



accenture

# The automotive experience reimagined

---



**Rising expectations around sustainability, new definitions of luxury and digitally-enhanced vehicles are set to change the way people think about cars forever. Now is the time for the automotive industry to reimagine products, services and experiences that deliver against customers' new values, wants and needs.**

Connectivity, autonomous vehicles and electric and shared driving are four megatrends that had been disrupting the automotive industry—causing unprecedented technology and business model transformation—for a while.<sup>1</sup> Then a global pandemic magnified these pressures, forcing organizations to rethink many aspects of how they do business.

COVID-19 quickly devastated industry growth by almost instantly stalling consumer demand. In the U.K., sales of new cars were down 50% year-over-year by the end of the first national lockdown, in June 2020.<sup>2</sup> And by February 2021, British new-car registrations for that month had slumped to the lowest for a February since 1959.<sup>3</sup>

On top of this, there was widespread disruption to supply chains in an industry all about “just in time” production, global networks and lean inventory.

Within weeks of the pandemic's start, three of Japan's largest carmakers—Nissan Motor Co., Mitsubishi Motors Corp. and Mazda Motor Corp.—had put 20,000 of their workers on temporary leave.<sup>4</sup> In Germany, meanwhile, COVID-19 compelled an estimated 95% of automotive-related companies to put their workforces on part-time schedules during the shutdown—and people who were temporarily laid off received a substantial amount of their pay government-subsidized.<sup>5</sup>

Lockdowns and social distancing measures used to stem the spread of COVID-19 also sped up important shifts in consumer behavior that were already set to have a significant impact on original equipment manufacturers' (OEMs') futures.

Conscious consumption, shopping local and e-commerce have all grown significantly over the past year and the acceleration of these trends are set to continue.<sup>6</sup> While just a year or two ago attentions were fixed on convenience and simplicity, now it's all about rapidly evolving priorities around sustainability and redefining notions of “ownership.”

A year from the start of the first lockdown, automotive sales were starting to rally.

The global passenger car market—valued at

\$1,321.74 billion in 2020—was being tipped to increase at a compound annual growth rate (CAGR) of 9.3% this year and at a CAGR of 8% to \$1,988.72 billion by 2025, according to one survey of the global passenger car market published in February 2021.<sup>7</sup>

Now, as OEMs look ahead to a future beyond the pandemic, the time is right to reimagine the role of cars in our daily lives for good—reestablishing their value and rebuilding the emotional infrastructure and relationships humans have with them.

It's a shift that can be likened to the humble horse evolving beyond simply being viewed and used as a functional “beast of burden.” In the same way, people will expect more of their cars in the future—more safety, more experience, more flexibility and more integration into our daily lives beyond simply being a mode of transportation.

Moving forward, OEMs need to organize the whole business around the delivery of exceptional experiences, which is what we call the Business of Experience. It means rewiring the customer-facing functions of the organization: marketing, commerce, sales and service. The Business of Experience is an approach that allows organizations to become customer-obsessed and reignite their growth.



Here, we identify four opportunity areas. Each is significant and important in its own right. Combined, they represent a reimagination of the whole automotive domain. This is the time for OEMs to take innovation seriously and holistically reimagine the automotive experience in line with technological progress and human change.

- 1. New sales experiences**
- 2. Change for good: The road to zero emissions**
- 3. From lost time to prime time: Cars as experience platforms**
- 4. Software-defined vehicles: From predictive personalization to individualized interaction**

## Radical change driven by realism

The automotive industry has long been powered—and characterized—by change. From shared mobility to carpooling and communal mobility, there has been a massive shift in how people move from point A to B. Now, the industry stands on the brink of a radical change in attitudes toward car ownership.

Yet to date, many services and offers have struggled to deliver against what change demands, creating a perception that singular and one-sided solutions are not up to the job because personal mobility is just too complex, too contextual and too diverse.

Meanwhile, consumers' expectations continue to rise—especially around sustainability. People want more from their cars, and they want the companies behind them to deliver more, too.

OEMs need broad-based openness and courage to leave the beaten track and embrace the era of technology in order to rebuild automotive from the core. They need to integrate personal, shared and public transportation infrastructure into a seamless experience that adapts to the different needs of consumers. And they must address a set of underlying, accelerating trends that fall into two broad categories.

### Human trends:

People are reluctant to accept compromises around mobility—a necessary part of modern life and society—and they are often blind to the contradictions that exist. For instance, on one hand they strive for the luxury and flexibility of owning a car, on the other hand they're increasingly demanding more sustainable mobility solutions.

As a result, people feel torn between wanting to embrace greener lifestyles and not wanting to forgo the daily convenience of private mobility. They want everything at the same time and they expect OEMs to expand their offerings accordingly.

Meanwhile, cars are taking on new roles in people's daily lives. Increasingly, they're being reconsidered in terms of both functionality and usage. And as cars become more connected, flexible and adaptive, they're offering many of the features of a home away from home.

### Business trends:

OEMs need to rethink their entire business around people's new demands and respond to the value created by digital experiences.

To do this, they need to scale flexible digital capabilities across both their main business and the entire value chain—from new points of sale and payment models to logistics, production and product innovation.

Challenged by new entrants, new digital disruptors and new partnerships, incumbents also need to embrace agile software delivery, fast iteration cycles and constant expansion of digital services as areas of growth.



## Striving for a holistic view

What's needed now is nothing less than a reimagining of the automotive industry's foundational building blocks to explore completely new areas of value and expand the range of experiences in the daily lives of their customers.

It's too easy to focus on incremental areas of improvement. Instead, what's needed is an understanding of mobility as an integrative layer of working, living, social experiences and health. This understanding will offer progressive OEMs the opportunity to redefine their value propositions, set new industry standards and reimagine the future of mobility.

New digital sales experiences will make choosing and buying cars as smooth as the drive itself by offering radical transparency and letting people experience the vehicle in a virtual setting. Reimagined physical touchpoints will evolve from singular options to interconnected points that support and elevate the digital experience in the offline world.

As we move into new frontiers of sustainability, the road to zero emissions

will be paved with electric options, circular production and new models of shared mobility, going from one-time purchases to total cost of ownership. Meanwhile, expanding the car into a more versatile tech device will turn it into a true life companion.

Understanding how the decoupling of software and hardware can help us wrap consumers in a software bubble that moves with them from vehicle to vehicle will create a whole new paradigm.

OEMs that have high ambitions for human experience and embrace this kind of meaningful innovation will grow and sustain their mission while leading a positive shift in the automotive domain. They'll need to be ambitious, because radical expectations demand radical ideas.





# 01

## The new sales experience

---

**When buying a car, customers want a digital-first experience that combines the flexibility of virtual product interaction with the convenience of buying online and the personal consultancy of a dealer. With the use of e-commerce and expectations of brand experiences driven to new heights by the pandemic, now is the time to reimagine the car sales experience.**

### **What's going on**

The automotive sales model is primed for change.

Today, almost 90% of customers use online channels in the early stages of their decision-making journeys. While previously customers visited dealerships on average eight times before deciding what vehicle to buy, today the average is somewhere between one and two times.<sup>1</sup>



Meanwhile, many large original equipment manufacturers (OEMs) expect to achieve 25% of global passenger car sales through online channels with their trading partners by 2025.<sup>2</sup> In the world's largest auto market, China, digital sales are expected to account for 10% of new vehicle sales by 2025 and 43% by 2035.

Yet currently, most of the automotive industry's established OEMs still rely on a traditional sales model. Typically, this involves an OEM selling its cars to an independent dealer—with the dealer playing a central role in pricing, marketing and sales—then the dealer selling direct to the consumer.

New players such as Tesla, NIO and Canoo, however, are now challenging established OEMs and their dealers with a direct customer approach that offers convenient sales and mobility experiences.<sup>3</sup> And OEMs are starting to design new, more customer-centric sales models in response.

Before 2020, digitization was evolving the car sales experience and expectations around it.

It was clear that selling cars online wasn't as simple as putting inventory on a website or offering a sleek configurator, and that digital experiences that empowered and entertained were needed to transport people from browse to buy.

On top of this, the plethora of information and reviews available online had flipped the symmetry of information between dealers and buyers on its head.

Yet despite all this, the quality of the car-buying experience was falling short.

Then came COVID-19, and some important aspects of the automotive sales experience were highlighted. The first is the value of the digital experience in choosing and buying a car, which was magnified during the pandemic—a time when traditional real-world showrooms were forced to close.

Volkswagen and FAW's joint venture virtual showroom in China, for example, attracted 2.5 million customer views at its peak. More than 2,000 Volkswagen dealerships are presenting the current model line-up via livestreams.<sup>4</sup>

During 2020, car brands including Mercedes-Benz, Honda, Volkswagen and BMW launched online portals and embarked on an accelerated digitization of consumer touchpoints. Mercedes-Benz, meanwhile, launched a host of remote customer initiatives under the umbrella theme Merc from Home, which used digital tools to boost ease of purchase.<sup>5</sup>



The second issue raised by COVID-19 was the importance of OEMs meeting customers' rising expectations of the quality of the experiences associated with buying a car—expectations raised by the high-quality experiences provided by brands in other industries where digitization was more advanced.

