised, and tailored to the owner's usage and preferences, much in the same way as targeted internet advertising means customers are shown products that are relevant to their interests and search history.

The vehicle-related services could go as far as upgrades to the actual car, with the owner being able to upgrade remotely. A software update could also see owners unlock new features on a car, or upgrade power with a simple at-home purchase.

However, the services and benefits that a retailer can offer their customers are not limited

to the automotive sphere. If a car regularly drives to a Starbucks, retailers can offer the customer a voucher to spend, for example. This extra level of interaction would allow an improvement of the relationship at a time when physical meetings between owner and brand are potentially being reduced.

Experts predict more tie ups between car companies and the likes of Microsoft, Amazon and Google et cetera.

This would see more uniformity for customers, with operating systems from phones, tablets and computers replicated in cars. This in turn would allow the creation of specific apps that would be tied to a user, rather than a car – entertainment or navigation systems would be available to a customer across multiple cars rather than just in their own vehicle.

There is potential for, say, an Android-based system that would have apps on the App Store, say analysts. The driver could access an app on any device, so long as it has the same operating system, making cars become one of those devices that are connected and become part of a connected living experience.

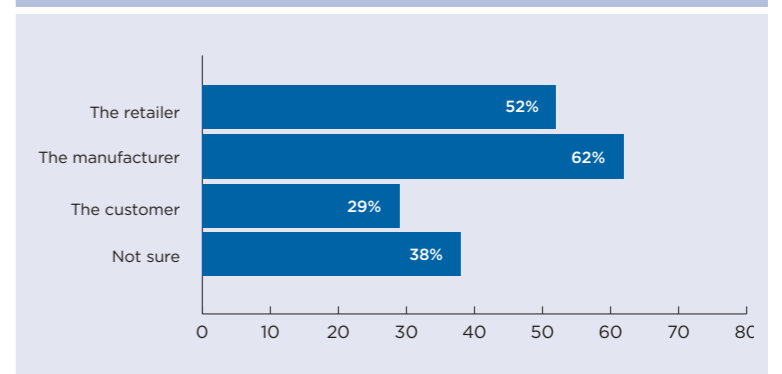
The benefits of an increased use of data are clear, but there are two major issues – security and ownership of the information. An Auto Retail Network study showed that 62% of retailers felt that the manufacturer owned the data, while 52% felt it was the retailer's and just 29% felt it belonged to the customer. Perhaps most telling was the 38% that said they were unsure.

However, in reality it is a simple issue, says Here's Mr Mangan. "The end consumer owns the data – full stop. If the end consumer owns it, it can be shared with the OEM or not."

A consumer can in theory deny access to their data, and laws are geared to ensuring their desire for privacy is respected.

However, manufacturers are expected to be able to offer sufficient benefits to persuade customers to sign up and allow access to their vehicles. Mr Inness at CDK is just one that feels it will be a mixture of incentivisation and restriction of access to benefits that will guide customers toward sharing their data. As with a mobile phone, if you get an update to your iOS then you have to accept then you don't get features such as the latest security, meaning

Who owns the data produced by a connected car?



you might have more crashes on your phone.

The benefits, and the trend of increased digital consumer acceptance of terms and conditions leads experts to suggest that most, if not all, will sign up and allow their information to be used.

Security is an area that is still under development. Matthew Avery, of Thatcham, says: "I think it will get worse before it gets better."

However, it is a high priority for the industry, as he adds: "All manufacturers are building teams to deal with this as they realise there is a huge reputational risk. If your car can be turned left by someone pressing a button it is a big threat to reputation."

One approach is to develop separate operating systems for the different functions within a car, with factors like infotainment on one OS and safety critical features like cruise control on another, as those don't need to be permanently connected to the outside world.

Experts point to the worlds of banking and telecommunications, which have a history of being connected, and have had the same challenges and different threats that can be applied to an automotive environment. The industry doesn't have a choice – it has to get it right.

The mainstream connected car is coming, and soon. The likes of Ford and GM are just as interested as the premium manufacturers. Consumers have an expectation and the industry needs to ensure it is at the forefront to interact with customers.

“Data will improve the on-going relationship between retailer and car owner, moving beyond the typical engagement points”



# Driving value through relationships in the Automotive Industry

## Meet the UK Automotive team

### Automotive Industry Leader Deals



**Cara Haffey**  
Automotive Leader,  
Industrial  
Manufacturing Leader

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Cara is head of UK Automotive and Industrial Manufacturing for PwC. Automotive supply chain is a key strategic focus of hers and she has extensive experience of advising businesses that serve the OEMs and Tier 1 suppliers, whether through components, tooling, plastics, paints.

