

The car as a platform



AI Business
eBook Series



How technology-based services are transforming the way we build, sell, and drive cars

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Going digital



The automotive industry is in a state of flux. Advances in technology are changing the way vehicles are developed, produced, marketed and sold, with consumer expectations rising accordingly. While cars still play the traditional role of getting customers from A to B, and remain a signifier of lifestyle and status, they are transforming into sophisticated digital products where the software is as important as the hardware.

In this eBook, sponsored by translation and localization specialist Lionbridge, we take a deep dive into how this digital disruption is having a profound effect on every aspect of the industry. We cover all the key elements – from the manufacturing processes of one of the world’s largest auto makers to the way cars are presented and sold (both online and in showrooms) and, of course, to the vehicles themselves, which now offer features and services that were unthinkable only a few years ago.

As this revolution gathers pace, access to a wealth of information online has unquestionably made automotive customers savvier than ever before, and more demanding. As the industry gets ever more focused on digital opportunities, it is becoming clearer that the experience offered by brands both inside and outside the vehicle is a key differentiator, which can be enhanced by clear and effective communication, language and messaging.

We hope this guide will provide useful insight to the transformation of the auto industry – and the opportunities that affords both manufacturers and customers.

Graham Hope | Associate Editor | AI Business



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“A customer can have any color as long as it’s black,” was Henry Ford’s famous comment on the Model T in 1909. One of the most renowned motoring quotes of all time, it serves as a useful reminder that the choice available to the car customers of today is simply breathtaking in comparison. There are decisions to be made over what to buy, how to buy, where to buy, and even whether to buy or rent, and this has necessitated diversification on behalf of the car makers and the wider automotive industry.

Unquestionably the greatest change has been the acceleration towards electrification. The environmental damage done by conventional combustion engines has been acknowledged for a long time, but with concerns intensifying over the past few years, we have seen individual countries set ambitious deadlines for phasing out exclusively petrol- and diesel-powered vehicles.

This has had a dramatic effect on the market. New players concentrating on alternative powertrains – such as Tesla and Polestar – have grown in influence, while some of the industry’s largest names have had to dramatically reshape their product roadmaps with the addition of hybrids, plug-in hybrids, pure electric vehicles (or Evs), and even fuel cell models.

After some initial hesitancy from the public – based mainly around

concerns about cost, range, and charging infrastructure – the tide is turning, and fast. Although global sales of all cars fell dramatically last year to an estimated 63.8 million (pre-pandemic, this figure was expected to reach 80 million), the number of buyers choosing electric vehicles rose significantly, from 2.26 million in 2019 to 3.24 million in 2020.

The pandemic also focused the manufacturers’ attention on their online presence – the evidence suggests those who were early to embrace a digital strategy reaped the rewards in lockdown. A recent report by McKinsey highlighted one US company which recorded a 10 percent increase in sales amid a nationwide 80 percent decline in China, due to its ability to offer online orders, contactless test drives, and home deliveries. This is a blueprint that others are already following.

Further changes are afoot. While there is little evidence yet of widespread customer enthusiasm for automated driving, there can be no denying of the safety benefits that would

result from eliminating the potential for human error. We have seen the giants of the industry, such as VW, Ford and Stellantis, sign huge deals with the likes of Argo AI and Waymo in the race towards full autonomy. Earlier this year, Honda launched the first certified Level 3 autonomous car in Japan, a Legend sedan legally permitted to drive itself (although



a human driver must be ready to intervene as and when required). Expect more to follow.

Also under consideration is the entire idea of car ownership. A 2019 survey by Accenture of 7,000 people across the US, Europe and China – 85 percent of whom were car owners – found that nearly half (48 percent) would consider giving up their vehicles if autonomous mobility solutions were available. It’s little surprise that companies such as Toyota and VW are pumping millions into technology and initiatives to ensure they are at the forefront of this revolution when it eventually arrives.

The challenges facing the car industry are many and varied, and it is clear this will prove to be a defining era for many manufacturers. In such a period of disruption, there are few certainties – other than the fact that the entire transportation landscape will change massively over the next decade.