When it comes to buying a car, customers no longer just want to be inspired and informed online. Increasingly, they want a digital-first experience that combines virtual interaction with the car with the convenience of buying online, plus the personal consultancy of a dealer.

Further, they expect all related experiences—from digital brochures all the way through to after-sales—to be joined up.

Now, as OEMs assess the lasting impact of shifts in consumer behavior caused by the global pandemic, the stage is set to address the shortcomings of the traditional sales model and pave the way for new sales experiences.



### **What's next**

The current sales model is likely to remain in place for some time. However, the time is right for OEMs to accelerate their efforts to tackle its many shortcomings.

Among the most important are an unsatisfying customer journey caused by limited online options; an inconvenient purchasing experience and insufficient channel alignment; inconsistent pricing, which results in intra-brand competition; and little engagement between OEMs and customers, which limits OEMs' access to customer information and so the capability for truly data-driven sales.<sup>6</sup>

Deserted showrooms have left lots full of cars and salespeople idle at a time when COVID-19 has accelerated people's desire for many more products and services to be delivered to them at home.

The relationships the sales model fosters in its present form are also lacking.

The fact that customers visit car dealerships infrequently—when they're shopping for a car or for a service or they're "locked in" with a particular dealer or OEM—makes the customer-dealer relationship purely transactional.



Further, car buyers are spending less time shopping and spending fewer days in market—during which time they are visiting a smaller number of dealers and making their purchasing decisions more quickly.<sup>7</sup> The knock-on effect of this is reduced time for dealers to build relationships.

Finding new ways to engage with customers more effectively—be that more personalized advertising or more convenient interactive sales journeys online—is an obvious opportunity.

Meanwhile, the limited contact OEMs have with their end customers impacts the relationship between the brand and the customer.

Customers don't really want to negotiate on price, research shows. When asked, 81% prefer fixed transparent prices, for example, yet they do want a physical, visceral interaction with the car as part of the sales process: 77% of consumers still want to buy in a physical store.<sup>8</sup>

Then there's the disconnect that often exists between the digital and physical components of the car-buying customer journey. With the majority of customers starting their car-buying journeys online,

misaligned digital and physical sales experiences can leave people feeling shortchanged.

All too often a customer who has configured a car online is either unable to access the additional information they need or test drive the precise desired car once they visit the dealership.

At the same time, it will be important to continue to evolve physical touchpoints and their role in customer decision-making and the sales journey. Some 70% of consumers find the concept of a brand experience center appealing, research by Cox Automotive shows.<sup>9</sup> Boutique-style city center locations for brand experiences such as Tesla Stores, Audi City Cyber Stores and Mercedes-Benz Visionary Stores are a few examples of new retail formats.

The case for change is further strengthened by how challenging it has become for dealers to turn a profit on new car sales as competition erodes their margins.

Another challenge associated with the existing model is that dealerships make more profit from aftercare service than the sale of the asset. This revenue pressure will only increase, however, with the rise of electric

vehicles (EVs)—the sales of which are now predicted to grow by 22% by 2026—as EVs need less aftercare.<sup>10</sup>

Yet while many dealers admit that new car sales are not profitable for them and want to change business models, they struggle to change due to capital investments, fixed sales territories and OEM relationships.<sup>11</sup>

Looking ahead, further pressure to change the current sales model will come from the growing sales of EVs—which typically last longer and have less wear and tear—and rising subscription usage models, such as Canoo's mobility in exchange for a membership fee proposition.<sup>12</sup> This will need to be balanced with the sale of services and experiences.





## Opportunities for reimagination

# 1. Meeting customers where they really are

2020 brought many changes to the retail experience, especially when it comes to what consumers will venture out for and what they expect to be delivered to their homes. Anxiety about health and safety will ease over time. Yet many shifts in behavior and expectations now look likely to endure beyond the pandemic.

It will be critical for OEMs to learn lessons from the pandemic. New digital retailing tools drove process efficiencies and achieved higher buyer satisfaction, for example, improving the automobile buying process during the prolonged downturn.<sup>13</sup>

Early in the pandemic, FCA UK launched Car@Home, a service that allows dealers to sell vehicles and communicate with customers remotely via videoconferencing.<sup>14</sup> It also introduced a chat function across all of its brand and retailer websites so, just like visiting a showroom, customers on the website can engage with their retailers in real time, receiving engaging, relevant information when they need it.

Tesla's touchless delivery experience, meanwhile, involves test-drive vehicles left in parking lots at Tesla locations, each with its unique QR code posted in the window. Interested parties scan the code, enter their information and get started on a test drive without talking or even seeing a Tesla employee.<sup>15</sup>

It will also be important for organizations to respond to habitual changes and meet customers where they can be found now: at home and online. This will require a seamless integration of the digital channel with the physical, which will continue to have an important role to play.

While customers browse and increasingly shop for their mobility online, there will still be important physical touchpoints. And it will be important that these physical touchpoints don't feel like starting from scratch or an interruption of the process.

Dealers need to take on new roles in the experience and have full access to customer data, preferences and choices in order to amplify the user's experience, not merely complement or fulfil it. In this way, disconnected and separate points of sales will turn dealerships into locations people use to explore their personalized mobility.

In India, Renault has trialed mobile showrooms, for example,<sup>16</sup> blending convenience with the tactile nature of car buying.

With a mobile showroom, the dealer can draw on a larger pool of cars to bring the closest car a prospective buyer has configured online to their home for a safe and convenient test drive. With the opportunity to touch and feel different vehicles and options seamlessly delivered to their door, the disconnect between the online and physical experience for the buyer is closed.

In the U.S., a number of dealerships are testing similar models in response to the success of new entrants. Carvana, for example, has innovated with its car vending machines, multi-story structures holding dozens of cars where buyers pick up their online purchases. It's operated using a special oversized coin the buyer puts into the machine, and out comes their car.<sup>17</sup>

Finally, nearly half of drivers want after-sales services to be integrated seamlessly into their daily lives, saving them the time and effort of having to go in person to a workshop or dealer service location, according to internal Accenture research.





## 2. Experience concierges

Today's car dealer plays the role of sales point and gatekeeper to vehicle ownership. But what if their role evolved to being a purveyor of experience?

As Experience Concierge to all our mobility experiences, a car dealer or OEM could create more reasons for authentic customer interactions and develop longer-term relationships based on trust. The opportunity is for them to play a greater role in helping consumers experience the car and truly feel what it would be like to own that vehicle.

Mercedes-Benz's User Experience team set three goals for the development of its in-car voice experience:

1. Allow drivers to talk as naturally as they would to another person.
2. Support more types of queries than typical voice services.
3. Integrate voice more naturally into the overall in-car experience so users can seamlessly switch between voice and touch control.<sup>18</sup>

Dealers need to double down on their profitable service business but not restrict this to pure car service.

Some dealerships already invite existing and prospective customers to track days to test the full potential of a car in a safe environment. Such experiences are often limited due to cost, however, which means opportunities to experience the car in a more immersive way are missed.

If a dealer were to help a customer arrange a night on the town—organizing dinner reservations, a show, perhaps even an overnight stay as part of an elongated test-drive experience—the customer could have a deeper, richer experience of what owning that car could really feel like. The dealer, meanwhile, could collect commission for the third-party referrals they've aligned to the interests of that customer.

Rethinking how dealerships create experiences in which the car plays an important part can help drive car sales, improve dealers' margins and provide customers with more emotional connection than achievable with a 30-minute test drive.



### **3. Partnering to evolve the dealer model**

---

New entrants such as Tesla have proven that the direct sales model has benefits for both the OEM and the customer, starting with the lower cost of sales. Traditional OEMs are encumbered with an existing dealer network, however. This means that they need to evolve the role of and relationship with dealers over and beyond simply running small pilots.

OEMs have an opportunity to partner with dealers and move from a wholesale model to a retail model where they may finance the dealer inventory, reducing dealer costs or subsidizing online advertising costs.

Ford, for example, partnered with dealers during the pandemic to offer new vehicle home delivery. Those who agreed to participate were offered incentives for completing the entire purchase process online.<sup>19</sup>

BMW is using a collaborative digital experience management platform to solidify relationships with its dealers and customers. Dealers and manufacturers collaboratively cultivate relationships with the customers they seek, using consent-based marketing and advanced analytics to engage with pinpoint accuracy.<sup>20</sup>

Further, the company has used customer data to create relevant digital experiences that have resulted in higher levels of online conversation.<sup>21</sup>

Evolving the dealer model to a retail model will also help reconnect the customer directly with the OEM and stabilize or fix the sale price. To achieve this, OEMs will need to invest in central customer management systems and help evolve the financial model to fix pricing and mitigate discounts, creating an opportunity for dealers to maintain their current 1-3% margins.





## 4. Customer ambassadors

Borrowing from different consumer sales models will unlock other opportunities.