A corporate finance deals partner, Cara is a trained CA. Before joining the firm she previously worked at British Airways plc, and since joining, she has worked regionally in Scotland, London and the Midlands in the Industrials markets. Her international secondment saw her focused on PwC's international deal origination team.



**Darren Jukes**  
Leader of Industry for  
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Darren has 20 years experience in the industrial products and services sector and has worked extensively across the Automotive value chain. In the retail segment, Darren has worked with a number of the UK's leading dealership groups looking at both acquisitions and disposals. He has also worked in finance, sales and dealership management for a private dealership group.

Outside of PwC Darren has a keen interest in motorsport was a Board member of Midland Automobile Club for 13 years holding the positions of Treasurer and Vice Chairman.

### Assurance, AutoRetail



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Based in the Midlands Neil has over 20 years of experience working with businesses in the Automotive Industry leading a number of audit and wider assurance projects across the industry from manufacturers through to retailers. Neil is on the editorial panel for industry publication Auto Retail Network and holds regular forums for Finance Directors, Controllers and Internal auditors within the industry to network. Neil is part of PwC's Automotive Leadership team with specific responsibility for Automotive Retail.

### Strategy&



**Rich Parkin**  
Partner, Strategy& Advisory

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Rich has 28 years experience, of which 18 with Strategy&. He has been based in the US, France and UK, and previously led Strategy&'s Europe/Middle East automotive team.

Rich works along the automotive value chain in corporate and business unit strategy and sales and marketing topics. Client include suppliers, OEMs, and the full range of downstream (NSCs, wholesalers, retailers, finance and fleet management).



**Mark Coultie**  
Partner, Strategy& Advisory

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Mark has over 24 years combined industry and management consulting experience. His experience spans international clients in Europe, US and Asia within multiple private sector industries.

He specialises in product cost reduction, programme management, enterprise wide operational excellence, operations management strategy and supply chain.

Mark has deep Automotive industry experience having worked with the major Auto OEMs both locally in the UK and globally.



# Driving value through relationships in the Automotive Industry

## Thought leadership and insights

We are pleased to support Auto Retail Network's Future of Mobility report. Please see below for further thought leadership and insights.

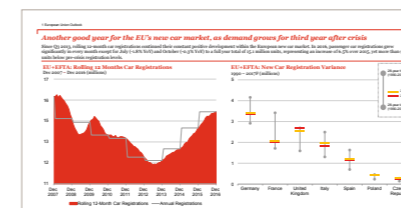
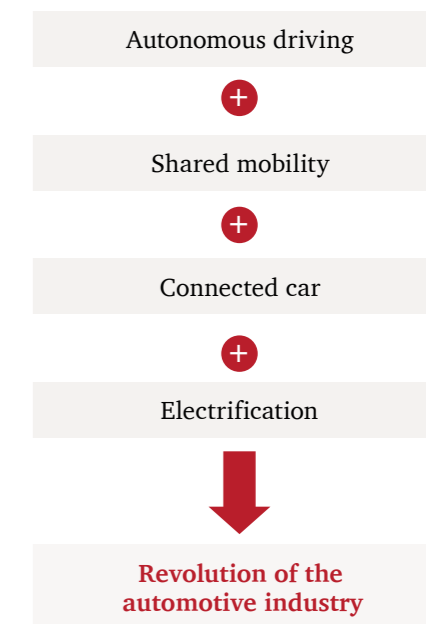
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# Urban versus rural

**When the world of science fiction wants to show a glimpse of the world of transportation in years to come, more often than not it takes us to a highly evolved version of a barely recognisable city.**

It's rare that we see self-driving futuristic machines heading out for a scenic drive in the countryside, and we certainly never see them spending an hour or two on the M1.

Advances in technology, punitive urban emissions legislation and investment in non-automotive transportation in modern cities have all combined to help create a scenario where these fictional scenarios no longer seem so outlandish. Even manufacturers themselves are accepting the idea that not every individual will own a car. The Renault-Nissan Alliance, for example, has run pilots for car sharing in major cities such in France and America, and launched a project called Get & Go Micra that will match drivers using their social media profiles to create a shared ownership scheme in Paris.