3.24
million EVs
sold in 2020
(EV-Volumes)

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The enduring importance of communications

Investigating the role of AI in enabling car manufacturers to sell across borders with Peter Quigley from Lionbridge

The automotive industry is undergoing a revolution. Mary Barra, chair and CEO of General Motors, gave a hint of the scale of disruption back in 2016 when she said: “I have no doubt that the automotive industry will change more in the next five to 10 years than it has in the last 50. The convergence of connectivity, vehicle electrification, and evolving customer needs demand new solutions.”

Five years down the line, it is abundantly clear she was correct. The rise of EVs and connected cars, plus increased levels of automation, are changing what consumers expect from their vehicles. There are also broader societal trends that are having an effect, such as urbanization, and an increased awareness of sustainability. And of course, we are just emerging from the grip of a global pandemic, when manufacturers and retailers have had to adapt to new ways of doing business.

All this has added new levels of complexity to the process of manufacturing and selling cars globally,

and amid all this disruption, the way car manufacturers communicate with their customers has never been more important. The language they use has never been more crucial. As Peter Quigley, vice president and head of sales at leading language services provider (LSP) Lionbridge, puts it, “it is involved everywhere in the whole lifecycle of creating and manufacturing a new product in the automotive industry.”

The role of a language service provider, then, can be hugely significant in influencing how a car is perceived through its entire lifespan, from the marketing phase, through purchase and ownership, to technical back-up and maintenance.

With car makers selling their products in markets across the world, scale is obviously important. Lionbridge is a good example of company built with distributed workforce in mind, with a global reach and thousands of freelance translators and linguists at its disposal, available to transform data and content. And with the ability to work in around

350 languages – including individual dialects – the coverage is comprehensive.

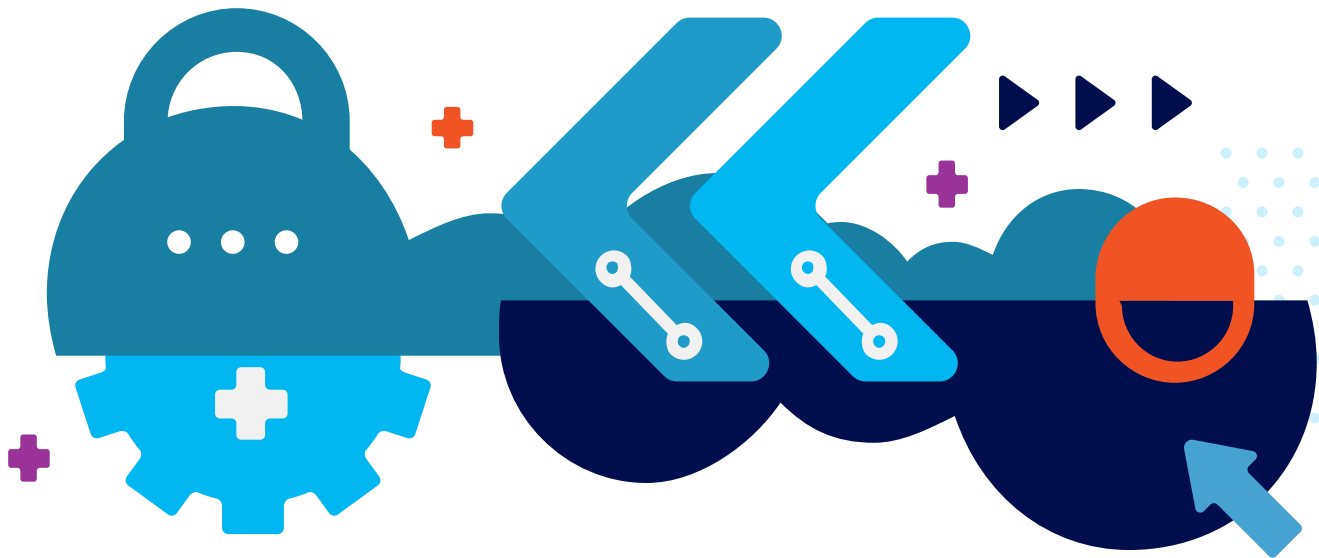
There are three key areas where an LSP such as Lionbridge can offer its expertise: translation, localization, and transcreation. Quigley explained: “Translation is essentially taking a phrase in one language and translating it, verbatim, into another language. You can follow the grammatical rules and the basics of the language, but [the text] can lose its flavor.