A satisfied customer could become a customer ambassador who shows off their own vehicle in return for a small commission—something some enthusiastic Tesla owners have been willing to do for free. This model would reduce costs and create an authentic connection between consumers. It could also help new customers by connecting them with relatable people with whom they can discuss vehicles and product features.

Chinese EV company NIO is leveraging its many customers, who pride themselves on their loyalty to the brand, by building online communities of satisfied customers to encourage them to act as sales representatives. Existing owner referrals accounted for more than 45% of its cars sold in 2019.<sup>22</sup>

Other brands are partnering with social media influencers to leverage their followings and generate sales leads. For example, Tesla worked with the Chinese online celebrity Wei Ya to present the brand's models, specs and prices in an hour-long video stream on China's

Taobao shopping platform, which attracted 4 million viewers in April 2020.<sup>23</sup>

Chery, meanwhile, launched its new Tiggo 7/7 PRO model exclusively via livestream, generating more than 7,000 sales leads, according to official data.<sup>24</sup>

## 5. Data transparency

Customers are demanding greater transparency around how their data is used by organizations. These organizations need data—and more of the most useful data—to develop the new value-added, more personalized and relevant offerings customers now expect. A rich area to explore sits where these two needs collide.<sup>25</sup>

Inspiration can be found with the data-focused start-ups that have already emerged in this space.

Cloud-based software start-up Otonomo, for example, helps companies capture and monetize connected car data by harnessing and anonymizing it for use to create apps to provide services like EV management, usage-based insurance or subscription-based fueling.<sup>26</sup>



CarDr.com provides artificial intelligence-powered transparent and comprehensive used-car inspections.<sup>27</sup> It benefits dealers by enabling them to accurately appraise trade-ins and existing used-car inventory, as well as detect odometer and VIN fraud. It benefits buyers by giving greater transparency into the health of a used car.

The experience of buying a used car is often overlooked. Yet it's growing in importance due to sustainability concerns, and it's ripe for reimagining.

As with new cars, much information concerning used cars has been democratized. Yet with critical data still trapped in OEM and dealer systems, pockets of opaqueness remain. Systems like Carfax already provide some level of transparency.<sup>28</sup> Now, community-generated insight models are also evolving.

One example of this is the bringatrailer.com community—a rich set of aficionados who regularly dissect images of cars put up for auction to offer counsel and confidence to potential bidders around issues that can arise. Many of those providing these insights have actually owned similar vehicles so speak from experience.

Community-generated validation models like this are cost effective and can help build trust for OEMs.

## 6. Recharging drivers and cars

With the rise of EVs, the time it takes to charge their batteries and the number of charging stations mean there's an opportunity for dealers and OEMs to integrate charging into customers' daily lives.

Imagine if during the time that the car was charging, a customer could grab their favorite Starbucks coffee, access some salon services and even plan their weekend with an on-site Experience Concierge? Done well, such services could be not only a reason to visit, but possibly even more compelling than simply fueling the car.



## What automotive leaders can do next

### 1. Experiment and pilot

Small-scale pilots are a useful starting point, and many brands are already trying to do some or all of these things in markets like Scandinavia and South Africa.

To pilot moving from a wholesale to a retail model, start a dialog with dealerships to change the commercial model by finding a middle ground.

To explore potential for creating experiences that allow a customer to feel what it's like to own a car, take inspiration from Airbnb-style experiences—a long weekend camping in a Subaru Outback, for example, or a racetrack experience bringing people together to test-drive a high-speed, high-performance car.

### 2. Create direct relationships with customers

Today's car dealers are the middlemen between OEMs and customers. But what if OEMs built more direct relationships or provided the glue between the digital channel and the dealerships, like a customer relationship management (CRM) system that builds one view of the customer?

By building a centralized database to better retrieve and analyze customer data, an OEM can cut siloed data waste.

### 3. Bridge the divide

Customers want a digital-first experience that combines virtual product interaction with the convenience of buying online and the personal consultancy of a dealer. So, find ways to bridge the existing digital-physical divide.

Create new experiences around taking products and services to where customers are: in their homes. Take inspiration from online used-car dealer Carvana, a new entrant already doing this—with showrooms located wherever its customers are, from living rooms to mobile devices—to prove the model works.<sup>29</sup>



# 02

## **Change for good: The road to zero emissions**

---

**When it comes to sustainability, the automotive industry doesn't have a great track record. But at a time when consumers don't just want change but are demanding it, organizations have a powerful opportunity to take the lead in driving the sustainability agenda forward through the products, services and experiences they create.**

### **What's going on**

Consumer demands have driven sustainable automobile solutions to become a matter of survival for the industry.

Globally, 66% of car buyers consider sustainability when deciding if and what to buy.<sup>1</sup> On top of this, there's pressure from governments on manufacturers to support sustainability initiatives. Norway, for example, now plans to raise the per-ton carbon tax from \$95 to \$240 by 2030 to help reach its climate goals.<sup>2</sup>



Momentum for change is building. And with nearly 40% of people worldwide open to innovative e-mobility solutions, the pressure is on automotive original equipment manufacturers (OEMs) to change and adapt—fast.<sup>3</sup>

The road to zero emissions is paved with innovation and it's being powered by electricity. Electric vehicles (EVs) are one part of the solution, and many manufacturers are moving toward EV fleets. The share of total EV car sales is now predicted to be 10% by 2025, increasing to 28% by 2030 and 58% by 2040, though predictions vary by region and by OEM.<sup>4</sup>

Ford, which is on track to fulfill its commitment of an \$11.5 billion investment in electrification through 2022, recently doubled its commitment to \$22 billion and extended the timeline to 2025 while also investing an additional \$7 billion in autonomous vehicles.<sup>5</sup>

BMW plans to double its fully EV sales this year, which already accounts for 15% of its sales in Europe.<sup>6</sup> Tesla led the race in 2020 by ramping up production to just under 500,000 full electric vehicles by the year's end.<sup>7</sup>

However, if the automotive industry is to truly maximize value to society and the environment, it needs to adopt circular economy practices—or a so-called “circular car” approach.

### **What's next**

A circular car approach means the efficient use of resources and public goods and measuring success in terms of the ability to provide mobility and reduce carbon emissions and non-circular resource consumption.<sup>8</sup>

This starts from an organization's business model and extends across car production through distribution to miles driven. Achieving circularity is not a one-time effort, however. Instead, it'll require collaboration across the automotive ecosystem over the years and decades ahead.<sup>9</sup>

This will be a major priority for OEMs in the coming years.

Because people like convenience and want greater sustainability, a significant opportunity lies in new sustainability solutions that are pragmatic enough to survive the flow of daily life.

Whatever the solution, it will need to match people's lifestyles.

The most effective strategies will involve exploring a variety of smart tools and options to adopt more sustainable life choices, progressively shifting toward more ethical and ecological options along the way, so that it fits seamlessly into people's everyday lives.





## Opportunities for reimagination

### 1. It's electric

EVs are a great start for the industry to become less of a catalyst for climate change, with research now proving that EVs reduce emissions.

For some years, it was suggested that emissions produced during EV manufacturing combined with the electricity needed to power the vehicles once on the road made EVs bigger polluters. But in 53 of 59 global regions—making up 95% of the world—EVs and electric household heat pumps produce fewer emissions and are better for the environment than fossil fuel alternatives, according to a recent study.<sup>10</sup>

OEMs are stepping up. Daimler is now working toward having an electric or hybrid version of each of its models by 2022. Volkswagen has pledged to achieve the same by 2030. General Motors, meanwhile, recently announced it will only sell zero-emission vehicles from 2035 on.<sup>11</sup>

Yet the batteries that power EVs have a way to go, which is why many brands are investing in research and development into battery manufacturing that can achieve truly clean energy solutions.

Chinese EV giant BYD and Japan-based Toyota, for example, are now partnering for EV battery R&D. Stellantis and Total/Saft have created joint venture Automotive Cells Company to do the same.<sup>13</sup>

In Germany, Opel has created a refurbishment center near its production plant for end-of-life batteries. This paves the way for second-life use by creating a charging point from used battery packs and by recycling spare parts to return to the first-life battery cycle.<sup>14</sup>

Such initiatives prove that investing in a cleaner power source positions the entire industry for success. They also help in setting standards beneficial to all regarding topics such as charging and payment regulations and grid integration, which is essential for ensuring sufficient infrastructure.





## 2. The circular economy

The automotive industry's philosophy on the value chain has already shifted fundamentally—from “take-make-waste” linear production and consumption models to “reduce, reuse, recycle.”<sup>15</sup> Yet though EVs are leading the charge, they alone cannot save the day.

With projections suggesting that EVs will account for 28% of all car sales by 2030, sustainable success will also depend on achieving a true circular economy.<sup>16</sup> This means leveraging circular economy strategies to transform products, as well as the way the products are used.