However, the population is not about to move en masse to a series of megacities, and public transport, car sharing clubs, bicycle hire schemes and short distance solutions don't work for those who live in the countryside, where the needs remain much the same as ever.

This divide is only likely to get more pronounced in the future, and already we are seeing the rise of a new style of inner-city automotive retailer in response to urban areas that are tight on space, and shoppers that are tight on time. Hyundai, Tesla, Jaguar, Land Rover, Seat and more have all launched initiatives that have moved their brands away from the traditional dealership, and into a car-lite showroom in locations such as Westfield and Bluewater shopping centres.

The impact being made by these locations is

already being felt, according to David Manchester of Automotive Assets: "Consider the strategies that Hyundai and others are employing in places like Westfield and Bluewater in London. When they started, people were sceptical but from day one they were in the top 10 in the sales charts and now other brands are starting to follow them."

Entering a new location could open a brand up to a new market, and not impact on traditional retailers, but these new-style dealers have had an impact on the local area, reckons Louise Wallis, head of business development at the National Franchise Dealers Association. "There is an element of complementing [with this new approach] but they are a challenge to traditional dealerships as they are in places that people are going for other reasons," she says.

There are several trains of thought over whether the car-lite showroom approach provides a challenge to the traditional retailers away from the large shopping centres or not. If dealers are impacted by the new urban model, then one approach, according to experts, is a shift of focus from one of a sales environment to one that is more service oriented.

"Customers don't necessarily want a courtesy car; they are happy to wait if there is wifi, computer access, decent coffee, et cetera," says Mrs Wallis. "This is a development that has been happening for 5-10 years but has been getting more sophisticated of late."

Mr Manchester feels this is something that needs to go even further, though, with rural retailers needing to change their approach to business on a more fundamental basis. "I think the rural dealer has to go down the authorised repairer route," he says. "People will travel further for a purchase than a service or repair. If you are a semi-rural location then you are in a strong position as you won't have the competition."

He cites the example of a dealer that turned a struggling sales business into one that was almost solely workshop-based. Initially it

concentrated on the brand with which it had made its name through sales, but slowly added other brands to become a multi-manufacturer specialist.

"That is the way forward in rural locations – put in three or four more ramps," he adds, saying that warranty work is of particular importance in this situation.

However, it is also believed that we are already seeing the emergence of a two-tier system, and that the modern metropolitan model can co-exist alongside the more traditional forecourt system.

"They are servicing two separate markets," says Mrs Wallis. "The new metropolitan market is appealing to a metropolitan audience while rural dealers are appealing to a small market town buyer that has a different approach to buying a car. It's not a case of attracting people to them – they have a strong market around them already."

This is particularly true in the case of the secondhand market, where the traditional dealer will remain strong, says Mr Manchester. "There are a lot of dealerships with strong used car sales in rural parts of the country," he says. "Those who buy a used car will want to take it back to where they bought it."

The evolution of the car market could only see the divide grow, with locations in urban areas more likely to cater to adopters of alternative technologies due to a shorter average journey and a more advanced infrastructure. Mike Waters, marketing director at Arval, feels that there is an education job to be done in a way that has not existed before.

"It is similar to the Apple Geniuses, where you walk into a showroom and you have four different combinations of tech and you want someone who can explain the relative benefits, not just the difference between petrol and diesel," he says. "They will need someone to explain properly what the differences are for them. It's important for all parts of the industry – you don't want to sell a car to someone that doesn't work for them."

Sooner or later, visitors to these car-lite showrooms will want to try out what they are spending their money on, though, and the test drive is set to evolve as part of the process, too, according to Mrs Wallis. Rather than

having a selection of vehicles at their disposal, dealers could have access to a wider fleet of cars made available to more than one location.

"You could end up with central pools of cars," says Mrs Wallis. "Dealers might not have a full selection, or they will have none at all and they will be pulled off a central pool."

Versions of this are already in place, with Hyundai utilising telematics to pinpoint the locations of the test fleet that is available to its Westfield, Olympic Park and Bluewater locations. Live mapping will allow staff to identify which of the company's 120-strong fleet of cars is nearby and most appropriate for the customer to test.