“That’s where localization comes in – translating language with more of an understanding of the use. Meanwhile, transcreation is more about the right message in market. It definitely applies more in marketing, and the way you communicate with customers. Having that correct message in a particular market is what enables brands to resonate in different countries and cultures, not just different languages.”

The ability to retain a consistent message in multiple markets is especially important in the digital era. “If you’re selling your products – or subscription to your products – in a much more online way, and you are managing that as part of a global strategy, then the content on your website, the language, becomes the most vital part of this,” Quigley continued.

“You can’t create a brand strategy for the native language of the company and expect it to work in every market, so the adaptation of that language, and the way that brand is positioned in that market, is different everywhere. The adaptation of the marketing message is vital.





“The choices made are based on speed to market, budgets, and their view of where the key markets are. But having the right LSP with the right tools to help automate and speed up the process means that you can do more. Adapting [the message] to fit culturally is where the skill of a linguist or post editor of a machine translation comes in.”

As you might expect, AI is playing a significant role in enabling Lionbridge to deliver these services. Indeed, the language industry has long been an enthusiastic advocate of AI, with machine translation (MT) one of the earliest use cases for the technology, going back a number of decades. Today, Lionbridge uses advanced neural network-based machine translation tools, which, according to Quigley, are increasing in output and reliability all the time, with the need for human labor constantly being reduced.

AI is also used in what he terms the ‘back office,’ to manage the content Lionbridge is working on. “Translation management systems, at their core, are project management tools,” he said. “We have our own proprietary technology that is now using AI to build workflows, to make rules on how we handle the content, and how we get it back to our clients. AI is a big part of that – it hugely increases productivity, speed to market, and removes a lot of

human touch, which is where you can introduce error.”

While AI is being used by LSPs to help car manufacturers with marketing, sales, and maintenance, one of the most intriguing potential applications for the tech is in defining the language that a vehicle would use to interact with its driver. This is likely to become more important as automation changes the way cars are perceived.

“For many younger people, the car will be seen as much more of a commoditized tool for them to move around in,” Quigley said. “With this market shift, the smart functionality of the car becomes more important. People expect interaction, and that is all supported by language.” This is another area where Lionbridge can lend its expertise, with app development, testing, and user experience design all provided as a service through its Center of Excellence, with a dedicated team for automotive clients.

Of course, this appetite for interaction mirrors what is happening elsewhere: for example, customers shopping on Amazon via Alexa. Now that automotive is catching up, Quigley agreed with Barra’s assertion that the industry is changing at a rate never seen before. “Ownership proposition is going to become the most important

part of a car,” he predicted. “Everyone will expect to be in a comfortable, safe vehicle – but the communication with it will become the key thing.”

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Industrial transformation at BMW

The German automotive giant has developed more than 400 specific tasks for artificial intelligence and machine learning

Just as the cars we drive are changing dramatically, so too are the methods employed in developing and producing them. Manufacturers are increasingly turning to AI to speed up their processes and make them more efficient. German giant BMW is among those who have been quick to recognize this potential, using AI in multiple applications across the company. Robert Engelhorn, director of the company's Munich plant, has overseen the growing influence of AI in the factory's operation, and believes it will have an ever more prominent role to play in future.



He explained: “Each car we make generates massive amounts of data. With the help of artificial intelligence and smart data analytics, we can use this data to manage and analyze our production intelligently. AI is helping us to streamline our manufacturing even further, and ensure premium quality for every customer. It also saves our employees from having to do monotonous, repetitive tasks.”

The growing importance of AI to the BMW Group is clear when you consider the number of different points this technology is employed in. One area of significant success is automated image recognition. Here, AI evaluates component images during production, comparing them to hundreds of others. The machine is thus able to determine any minor deviations, and can also assess whether the parts have been installed or mounted correctly. This is a particularly good example of AI complementing the existing workforce, since employees are still involved in the process – taking the

original set of images and marking any discrepancies to create a database from which a neural network can be trained.

AI is also being trialed in the Munich plant's paint shop for dust particle analysis. The algorithm can detect if there are increased levels of dust – due to a particularly dry period or the time of year, for example – and bring forward a filter change. AI-based system can also work out if there are too many dust particles on the body and revise the settings on the machine that removes them. With sensors monitoring 160 different parts of the body, the quality of paint application can be predicted with great accuracy.