To move from sustainable ambition to reality, there are four main transformation pathways to increase circularity: energy decarbonization, material circularity, lifetime optimization and utilization improvement.<sup>17</sup>

“Renault has long been dedicated to making its business model more circular,” said Jean-Philippe Hermine, Renault's vice president, Strategic Environmental Planning.<sup>18</sup> “Extending vehicle lifetime, providing a second life for parts and recycling, as well as new innovations, will be at the core of these

activities. With the re-factory, we are also reaffirming our industrial footprint in France and are working with our unions to maintain the jobs that were originally dedicated to car manufacturing.”

Circular economy strategies have the potential to reduce carbon emissions per passenger kilometer by up to 75% and non-circular resource consumption by up to 80% by 2030, according to Accenture research.<sup>19</sup>

With cars increasingly bought online and flexibly subscribed to for shorter time periods, revenue streams are shifting toward the use phase, and the drive toward circularity is slowly picking up speed. Already, most automotive materials are recyclable. Meanwhile, more and more cars are being built to last and to be repaired.

These are all important aspects of circularity. But more work will be necessary to fundamentally reimagine the value chain to minimize lifetime carbon emissions and resource consumption.



### 3. Redefining luxury

Today, 88% of consumers look to brands to help them be more environmentally friendly in their daily lives.<sup>20</sup> Delivering on this is therefore quickly becoming essential for a brand's future success. But when it comes to cars, going green goes far beyond greening a car's power source.

Eco-conscious consumers expect to see change from the inside out. Considering that the materials and manufacturing burdens of a new vehicle can account for anywhere from 6% to 25% of its lifetime carbon footprint, both can have a material effect on sustainability.<sup>21</sup>

OEMs need to drive holistically sustainable solutions across the supply chain, and with their innovative use of more environment-friendly materials, luxury auto brands are leading the way.

Mercedes-Benz has incorporated a host of new materials. For example, Dinamica—a sueded fabric made from recycled plastic bottles and clothing fibers—is used for covering seats. On floorboards and dashboard trim Mercedes-Benz uses a

compressed timber product made from a sustainably harvested rattan called karuun.<sup>22</sup>

Volvo Car Group's EV sub-brand Polestar, which is exploring materials ranging from flax to recycled bottles and fishing nets, has a state-of-the-art manufacturing plant in Chengdu, China. The plant showcases every aspect of the brand's sustainability focus—from improved efficiencies in energy expended in its factories to the wellness of its employees.<sup>23</sup>

Using new materials can also increase the energy efficiency of vehicles by saving weight, which is becoming even more critical as battery technology matures. "Our material can cut the weight of interior panels by up to 50%," said Per Martensson, chief sales officer at Bcomp—the Swiss supplier of a flax-based composite Polestar is using.<sup>24</sup> "So, we reduce the plastic content drastically, and we increase the performance."



## What automotive leaders can do

### 1. Give innovation the backing it deserves

Innovation is a top priority. In fact, 71% of automotive executives believe that the stakes for innovation have never been higher.<sup>25</sup> So, it's imperative that multifaceted innovation is not only funded but incorporated into a brand's core operation.

Think beyond the hunk of metal that is the car to see how you can innovate within the production process: in the factory, along the supply chain, in your approach to partnerships—for example, collaborating with other organizations you might consider competitors.

As technology continues to evolve and new materials are uncovered, it's a smart move to invest in strengthening research partnerships with ecosystem partners and third-party organizations. Combining powers is key to unlocking new insights and know-how, as already seen in the race to better battery production for EVs. However, true success lies in agreeing upon a common framework for guiding and measuring progress toward

circularity. And this framework should raise industry ambition from merely doing less harm to building a truly sustainable global economy.

Remember, sustainability starts with design—not just product design, but also all the different design components that go into creating mobility solutions.

### 2. Walk the walk

It's essential that OEMs act, rather than simply pledge, to make the world better and that they're transparent about what they do.

Today's consumers—younger groups especially—want positive actions on sustainability from brands, not just words. In fact, 87% of Generation Z are worried for the environment and the planet, and 90% believe companies must drive action on social and environmental issues.<sup>26</sup>



For OEMs this means viewing everything they do through a sustainability lens. This should begin with the source materials OEMs use—questioning what they're made from, how they're produced, how long they'll last, if they're recyclable, or at least biodegradable, and so on—and extend to engaging with industry bodies and governments to find effective ways to enable EVs to be on the road.

Be transparent. For instance, develop strategies that enable increased data transparency and information sharing with other players along the automobility supply chain up to, and perhaps including, joint standards.<sup>27</sup>

### **3. Widen your horizons**

Sustainability doesn't just mean better for the environment—it's also better for the greater good. OEMs should, therefore, ensure sustainable mobility strategies that also address the need to benefit communities.

Partner with others to meet and then exceed people's growing sustainability expectations—like EV software companies Hubject and ev.energy did to simplify home and public EV charging.<sup>28</sup> Consider public-private partnerships. And partner with competitors for the greater good. The Drive Sustainability partnership, where the world's

ten biggest automakers are working to drive sustainability through the supply chain, is a great example of this.<sup>29</sup>

Car brands must go the extra mile in creating a more sustainable tomorrow. This could even mean investing in helping strengthen a city's infrastructure for charging or becoming more engaged in the design of smart cities.

Toyota, for example, recently rebranded itself as a mobility company with a focus on developing new technology to change the way people move.<sup>30</sup> Then in February 2021, it broke ground on the construction of Woven City—a prototype city of the future that's being built from scratch at the bottom of Mount Fuji in Japan.<sup>31</sup>

As well as being home to an initial 2,000 residents, Woven City will be a living laboratory where Toyota can test the latest smart technologies.



# 03

## **From lost time to prime time: Cars as an experience platform**

**Cars no longer just get us from point A to B. Today, they act as a charger or hot spot, an office, a place to relax, or even an entertainment venue. With cars now valued not just for convenience but also their safety (over public modes of mobility), the time is right to upscale ambitions for what the future in-car experience can and should be.**

### **What's going on**

Not so long ago, the car was simply how we got from one place (and experience) to another. The time spent riding in them was effectively wasted. However, this has been totally upturned by technology, especially connectivity.

Today's vehicles are becoming an extension of our homes. Increasingly, cars are seen as another valued member of our digital device family—much like an Alexa or iRobot vacuum cleaner—they're a way for us to connect with our lives at home even while we're away.



**Automotive - From lost time to prime time:  
Cars as an experience platform**

BMW has been leading the way for years with BMW ConnectedDrive.<sup>1</sup> This digital, connected “drive-o-tainment” and services suite allows the user to control in-car comfort, entertainment and security, and also manage multiple facets of their daily life—from configuring at-home devices to booking services—all while on the road.

Subsequently, BMW brought on board key strategic partners to expand ConnectedDrive’s connected services and experience ecosystem. Particularly notable is its integration into Tmall Genie, the first smart voice assistant developed by China’s Alibaba AI Labs.<sup>2</sup>

General Motors’ GM Marketplace, the industry’s first in-car commerce platform, is the next step in brand experiences for customers. It connects users with the brands they love, providing offers and discounts, loyalty programs, restaurant reservations, parking spot bookings and a curbside concierge for retail pickup and orders to go.<sup>3</sup>

Meanwhile, in the U.S., Fiat Chrysler Automotive has introduced Uconnect Market, a commerce platform that facilitates services like ordering food conveniently, finding the nearest gas station, or making dinner reservations using the vehicle

touchscreen. The car’s dashboard goes way beyond providing car information—rather, it’s a concierge that helps drivers navigate everyday life.<sup>4</sup>

Much like our phones, car dashboards now go far beyond their initial use. And when connected with mobile devices that help us control our lives at home—such as Alexa or Nest—the ability to incorporate a home’s functionality into a car’s functionality promises a whole new world to explore from behind the wheel.

Benefits to the user range from optimizing errands with shopping and pick-up functionalities to feeling confident in conducting meetings on the go, knowing you can check on home from miles away. And people’s appetites for this in-car functionality are growing.

In the long term, cars will offer the biggest opportunity for 5G Internet of Things and, by 2023, the automotive industry will become the largest market for 5G IoT solutions, Gartner predicts.<sup>5</sup>

**What’s next**

While varying degrees of connected vehicles currently cruise the roads, forecasts suggest an installed base of 700 million units of connected vehicles by 2030, with all new cars being connected from 2020 and beyond.<sup>6</sup>

Historically, connectivity and integrated flexible software platforms limited adoption.

With the advent of 5G, Android-based car platforms and Apple Play integration, for example, automotive industry original equipment manufacturers (OEMs) will develop new ways vehicles can increase productivity and build value over and above their transportation capability.

All of this creates the ideal environment for the automotive industry to reimagine the in-car experience and upscale ambitions for what its future can and should be.



## Opportunities for reimagination

# 1. Car as extended living space

Before the pandemic, consumers were spending more time at home.<sup>7</sup> Then, as we were forced to engage with more of the external world from inside our personal spaces, this shift was further accelerated in 2020 by COVID-19.

Today, the home is the place where most of our experiences in work, health and play reside—not just for now, but for the foreseeable future. Some 43% of people who had never worked from home pre-COVID now say their preferred working pattern post-pandemic would involve working from home at least once a week, our own research shows.<sup>8</sup>

Among employers, there are now indications that many businesses may never go back to traditional ways of working. Unilever<sup>9</sup> and Nationwide<sup>10</sup> are among those to have recently confirmed plans to change post-pandemic working patterns.