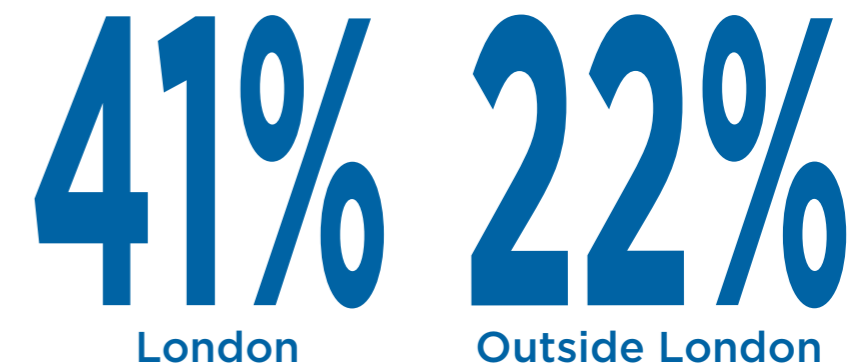
Another option is the one offered to potential Mercedes customers, who are able to visit Brooklands and try almost any model in the company's range. This is not something that would work on a dealer level, though, with Mr Manchester saying that it is unlikely to be feasible, especially while larger manufacturers have coverage with multiple outlets in an area.

Although there is a lack of agreement on exactly what the dealer of the future is going to look like, the one thing that seems to be clear is that we are set to see a difference between the approach taken in rural and metropolitan areas. A two-tier, and possibly even a three-tier, system appears to be well on the way if it isn't here already.

“Rural dealers are appealing to a small market town buyer that has a different approach to buying a car”

“Already we are seeing the rise of a new style of inner-city automotive retailer”

## Households without a car



# Autonomous cars

**The headlines at the Consumer Electronics Show in 2012 were dominated by what would be seen as traditional technology - laptops, tablets and phones jostled for attention alongside televisions and cameras. Just five years later, in 2017, the car manufacturers had moved in.**

Alongside in-car technology and wireless charging, several major manufacturers took the opportunity to show off autonomous car concepts (Toyota, in the case of the Concept-i) or announce plans to put a self-driving car on the road in the coming years, as Audi did in collaboration with Nvidia.

However, autonomous cars are not the future; they are very much the present. The technology that has been creeping ever more into standard kit lists of new cars is all geared toward allowing the vehicle to drive itself. The sensors and systems behind equipment such as autonomous emergency braking, intelligent cruise control, lane keep assist and park assist allow many cars of today to drive, steer and stop themselves in a low-level of autonomy.

EuroNCAP has included AEB as part of its crash testing procedure since 2016, and Thatcham, the

UK's safety research organisation, says that 21% of cars available to buy new in 2016 have AEB as standard, while a further 27% offer the equipment as an option. The adoption of this technology is a good barometer for the rate of introduction of autonomous technology into the mainstream.

Matthew Avery, Thatcham's director of insurance research says that we are not likely to see it offered across the car park for a while yet. "Our modelling is saying not all vehicles will have autonomous emergency braking as standard until mid 2020s," he says.

Thatcham currently estimates that around 3-4% of the fleet of vehicles on the UK's roads are fitted with AEB, and points out that there are still new vehicles that don't have it even as an option. "Standard fit is a long time off," adds Mr Avery, with the time when it will be available still just under a decade away. "It will be hard to find a passenger vehicle without AEB by 2025," he believes.

According to the SMMT, conditional automation - classed as level 3 autonomy - will be possible on the UK's roads by 2025. This is the point at which technology will allow the driver to hand over control to the car, and not need to monitor the situation around the car at all times. However, the driver still needs to be able to take over control, so this is not the stage at which a car can drive itself and allow them to read or even sleep behind the wheel.

To reach this level of ability, the car requires several systems that have only been seen on concept cars as yet, including a so-called 'intersection pilot' that would be able to drive the car up to and away from traffic-light controlled junctions. A highway assistant is also set to be able to combine with the satellite navigation system to control the car on the motorway and even exit at a junction that is predetermined by the driver.

An evolution of the park-assist systems that are already available is also feasible, which would see a car drive into a car park, locate a free space and manoeuvre itself into it. To make such

a self-parking system possible requires physical sensors to tell a car that a space is available.

"One evolution there is going to be is regarding the infrastructure that needs to be in place to realise this," says Alex Mangan, Here's automotive product marketing manager. "In some countries and cities it is better than others - in major metropolitans, the off-street systems provide that already."

However, many of these systems could feasibly be possible in set locations determined by geofencing, with no physical markers, required. Thatcham's Mr Avery says that there are updates required in this area, though.

"We will have to have a better level of system mapping," he says. "It will be important that the vehicle knows exactly where it is and the system is not open to abuse."