The press shop, too, has benefited from AI. This is where sheets of flat metal are transformed into panels for the car body. Very occasionally, dust or oil residue on these parts can be confused with cracks, leading them to be categorized as ‘pseudo defects’ – ie. not faulty, but not quite achieving

BMW's quality benchmark. AI-based systems have all but eliminated this, thanks to a neural network that can access around 100 different images for each part to ensure perfection. Of course, robots are being utilized, notably to check the functionality of a feature BMW describes as ‘Comfort Access’ - the automatic unlocking of a car when the key is within a designated distance. While previously this validation process was done manually, now measurement robots are used to speed up the tests and deliver greater accuracy.

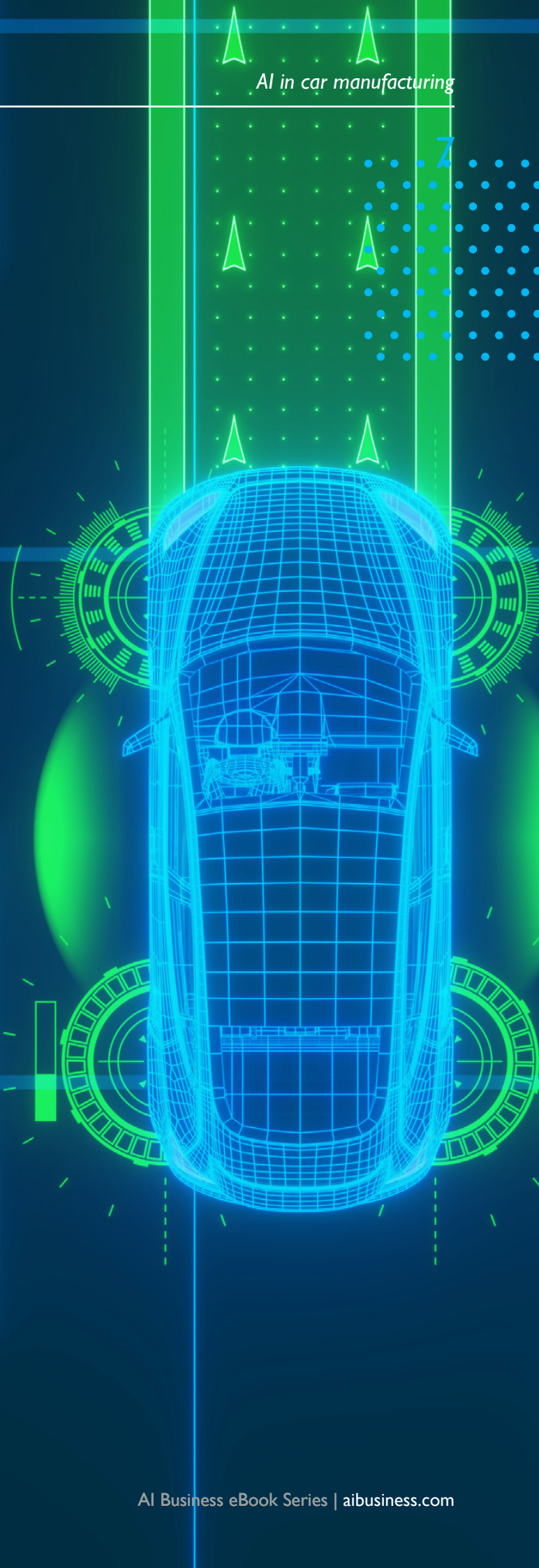
As Engelhorn is quick to point out, the common theme between all these applications is their sheer effectiveness. AI is improving the process, and that is the guiding principle each time BMW considers introducing a new piece of technology. “Our team in production are highly experienced specialists, so they are the best judges of whether an AI application can boost quality and efficiency,” he explained.

Across the business, deployment of AI isn't merely restricted to production. There are more than 400 examples right across the board – from logistics and supply chain management (supporting virtual layout planning), across buildings management (using data to determine efficient energy consumption patterns), to customer service (compiling defect databases and enabling engagement with customers via chatbots). But at its heart, BMW is a car manufacturer, and it's AI within its cars that is often the most interesting subject. The benefits that machine intelligence can offer in the vehicles of today are already well recognized, with AI providing various levels of driver assistance on the route to full automation, as well as powering BMW's Intelligent Personal Assistant – an on-board 'companion' that facilitates interaction with the car through voice control.