Our spending more time at home has given our cars the chance to shine as an additional

space. In fact, just as the home's role in an array of our daily activities has grown, so too will we see the car's role extended. One-fifth of British motorists used their cars as a spare room over the first half of 2020, according to a Skoda study.<sup>11</sup> Alternative uses ranged from catching up on work to watching TV, taking a nap or creating a play space for kids.

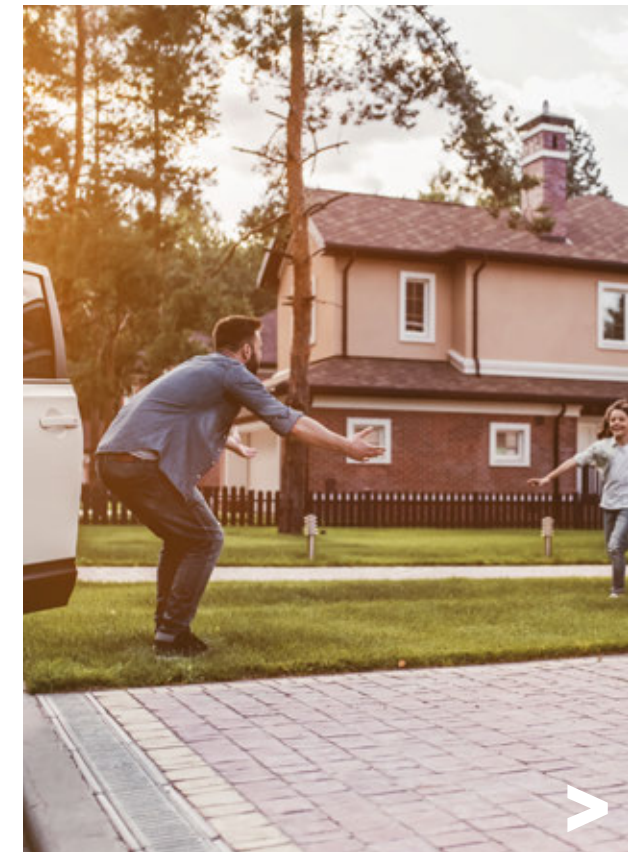
Airo, a concept car from London-based Heatherwick Studio for a Chinese-built green car, includes flexible interior features easily reconfigured to suit different needs. These include a dining table and swivel chairs and reclining seats that can convert to a double bed.<sup>12</sup>

Voice-activated services—increasingly used in a growing number of homes via smart speakers like Echo and Alexa—and the potential to integrate them more deeply across home and car are important parts of this opportunity.

Mercedes-Benz's bespoke in-car voice technology system, Mercedes-Benz User Experience (MBUX), is one of the most intelligent voice assistants on the road.<sup>13</sup> MBUX is a concierge in the dashboard that caters to a wide range of driver and passenger needs. By leveraging a variety of biometric technologies, it also provides a new level of personalization and security that are quickly accessed using voice.

Opportunities will also arise from OEMs partnering with third parties that are already doing voice-activated services well in other sectors. The key will be not building bespoke, siloed gardens that might limit future options while broadening the array of aspects of daily life their customers can control from inside their car.

The question for OEMs, then, is: What new products, services and experiences can they create around the car's new role as extended living space?







## 2. It's game time

Many have talked of the potential for a new world of in-car entertainment once autonomous cars become an everyday reality and drivers become passengers with extra time on their hands.

But why wait? The in-car entertainment experience is already ripe for reimaging. There's plenty of scope to create more immersive experiences for passengers, which is what Holoride is now doing.

Holoride's mission is to turn vehicles into moving theme parks.<sup>14</sup> By combining real-time vehicle data with XR, it offers a dynamic backseat experience that matches every movement of the car to turn each ride into a thrill. By harnessing the data and idleness at hand to create experiences ranging from gaming to educational tours, it's transforming dead time into time well spent.

## 3. Safe and sound

For years, in-car safety has been about airbags, crumple zones and driver assistance systems. Then customers' health and safety concerns changed as a result of the pandemic.

Today, physical safety features remain just as important. But we're now more likely to see our cars as safety bubbles that can protect us from an invisible virus more effectively than shared public transportation, for example.

Chinese automaker Geely Auto, whose parent company owns high-end brands Volvo Cars and Lotus, announced in February 2020 that in response to the coronavirus, its forthcoming Icon electric SUV would feature an N95-certified air purification system that could "isolate and eliminate harmful elements in the cabin air," including viruses.<sup>15</sup>

But what about beyond the pandemic? How could OEMs evolve health and safety within the car further and make it more enjoyable? Smarter cars mean smoother rides and the promise of relief from motion sickness. In fact, advanced driver assistance vehicles showed a 27% reduction in bodily injury claim frequency and a 19% reduction in property damage frequency, according to a report from LexisNexis Risk Solutions.<sup>16</sup>



## What automotive leaders can do next

### 1. Empower autonomy

Autonomous vehicles will create many opportunities to connect to adjacent areas like wellness, entertainment, and beyond. To prepare, OEMs need to actively experiment in these spaces and start understanding consumer needs in a much wider context than just getting from point A to B. And they need to partner up across industries to make it happen—following the example set by the likes of Waymo or Cruise for their development of self-driving cars.<sup>17</sup> Toyota's e-Palette self-driving vehicle was developed with partners like Amazon and Uber.<sup>18</sup>

In the future, mobility needs to reach beyond automotive partnerships: Think big. Imagine restaurants sending a car to pick you up for a truly door-to-door experience, dealers sending cars to your door for a test drive and many more multilayered experiences.

### 2. Remember: 1 + 1 > 2

From fleets to app development and beyond, the key to future industry success lies in OEMs' ability to form partnerships that supersede their past collaboration efforts. In a complex system of emerging tech, it's only logical that companies look to third-party collaborators. While the past was about secrecy, the trend toward multiparty systems provides a shared data infrastructure to enhance trust, transparency and collaboration—even among competitors.<sup>19</sup>

The benefits of sharing data extend beyond outcomes and efficiencies. Sharing data also contributes to a more connected society and, in the case of advanced driver-assistance systems (ADAS), safer and more satisfied consumers.

### 3. Think big, act bigger

It's time to think bigger than the sale of a single car as a main objective.

Nearly half of all drivers in a multicountry survey of 7,000 consumers said they would consider giving up vehicle ownership in favor of autonomous mobility.<sup>20</sup>

OEMs need to fully commit to embracing alternatives to the ownership model. The power of thinking big and acting bigger



is neatly demonstrated by Turo, which is capitalizing on rental car companies slashing their fleets during the pandemic with its app that enables private car owners to rent out their private vehicles.<sup>21</sup>

To keep customers in the future of autonomous mobility, experimenting and dabbling in ideas now isn't enough. OEMs need to start positioning mobility services as a valid alternative to car ownership.



# 04

## **Software-defined vehicles: From predictive personalization to individualized interaction**

**As OEMs shift their business model from product-focused to software services, business is no longer “as usual.” Software-defined vehicles not only require new production approaches and ways of working, but also a paradigm shift in how drivers and passengers experience vehicles and what they can do above and beyond transportation.**

### **What’s going on**

The automotive industry has pivoted from hardware creation to software optimization. Not so long ago, the car was a feat of mechanical engineering. Today, it’s a connected machine that has a lot in common with a consumer electronics device.<sup>1</sup>

Car buyers no longer base their purchasing decisions on horsepower and unique seat innovations. Instead, in-car technologies have become a primary consideration for consumers when buying a car, an Accenture survey on connected vehicle solutions shows.<sup>2</sup>



**Automotive - Software-defined vehicles:  
From predictive personalization  
to individualized interaction**

Digital services are what matter. Some 59% of buyers consider a car's connectivity in their purchasing decisions—a huge opportunity for the connected car industry.<sup>3</sup>

Empathetic car interiors are already a reality. Such interiors respond to an individual's in-car experience and preferences using an array of sensors to pick up nonverbal as well as verbal cues. But they don't just enable an enhanced in-car experience today; they also pave the way for far greater personalization in the near future.

New technologies have driven OEMs to rethink the way they design, manufacture and distribute cars from the ground up, across both the supply chain and the customer journey. They have increased the availability and value of data, fueling the evolution of a new generation of more tailored and responsive propositions and services.

Meanwhile, the ability to update your car over the air (OTA) is driving software-centric OEMs such as Tesla—an early adopter of the capacity to push OTA software updates to its vehicles, which it first did in 2012—to the top.<sup>4</sup>

In China, now the world's largest car market, Shanghai Automotive Industry Corporate and Alibaba have a strategic alliance to jointly manufacture cars with an internet connection. Both Dongfeng and Changan automobile manufacturers, meanwhile, have technological agreements with Huawei Technological Co. Ltd.<sup>5</sup>

In short, the industry has undergone a fundamental shift, creating a desire for new business models and new driving experiences based not on buying and selling a car, but on mobility services. Never has it been more critical for OEMs to optimize their digital capabilities and plan for new connected automotive experiences and the smart mobility services that lie ahead.