One big as-yet-unresolved question concerns morality and the decisions taken by an autonomous car when faced with a choice between several different hazards.

Dr Maarten Sierhuis, director of the Nissan Research Centre, feels that it is not possible to equip a car with the ability to make value-based judgements: "I think it is immoral to develop a system with morality." However, it is a topic that will have to be addressed eventually.

Another challenge, and one facing retailers, is that of standing out - if the buying decision doesn't involve an emotive element related to the driving experience, then it makes choosing between different brands that bit harder. To some extent this is a problem that is out of retailers' hands, according to Hyundai UK's president and CEO Tony Whitehorn.

"You have to be at the front end of that, that is the key now," he says. "For us it is about exploring it now. In 50 years time everybody will have it."

The manufacturers, says Mr Whitehorn, have to be making statements in terms of the technology that they are bringing out, and also the technology that they are proposing, to show that they are making greater strides than others so they are not left behind.

There is, however, a role for retailers as this technology emerges. "There is a selling job that needs to be done, the same with electric and

alternative vehicles," says Louise Wallis, head of business development for the National Franchise Dealers Association. "Dealers need to be getting the message across about the technology."

The biggest challenge, she says, will be to win over those that want to hold on to a level of interaction with their car, and showing that this technology need not be taking that away. "The first challenge is whether people will be happy to drive them - they do enjoy driving and might not be happy to give that up," says Ms Wallis. "Doing the commute [in an autonomous vehicle] is great, but you might want to go out and drive at the weekend."

The selling is something that is likely to evolve organically, as the car-buying public ages with the technology. "It might be the younger generation who don't always have a licence [that will be more convinced]," says Mrs Wallis. "I think it will evolve with the generations."

This education process is something that is necessary even now, with Robert Forrester, CEO of Vertu Motors, saying that owners are not making the most of the technology on their cars: "I think there are a lot of customers out there who only use about 25% of the tech," he says.

To combat this, Vertu has put procedures in place to help guide a new owner through the new technology on their car to help them make the most of it. "To get the job right, you need to have lengthy handover," he says. "What we have found is that you need to get them back a week or so later and have a walk through of the car to talk them through the technology."

It has been suggested that autonomous and connected cars could reduce interaction with the retailer, especially if they are able to self diagnose problems, and install over-the-air updates to their software, but Mr Forrester feels that there are more opportunities for interaction.

"I think connected cars will make dealers more connected with customers," he says. "If you break down on the motorway the car gets delivered direct to the dealer. It is personal communication, just through a different means."

Cars might be heading toward a future where they can drive themselves, but their relationship with humans will remain crucial at every stage of the buying and owning process.

“Owners are not making the most of the technology on their cars”

# 3-4%

- the number of cars on UK roads estimated to be fitted with AEB

“Autonomous cars are not the future; they are very much the present”

# The future

**The future of the car industry has never been under as much pressure from so many different directions as it is right now. As well as the age-old demands from the consumer, the environment and legislators on a local and national scale will all have an impact on the car of decades to come.**

What is certain is that the industry, and authorities are both aiming for an emission-free future. When planning for the Modern Transport Bill, the Department for Transport laid out its latest intentions, saying: "The Government has a very clear and bold ambition for all our cars and vans to be effectively zero emission by 2050."

UK legislators are expected to continue their carrot and stick approach toward a low-emission future but it is more than just taxation that will impact on the decisions taken by consumers and manufacturers alike, and decisions will vary on a national and local level.

Whichever way lawmakers choose to go Matthew Avery, Thatcham's director of insurance research, feels that they will always be on the back foot with the manufacturers leading the way and guiding how the law changes. "One of the problems we have got is the manufacturers are anxious to sell their tech. So manufacturers such as Tesla are selling a car that is beyond the spirit of the regulation and the regulators are having to play catch up," he says. "If it is outside of the regulation it is unclear whether it is allowed."

One example of how decisions will be influenced on a local level comes from Oslo. The Norwegian capital has announced that it intends to ban private cars from the city centre by 2019, and is taking a significant step toward that by removing 500 parking spaces from the streets and central urban area in 2017.

The aim is to push more in the way of alternative mobility services, which is something expected to be championed from all elements of the industry. Experts are predicting a rise in demand for a range of on-demand services, including taxis, ride sharing and micro mobility, using things such as bicycles and scooters. These mobility services are expected to reduce the number of cars, with one car share able to take 10-15 cars off the road. This could translate to a reduction by as much as 20m in the number of private

vehicles on the world's roads by 2025. This has led to companies, both manufacturers and others in the automotive industry, exploring ways to make access to mobility outside of the car easier. One option is through partnerships, which would allow customers to be able to pay one monthly fee and get access to a number of different transport options, be it public transport, car hire schemes or even car shares.