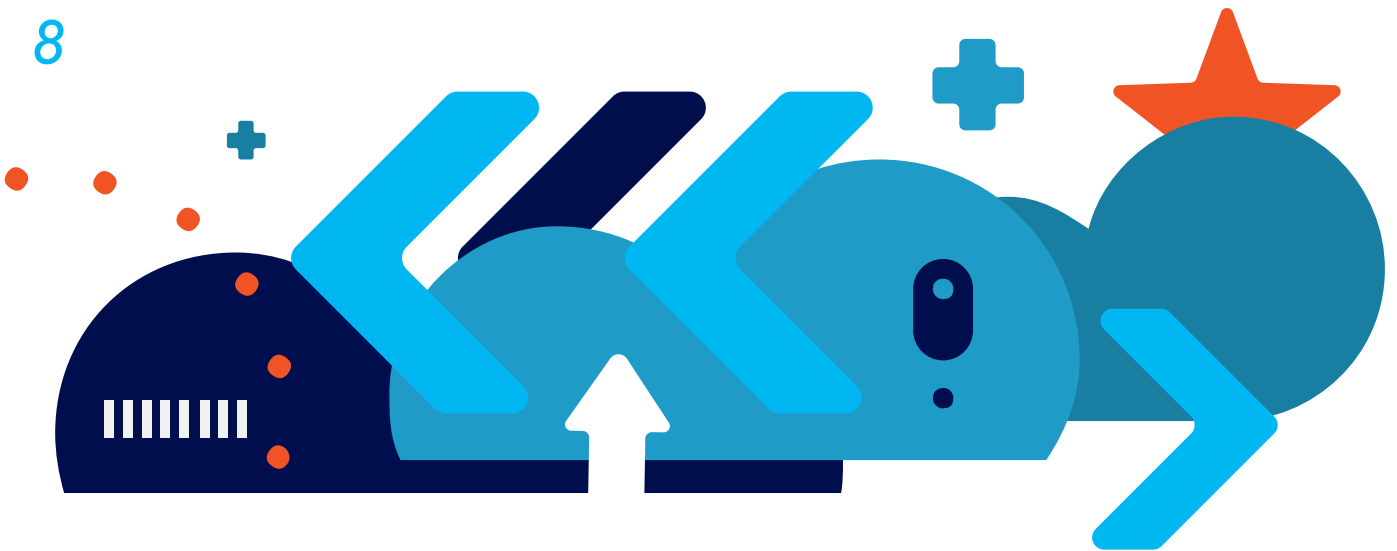
And finally, AI is being used extensively in the research and development of the vehicles of tomorrow, with energy efficiency proving a key driver. One good example of this is electricity consumption: with vehicles featuring an ever-increasing array of equipment like heated seats, air conditioning, entertainment systems, and more, the potential for these to have an adverse effect on CO₂ emissions – or the range, as is the case with electric vehicles – is obvious. For this reason, BMW is developing AI-based software that is focused on in-vehicle energy management. This will take user behavior and route information into account to adjust the energy consumption and deliver maximum efficiency.

As with any good company, people remain at the heart of BMW's business. Project AI was launched in 2018 to ensure that any new machine learning tech is used both ethically and efficiently across the group. This ensures the development and implementation of AI across the entire BMW Group must adhere to several guiding principles.

As Michael Würtenberger, BMW's head of Project AI explained, "Artificial intelligence is the key technology in the process of digital transformation. But for us the focus remains on people. AI supports our employees and improves the customer experience. We are proceeding purposefully and with caution in the expansion of AI applications within the company."



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The car that helps you drive

Exploring the role of sensors and algorithms within the cabin with Dr Rana el Kaliouby, CEO of Affectiva

Our relationship with the car is changing more rapidly than at any point in history, and artificial intelligence is one of the major driving forces behind this shake-up. For many, autonomous driving remains the most obvious in-car application for machine learning, where an AI ‘brain’ takes information from the cameras and sensors to carve a quick, safe, and efficient path along the road.

But what if those camera lenses turned their attention to what was going on inside the car? That’s exactly what Affectiva CEO, Dr Rana el Kaliouby, has been doing for the past few years. She and her team are developing the latest generation of AI-powered in-car sensing (ICS) solutions, which monitor the behavior of all occupants of a car, using both facial recognition and body posture data.