## What's next

The automotive software market is set for significant further growth.

Globally, the connected car market is expected to reach just under 353 million units by 2023—a threefold increase in just five years—with China already the fastest-growing market, and Europe expected to be the largest.<sup>6</sup>

By 2025, in-car integrated marketplace apps will account for \$17.3 billion of vehicle-related purchases and personal consumer spending by 2025, one estimate suggests.<sup>7</sup>

In the U.S. alone, where 135 million workers pre-pandemic spent 51 minutes on average in their cars for their daily commutes, commuter commerce (transactions conducted in-car while on the go) is calculated as a \$230 billion opportunity.<sup>8</sup>

By 2025, the global automotive software market will be worth \$56 billion—up from \$19 billion in 2019, at a CAGR of 19.7%, according to one estimate.<sup>9</sup>

In the new race to OEM digitization, the stakes are high, however. OEMs face a variety of challenges. These

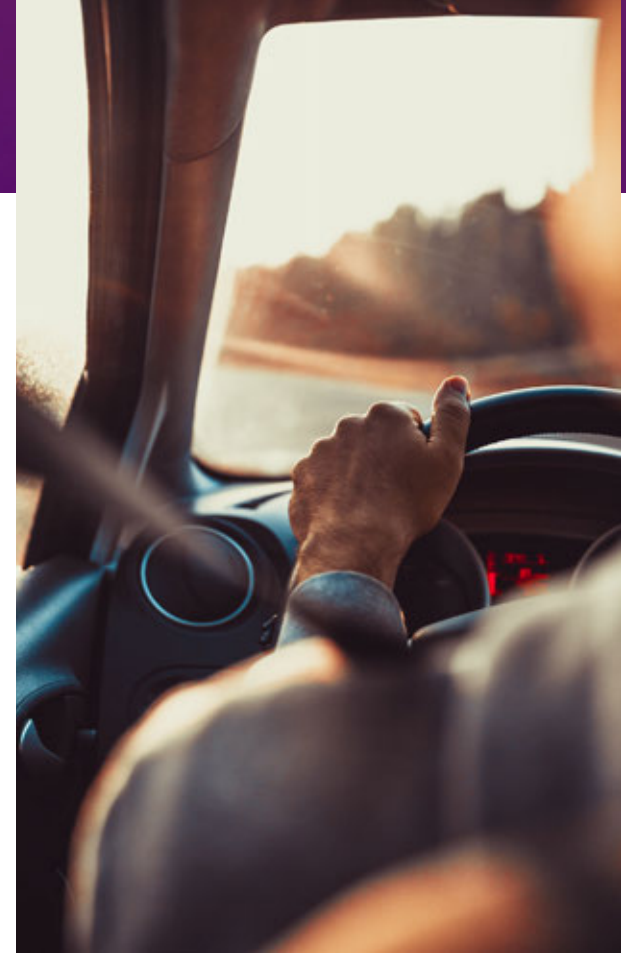
include the stringent regulatory and policy requirements they must meet while applying cutting-edge technologies and competition from emerging enterprises. Further, they must confront the fact that digitization is about more than reinvention.

As their ability to keep pace with change will be critical for their survival, OEMs must adapt accordingly—upgrading current architectures to support the artificial intelligence software that will be needed for autonomous vehicles, for example, which will make traveling by car safer and more efficient.<sup>10</sup>

Standardized platforms for smart mobility services will be defined, paving the way for a reimagination of automotive experiences. Internet of Things (IoT) capabilities will advance, which will enable data to be transmitted securely across more complex ecosystems of interconnected devices.

The future of mobility promises a driving experience that is automated, seamless, personalized and on-demand.





## Opportunities for reimagination

# 1. Growing demands for personalized experience

In a world of liquid expectations, the success of today's brands—irrespective of their industry—is dictated by the adaptive personalized experiences they provide. And OEMs are no exception.

When reimaging the automotive experience, two particular areas worth exploring stand out.

The first is OTAs and where they might take you.

Today's standard cars have approximately 100 million lines of code—up to 1 billion for autonomous vehicles.<sup>11</sup> Yet, when it comes to OEMs using software for updating and enhancing the customer experience, development is embryonic.

Tesla aside, too many OEMs are content with OTAs that are, at best, superficial—mainly only experienced by the customer as an onscreen update. But what if an OEM leveraged some of its cars' built-in features more wisely?

Consider heated seats. Beyond making them adjustable to an individual's temperature preference, what if an OEM better leveraged that customer's data to remind them of the feature if left unused, tailor it according to needs or location, and even package it as part of a premium in-car personalized environment proposition?

Transferable personalization is a second area worthy of closer consideration.

With vehicles increasingly defined by their software and operating systems becoming common in cars, there's an opportunity to reimagine how software can be used to create a consistent set of personalized experiences. These could be centered around the driver or passenger, with each individual able to migrate their profile from vehicle to vehicle.

With advances in machine learning, this profile could learn and adapt to users' needs. By saving core preferences (e.g., temperature, seat posture, button size),

it could learn which are most used, then prioritize the display for easy access through an adaptive menu. The ability to transfer on-demand preferences and functions from one vehicle to another creates opportunity for a host of new customer propositions—for example, a subscription for fast Wi-Fi in all your Uber rides for a month.

In this way, OEMs can redefine their core value propositions to align with where other consumer industries have already migrated.





## 2. The OTA mindset

For decades, car features were updated with each model. Now, vehicles receive OTA updates, with features added bimonthly. This keeps customers satisfied and the competition on its toes. Therefore, a speedy and agile response are essential if OEMs want to keep up—and lead—in tomorrow's automotive marketplace.

OEMs will need to embrace and foster agile working environments, data-driven decision-making and the rapid speed at which business will increasingly be done. To make these updates and iterations possible, companies need to prioritize digital reinvention and operate more like start-ups, with agility and innovation at the heart of their operations.

Volkswagen has established CARIAD, which employs about 5,000 people and develops the VW.OS automotive operating system, to develop common software for all brands and markets to prepare for the future.<sup>12</sup>

VW plans to invest €7 billion in this organization by 2025—money that will be spent on activities such as its VW.OS automotive operating system, connecting with VW's automotive cloud, consolidating

technological platform solutions for data-driven business models and group innovation. It expects to increase its in-house software development up to 60% by 2025; the proportion today is less than 10%.<sup>13</sup>

Daimler has committed more than €70 billion (est. \$85 billion) to digitization and electrification.<sup>14</sup> It plans to cut out traditional parts makers in order to fund a software development push that will involve hiring thousands of coders to build an operating system that rivals that of Tesla. It has also brought key strategic partners such as Nvidia onboard to expand its software ecosystem over the last couple of years.<sup>15</sup>

An OTA mindset is about approaching agile as a way of life, which is essential if an OEM is to achieve the organizational—and cultural—transformation it will need for future success.



## What automotive leaders can do next

### 1. Identify which strengths to play to

By 2030, 30% of an OEM's revenues will come from services, so identifying the right services to develop and appropriately resourcing their development is key.<sup>16</sup>

Consider which areas or domains of your vehicle's operating system you want to control or monetize. Speech control, for example, or account log-ins, customer data, etc. Choose which to prioritize and which to relinquish.

Then, tool up.

Speed up the transformation to digitization and electrification. Become an ambidextrous organization that's more agile and reactive to changing customer expectations.<sup>17</sup> Focus your talent strategy to attract the best data/computer scientists to meet these new priorities. Invest in new skills. Restructure for more collaboration.<sup>18</sup>

Select the right partners, too.

Rather than compete internally for limited budget against internal bureaucracies, it

can be faster and more effective to adopt new technology from dedicated, focused and agile external teams. OEMs can rapidly access new technologies—often at a lower cost than if they'd developed the technology in-house or commissioned it from their traditional supply chain partners.

### 2. Optimize for partnership

OEMs will not be able to succeed in the future alone. They'll need partners.

This may mean striking partnerships with organizations they see as competitors, such as other OEMs or big tech. But they need to push themselves to do so even if it feels uncomfortable. And they have to tackle the thorny issue of revenue sharing with partners head on, and how best to do it.

Choose your platform partner(s) wisely. Automakers will rarely be able to become software-driven alone. AWS, Google, Microsoft, Tencent and Baidu are just some of the main platform providers looking to occupy this space. When selecting a software platform, it's important to determine which one offers the most versatility and security in the region in which you plan to operate.

At the same time, work toward becoming the owner of all your customer touchpoints,

rather than ceding control to big tech. Gain access to previously inaccessible customer insights and transactional data.<sup>19</sup>

To turn that data into valuable market insights for economic growth, create new functions and an operating model that enables data analysis and a data-driven decision-making process—around pricing, for example, or production volumes and stock configuration planning.<sup>20</sup>

### 3. Rethink vehicle and vehicle function development cycles

With the development of EVs, which have very few moving parts, the physical engineering of cars is becoming simpler—at a time when automobiles' software is growing ever more important and complex.<sup>21</sup>

With software and electronics becoming more crucial differentiators than hardware, decouple vehicle and vehicle function development cycles.