An increased acceptance of car share schemes and the like is only just starting to filter through just now, and is unlikely to yet be influencing customers' purchasing decisions. Auto Retail Network research has shown that only 29% of retailers report that their customers are using car clubs, and even then it is only a handful, while 48% of retailers said that none of their customers had taken the step into using a car club. As this increases, it may lead to customers choosing cars that cater for the majority of their needs; possibly choosing a smaller, or electric, cars and relying on a car club for occasional longer trips.

According to research carried out by Auto Retail Network, retailers believe the relationship between manufacturer and retailer is likely to change in years to come, too, with the majority feeling that the car makers will play a bigger role. When asked how the manufacturer's part in the sales process will change in future, 86% of retailers felt that they would play an increased part, while only 14% felt the manufacturers would take a backward step. In any case, the situation is unlikely to remain the same.

But beyond self-driving technology, what else is there that can realistically change over the car today? Tony Whitehorn, president and CEO of Hyundai UK feels that we will see an element of change similar to that in the personal electronics industry. "I think the car can start to become a true smart car," he says.

He gives an example of how the car might read the driver's stress levels, and react accordingly to help you feel better, or to

enhance your enjoyment of a particular journey. "When you are in your car and you have music playing and you come to a queue, why couldn't it change because you happen to like classical music when you are in a queue because it soothes you down.

"The way you temper emotions is by sensory stuff. A smart car will work out what soothes you. It might be a feel, it might be the fabric on the seats, the fabric on the seats changes."

This technology would interact with the driver in a variety of ways, going beyond taking data from a mobile phone and by using sensors to read the driver's emotions. Face-recognition technology is capable of detecting different facial expressions, while sensors in the seats, or even the driver's clothes can read other signs of stress.

"Let's say in 50 years time, every car will be a receptacle to receiving all the information that's in your knitwear and that's in your phone," he says. "You get in and it goes 'I know exactly what music he likes, exactly what smell he likes, I know exactly how he likes his seat.' That is a smart car."

Communication with the world around the car is another area that is open to change, according to Dr Maarten Sierhuis, director of the Nissan Research Centre in California. Because the majority of vehicles on the road are not connected cars, a lot of work is being done to communicate with the outside world by other means.

"Our social scientists have come up with the concept of communicating intent," he says. A series of lights, and a message on the car, will be able to tell pedestrians and other road users what a car, autonomous or otherwise, is going to do through the medium of lights or messages on the outside of the vehicle.

"We have decided it is better to show what our intent is than to tell you what to do - that is very dangerous, because if I tell you what to do then the person on the other side of the road might think it is for them," he says, adding that communication between companies, as with many other elements of connected cars, is crucial. "We need to standardise these ideas, with different colours it is going to get very confusing," he says.

But with all this change for the car, will the

retailer of the future need to change? Robert Forrester of Vertu Motors feels that, whatever happens, the fundamentals will remain the same. "I think the traditional style of dealership will evolve, it is already far more focused on customer experience and loyalty than it was," he says. "But I don't think that means we have to neuter our sales teams and make them 'product angels'."

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A lack of education could seriously hamper the adoption and benefits of new systems

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Certainly there will be an evolution, especially with an integration of more digital technology, such as the ability to use virtual reality technology to look at a car that a customer has specified, and the rise in online transactions.

"I think some elements from these new style of dealerships will transfer, I think we'll all be on online retailing soon," says Mr Forrester.

Despite this, we are likely to see many of the fundamentals remain, feels Mr Forrester. "I don't buy the idea that people are scared of going to dealerships," he says. "I have 96% of used car customers that are delighted with their experience."

This one-on-one relationship is likely to continue into the future, thanks in part to the increased amount of education needed with the rise in technology coming into new cars. As Thatcham's Mr Avery points out, a lack of education could seriously hamper the adoption and benefits of new systems. "If crashes happen because people misuse the technology, or don't use it, it puts a black mark next to things," he says.

With this need, the dealership of the future is perhaps not set for as quite a drastic reinvention as the cars it will be selling.

29%

- the number of retailers that say their customers are already using car clubs

“

UK legislators are expected to continue their carrot and stick approach toward a low-emission future

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