Concentrating on human perception and ‘emotion AI,’ this work is providing a deep, user-focused understanding of the way we interact with our cars. Not only will this technology make vehicles safer, it’ll also make the interior technology more adaptable to our needs – and even moods.

“We are seeing a trend where the sensors are turning inwards, and that’s in-car sensing,” Dr el Kaliouby explained. “This is the marriage of driver monitoring and cabin monitoring, which is looking at the other occupants and objects in the car, then using that information to optimize the user mobility experience.”

Working with automotive OEMs, Affectiva has recently secured six patents for its ground-breaking in-cabin sensing tech, each with an emphasis on either safety or in-car experience. In terms of the safety benefits, its drowsiness alert uses facial recognition and metrics such as blink rate to recommend the driver takes a break. In combination with the OEM’s existing infotainment and navigation systems, it can even recommend a place to stop and have a coffee. In time, and with further automation, the car could potentially take over, perhaps by bringing itself safely to a stop.

As cars become increasingly autonomous, the ability to ascertain the driver’s awareness and return control when human intervention is necessary will become even more

important. If the driver isn’t fully engaged, then the car will have to take steps to alert them to the coming hazard.

In some respects, driver monitoring is a well-established feature, with cameras located in the instrument display reading the face of the person behind the wheel, and the results being analyzed by an AI-based system to make these safety critical decisions. However, moving the cameras up higher, to the same area as the rear-view mirror, affords a better view of the interior and all its occupants, opening up the possibilities of in-car sensing.

For example, an alert could be raised if the system detects a child seat left in the car, potentially with a child still in it, or an animal that’s been forgotten. It is even possible to detect whether a mobile phone or a handbag has been left in a visible position. Yet it’s Affectiva’s use of data and AI for mood and emotion detection that really sets it apart, opening endless possibilities for personalization when on the move.

“These are the user experience application functions,” Dr el Kaliouby continued. “So if you can detect a driver is angry, surprised, or shocked because something happened on the road, then the car can provide assistance. You can also personalize the interior by changing the music or temperature in the car because you can see what the occupants are doing and enhance the environment. For instance, if I’m sleeping in the back seat, the car could decide to dim the lights or turn down the music. You can also use facial recognition ID to customize the entire cabin environment based on an individual driver’s preferences. And maybe if you’ve got kids in the back, you can play different content based on their current mood and previous choices.”

Of course, the technology is still in its infancy; premium manufacturers are just beginning to adopt driver monitoring systems. As with other innovations, the benefits will soon trickle down to mainstream markets as the costs come down, opening up AI-based features to an ever-widening customer base. This is something that Affectiva sees happening sooner rather than later – and could be one of the reasons why Swedish driver monitoring systems developer Smart Eye acquired the company in May 2021, in a cash and stock deal worth \$73.5 million.

“First, you have to collect all the right data, then build the right algorithm, and finally make it all fit inside an automotive-grade chip,” Dr el Kaliouby said. “It also has to work with RGB (daytime) and infrared (night time) cameras, so there are a lot of technical challenges, but once you get there, the cost of replicating that for different models is fairly straightforward, especially because we use deep learning, which is generalizable”.



Once the tech is more widespread and the OEMs integrate their own systems to support this kind of functionality, the possibilities are potentially endless: from improving health and well-being to creating that bespoke environment for each occupant. Body tracking can be used to assess posture and offer seating recommendations, and it is already possible to use the same cameras to monitor heart and breathing rate – crucial in building a picture of stress levels.

“The technology could also work with other sensors in the car, sound, for example,” Dr el Kaliouby added. “The systems wouldn’t be ‘listening’ as such, but could use the data to build an even more precise picture of the user’s needs, to the point you can imagine every aspect of the mobility experience can be optimized depending on the number of people in the car, and what’s their mood.”

For many of us, a car has always represented an opportunity for self-expression – to tell the world who we are through our choice of what we drive. In the coming years and decades, it looks like that relationship is only going to intensify.

First, you have to collect all the right data, then build the right algorithm, and finally make it all fit inside an automotive-grade chip

“It’s a complex customer journey”

Discussing the evolution of car sales with Robert Forrester, CEO of Vertu Motors

When it comes to selling cars, few do it more successfully than Vertu Motors. It is one of the UK’s leading car retailers, operating a chain of franchised dealerships – many as Bristol Street Motors – that also offer servicing, parts, and bodyshop facilities. What has the dawn of the digital era meant for the traditional sales and service model? And what does the future hold? We spoke to chief executive officer Robert Forrester about how his business has changed, and what he expects to happen over the next few years.