To eliminate the "dilemma of smart things"—the need for constant upgrades caused by the constant innovation required to keep pace with constant technological advances—work to enable software and hardware updatability and upgradability.<sup>22</sup>





The new sales experience

## Authors

---



**Axel Schmidt**

Senior Managing Director  
– Strategy & Consulting, Global  
Lead, Automotive



**Joel Van Durme**

Managing Director – Interactive



**Ankur Mathur**

Managing Director – Interactive

Change for good:  
The road to zero emissions

## Authors

---



**Axel Schmidt**

Senior Managing Director  
– Strategy & Consulting, Global  
Lead, Automotive



**Joel Van Durme**

Managing Director – Interactive



**Kristina Bonitz**

Managing Director  
– SinnerSchrader, a part of  
Accenture Interactive



**Tobias Kruse**

Managing Director – Fjord,  
a part of Accenture Interactive



**Anna Allen**

Creative Strategist  
– SinnerSchrader, a part of  
Accenture Interactive

From lost time to prime time:  
Cars as an experience platform

## Authors

---



**Axel Schmidt**

Senior Managing Director  
– Strategy & Consulting, Global  
Lead, Automotive



**Joel Van Durme**

Managing Director – Interactive



**Kristina Bonitz**

Managing Director  
– SinnerSchrader, a part of  
Accenture Interactive



**Tobias Kruse**

Managing Director – Fjord,  
a part of Accenture Interactive



**Anna Allen**

Creative Strategist  
– SinnerSchrader, a part of  
Accenture Interactive



**Automotive - Software-defined vehicles:  
From predictive personalization  
to individualized interaction**

# Authors



**Axel Schmidt**

Senior Managing Director  
– Strategy & Consulting, Global  
Lead, Automotive



**Joel Van Durme**

Managing Director – Interactive



**Gabriel Seiberth**

Managing Director  
– Strategy & Consulting



**Kristina Bonitz**

Managing Director  
– SinnerSchrader, a part of  
Accenture Interactive



**Tobias Kruse**

Managing Director – Fjord,  
a part of Accenture Interactive



**Anna Allen**

Creative Strategist  
– SinnerSchrader, a part of  
Accenture Interactive

## About Accenture

Accenture is a global professional services company with leading capabilities in digital, cloud and security. Combining unmatched experience and specialized skills across more than 40 industries, we offer Strategy and Consulting, Interactive, Technology and Operations services — all powered by the world's largest network of Advanced Technology and Intelligent Operations centers. Our 537,000 people deliver on the promise of technology and human ingenuity every day, serving clients in more than 120 countries. We embrace the power of change to create value and shared success for our clients, people, shareholders, partners and communities. Visit us at [www.accenture.com](http://www.accenture.com).

## Accenture Interactive

Accenture Interactive helps the world's leading brands transform their customer experiences across the entire customer journey. Through our connected offerings in design, marketing, content and commerce, we create new ways to win in today's experience-led economy. Accenture Interactive was ranked the world's largest and fastest-growing digital agency in the latest Ad Age Agency Report. To learn more follow us @accentureACTIVE and visit [www.accenture.com/interactive](http://www.accenture.com/interactive).

This content is provided for general information purposes and is not intended to be used in place of consultation with our professional advisors.

This document refers to marks owned by third parties. All such third-party marks are the property of their respective owners. No sponsorship, endorsement or approval of this content by the owners of such marks is intended, expressed or implied.

Copyright © 2021, Accenture. All rights reserved. Accenture and its logo are registered trademarks of Accenture.

Images from ©AdobeStock

## Introduction References

- 1 Impact On The Automotive Industry: Navigating The Human And Business Impact of COVID-19 (Accenture, April 2020, [Link](#))
- 2 How Lockdowns Affected The Automotive Industry (carmoney.co.uk, [Link](#))
- 3 Lowest UK February New Car Sales Since 1959 (Reuters, March 4, 2021, [Link](#))
- 4 Japanese Carmakers Plan To Put 20,000 On Temporary Leave With Partial Pay To Deal With Virus (The Japan Times, April 9, 2020, [Link](#))
- 5 McKinsey & Co: Reimagining The Car Industry's future (Automotive World, October 27, 2020, [Link](#))
- 6 Brand Relevance Rules in Consumers Goods & Services, (Accenture, 2020, [Link](#))
- 7 Global Passenger Car Market Report 2021: COVID-19 Impact and Recovery to 2030 for Major Players Such as Volkswagen, Toyota, General Motors, Renault-Nissan and Hyundai-Kia - ResearchAndMarkets.com (BusinessWire.com, February 26, 2021, [Link](#))

## The new sales experience References:

- 1 COVID-19 pandemic: Accelerating digitalization in sales and after-sales: Executive Update on 'Best Customer Experience 4.0' (Daimler, July 2020 [Link](#))
- 2 The Future Of Automotive Sales (Accenture, February 24, 2021, [Link](#))
- 3 The Future Of Automotive Sales (Accenture, February 24, 2021, [Link](#))
- 4 China's Shift To Online Sales (Volkswagenag.com, May 12, 2020, [Link](#))
- 5 Mercedes-Benz India Launches Merc From Home Digital Retail Campaign (AutoCar Professional, April 27, 2020, [Link](#))
- 6 The Future Of Automotive Sales (Accenture, February 24, 2021, [Link](#))
- 7 2019 Car Buyer Journey Study (Cox Automotive, June 4, 2019, [Link](#))
- 8 The Future of Automotive Sales In China (Accenture, February 18, 2021, [Link](#))



- 9 Reimagining The Automotive Consumer Experience (Cox Automotive, February 21, 2020, [Link](#))
- 10 Global Sales of Electric Vehicles/Cars to Grow at 22% Market CAGR Share to Reach USD 700 Billion By 2026: Facts & Factors (Intrado, March 2, 2021, [Link](#))
- 11 The Future of Automotive Sales In China (Accenture, February 18, 2021, [Link](#))
- 12 The Future Of Automotive Sales (Accenture, February 24, 2021, [Link](#))
- 13 Cox Automotive Study Finds Car Buying Process Improved During COVID-19 Pandemic (Cision PR Newswire, February 23, 2021, [Link](#))
- 14 FCA Group Connects Dealers With Buyers Using Online Video Chat (Automotive Management Online, April 27, 2020, [Link](#))
- 15 Tesla Replaces Humans With Technology In New Touchless, Humanless Test Drives (clenatechnica.com, September 16, 2020, [Link](#))
- 16 Renault India Initiates Mobile Showroom (AutoX.com, May 23, 2017, [Link](#))
- 17 Buy A Used Car Online And Pick It Up At This 8-story Vending Machine (Mashable, March 29, 2018, [Link](#))
- 18 Mercedes-Benz's New MBUX In-car Assistant And Smart UI Rocks (TechCrunch, January 12, 2018, [Link](#))
- 19 Coronavirus and car buying: Every automaker offering home delivery (Roadshow by CNET, April 7, 2020, [Link](#))
- 20 A Much Needed Alignment For Dealers And OEMS (Auto Dealer Today, [Link](#))
- 21 BMW: Using Data To Transform Attitudes And Evolve Experiences (Adobe, [Link](#))
- 22 NIOs Affluent Fanbase Might Save It From Failure, (TechNode, January 14, 2020, [Link](#))
- 23 Livestreaming Ecommerce Is The Rage In China. Is The US Next? (Forbes, December 10, 2020, [Link](#))
- 24 The Future of Automotive Sales In China (Accenture, February 18, 2021, [Link](#))
- 25 Otonomo Raises \$46 million To Expand Its Automotive Data Marketplace (TechCrunch, May 2, 2020, [Link](#))
- 26 Otonomo Raises \$46 million To Expand Its Automotive Data Marketplace (TechCrunch, May 2, 2020, [Link](#))

- 27 CarDr.com ([Link](#))
- 28 Carfax ([Link](#))
- 29 After The Quarantines We May All Buy And Sell Cars The Carvana Way (Forbes, April 27, 2020, [Link](#))

**Change for good: The road to zero emissions References:**

- 1 Impact of Sustainability on Purchase Decision Worldwide in 2017, By Product Category (Statista Research Department, Nov 27, 2020, [Link](#))
- 2 Norway's Plans to Raise Carbon Tax Draw Oil Industry Ire (Reuters, January 8, 2021, [Link](#))
- 3 Sustainable Transport on Track to Overtake Cars by 2030 in the World's Largest Cities (Kantar, February 10, 2020, [Link](#))
- 4 Electric Vehicle Outlook 2020 (Bloomberg NEF, [Link](#))
- 5 Ford Plans \$11bn Investment, 40 Electrified Vehicles by 2022 (Reuters, January 14, 2018, [Link](#))
- 6 BMW Aims to Double Fully Electric Vehicle Sales in 2021 (Reuters, January 15, 2021, [Link](#))
- 7 Tesla Delivers Nearly 500,000 Vehicles in 2020 (TechCrunch, January 2, 2021, [Link](#))
- 8 Raising Ambitions: A New Roadmap for the Automotive Circular Economy (Accenture Strategy/World Economic Forum, December 2020, [Link](#))
- 9 Raising Ambitions: A New Roadmap for the Automotive Circular Economy (Accenture Strategy/World Economic Forum, December 2020, [Link](#))
- 10 EVs Reduce Emissions Study Finds (RoyalAuto, May 12, 2020, [Link](#))
- 11 GM Will Sell Zero-emission Vehicles by 2035 (New York Times, January 28, 2021, [Link](#))
- 12 BYD, Toyota Charged for Cooperation in New Energy JV (ChinaDaily.com, April 13, 2020, [Link](#))
- 13 Groupe PSA and Total Create Automotive Cells Company, a JV Dedicated to the Manufacture of Batteries in Europe (Total, September 3, 2020, [Link](#))
- 14 The Case for a Circular Economy in Electric Vehicle Batteries (Boston Consulting Group, September 14, 2020, [Link](#))

- 15 From 'Take-Make-Waste' to Sustainable Systems (Accenture, March 7, 2019, [Link](#))
- 16 Electric Vehicles: Setting a Course for 2030 (Deloitte, July 28, 2020, [Link](#))
- 17 Raising Ambitions: A new roadmap for the automotive circular economy (World Economic Forum, January 14, 2021, [Link](#))
- 18 Renault, Volvo, PSA, Daimler, BMW and Volkswagen Have Already Set Ambitious Targets Towards Carbon Neutrality (Publishing.GR, January 18, 2021, [Link](#))
- 19 A New Roadmap for the Automotive Circular Economy (Accenture, March 1, 2021, [Link](#))
- 20 88% of Consumers Want You to Help Them Make a Difference (Forbes, November 21, 2018, [Link](#))
- 21 Luxury Cars Go Sustainable from the Inside Out (New York Times, June 4, 2020, [Link](#))
- 22 Luxury Cars Go Sustainable from the Inside Out (New York Times, June 4, 2020, [Link](#))
- 23 Polestar Celebrates Opening of New Assembly Plant in Chengdu China (Cnet.com, August 26, 2019, [Link](#))
- 24 Luxury Cars Go Sustainable from the Inside Out (New York Times, June 4, 2020, [Link](#))
- 25 Driving Toward a Post-digital Future (Accenture, November 3, 2020, [Link](#))
- 26 2019 Porter Novelli/Cone Gen Z Purpose Study ([Link](#))
- 27 Raising Ambitions: A New Roadmap for the Automotive Circular Economy (Accenture Strategy/World Economic Forum, December 2020, [Link](#))
- 28 Hubei and ev.energy Announce Partnership to Simplify EV Charging (current-news.co.uk, March 2021, [Link](#))
- 29 Toyota, BMW, Daimler Join Forces to Drive Sustainability in the Auto industry (SustainableBrands.com, 2017, [Link](#))
- 30 Can Toyota Turn Its Utopian Ideal into a Real City? (Bloomberg, January 24, 2020, [Link](#))
- 31 Toyota Breaks Ground for Woven City (Toyota, February 23, 2021, [Link](#))



**From lost time to prime time: Cars as an experience platform  
References:**

- 1 BMW ConnectedDrive ([Link](#))
- 2 BMW China Integrates BMW Connected Into Tmall Genie (BMW Group, April 25, 2018, [Link](#))
- 3 GM Launches Marketplace For In-car Shopping And Reservations (TechCrunch, December 5, 2017, [Link](#))
- 4 FCA To Launch New In-vehicle Unconnect Market Commerce Platform (FCA, June 24, 2019, [Link](#))
- 5 Gartner Predicts Outdoor Surveillance Cameras Will Be Largest Market for 5G Internet of Things Solutions Over Next Three Years (Gartner, October 17, 2019, [Link](#))
- 6 Connected And Autonomous Cars Have Arrived, And They Are Forcing Car Companies To Build New Vehicle Architectures (Forbes, November 11, 2019, [Link](#))
- 7 The Big Home Reboot Has Started (IKEA, October 16, 2020 [Link](#))
- 8 Technology Vision 2021 (Accenture, January 2021, [Link](#))
- 9 Unilever Workers Will Never Return To Desk Full-time (The Guardian, January 13, 2021, [Link](#))
- 10 Nationwide Says 13,000 Staff Can Work From Home Even After the Pandemic (Yahoo Finance, March 25, 2021, [Link](#))
- 11 Skoda Auto In 2020 (Skoda, May 7, 2020 [Link](#))
- 12 New Electric Car Hoovers Up Pollution From Other Vehicles (The Times, April 26 2021, [Link](#))
- 13 World Premier Of The MBUX At CES (Mercedes-Benz, January 2018, [Link](#))
- 14 Holoride ([Link](#))
- 15 Geely Auto Newest Icon Released, (Global Media Center, February 24, 2020, [Link](#))
- 16 LexisNexis Risk Solutions Launches Vehicle Build Product to Offer U.S. Insurers Much Needed ADAS Details for Better Premium Evaluation and Pricing Segmentation (LexisNexis, June 18, 2020, [Link](#))

- 17 Self-driving Tech Is Becoming A Game Of Partnerships (Wired, July 7, 2020, [Link](#))
- 18 The Unlikely Partnerships That Are Shaping The Car Industry (Financial Times, January 18, 2020, [Link](#))
- 19 Here Are The Keys To Driving Epic Change In The Auto Industry (Accenture, September 14, 2020, [Link](#))
- 20 Nearly Half of Drivers in Multi-Country Survey Indicate Willingness to Give Up Car Ownership in the Future in Favor of Autonomous Mobility Solutions, Accenture Report Finds (Accenture, October 10, 2019, [Link](#))
- 21 Rental Car Shortage Is A Boon For Turo – The Airbnb Of Cars (CNN.com, March 29, 2021, [Link](#))

**Software-defined vehicles: From predictive personalization to individualized interaction References:**

- 1 The Reimagining Automotive Report (PSFK with Microsoft, [Link](#))
- 2 Reach Out And Touch The Future: Connected Vehicle Solutions In China (Accenture, November 2014, [Link](#))
- 3 OEMs and connected-cars: time to seize the connected future (Bearing Point, September 2015, [Link](#))
- 4 Tesla Can Change So Much With Over-the-air Updates That It's Messing With Some Owners' Heads (The Verge, June 2, 2018, [Link](#))
- 5 Reach Out And Touch The Future: Connected Vehicle Solutions In China (Accenture, November 2014, [Link](#))
- 6 Breakdown Of The Global Connected Car Fleet 201-2023 (Statista, August 21, 2020, [Link](#))
- 7 Global In-Car Marketplace, Forecast to 2025 – Approx \$17.3 Billion of Vehicle-related Purchases & Personal Consumer Spending Will Be Allocated to Cars Through Integrated Marketplace Applications by 2025 (PR Newswire, January 7, 2020, [Link](#))
- 8 Commuter Commerce Represents \$230 Billion Opportunity (Retail Dive, January 10, 2019, [Link](#))
- 9 Automotive Software Market Research Report by Vehicle, by Product, by Application - Global Forecast to 2025 - Cumulative Impact of COVID-19 (ReportLinker, January 2020, [Link](#))
- 10 The Future Of Automotive Is Software-defined (Springer, December 4, 2020, [Link](#))

- 11 How Much Code? Cars (Code Institute, [Link](#))
- 12 Volkswagen Plans To Challenge Google With Own Autonomous Car Software (Reuters, February 2, 2021, [Link](#))
- 13 Markus Duesmann leads Car.Software Organisation at Volkswagen Group (Cariad Technology, July 15, 2020 [Link](#))
- 14 Daimler Commits \$85 Billion To Electrification And Digitalization (AmericanMachinist.com, December 7, 2020, [Link](#))
- 15 Daimler And Nvidia Team Up To Close Tech Gap With Tesla (Reuters, June 24, 2020, [Link](#))
- 16 The Future Of Automotive Sales (Accenture, February 24, 2021, [Link](#))
- 17 Rethink. Reinvent. Realize: How To Successfully Scale Digital Innovation To Drive Growth – Automotive OEM (Accenture, 2019, [Link](#))
- 18 Knowing The Risks: Relationships Between Startups & Auto Sector (EET Asia, December 25, 2020, [Link](#))
- 19 The Future Of Automotive Sales (Accenture, February 24, 2021, [Link](#))
- 20 Rethink. Reinvent. Realize: How To Successfully Scale Digital Innovation To Drive Growth – Automotive OEM (Accenture, 2019, [Link](#))
- 21 MachinePix Weekly #36: Milo Werner, former Head of New Product Introduction, Tesla (MachinePix Weekly, March 23, 2021, [Link](#))
- 22 Designing Smart, 'Unfinished Products' Opens New Career Paths (Accenture, February 26, 2020, [Link](#))