AI Business (AIB): How has the pandemic changed the car buying process?

Robert Forrester (RF): It’s quite difficult to untangle the causation of what has gone on. Is it the pandemic? Is it the rise of better technology? I think it is true that the pandemic has accelerated trends that were coming anyway. But I would categorize it by saying if the retailer is doing their job, the customers now have multiple choices of how to interact. They have a choice over the speed of the process, the location of the process, and the extent to which it is digital.

AIB: Can you give an example of this?

RF: Pre-Covid, we’d get an in-bound phone call. What is our objective as a retailer? Historically, the objective would be to convert that phone inquiry into a physical appointment in the dealership, because the product is there. However, during lockdown we sold 38,000 cars in Q1, without any test drives and no showrooms. So, you have to ask if that is actually the correct approach to that in-bound phone call. Or are we missing an



opportunity... if the customer wants (and that’s the crucial bit) to have a personalized video of the car? Engage in a video call with the sales executive? Have the offer? We can do a deal, take them out of the market, and have them in at the weekend to do the test drive.

AIB: How digital can the process become?

RF: Pure e-commerce retailing of cars is minimal. But digital interaction, digital marketing, customer journeys, some of which are digital, make up the majority. That doesn’t mean dealerships aren’t involved – the vast majority of people still end up in a dealership. It’s a complex customer journey, not a simple, linear one.

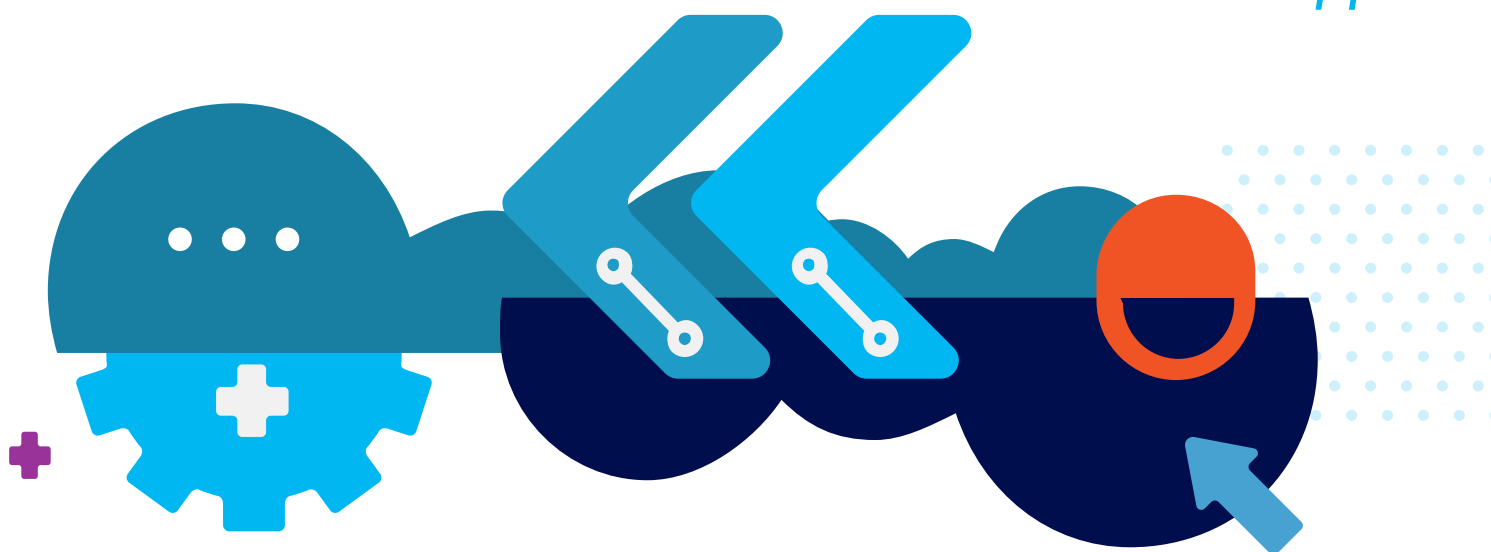
AIB: Why is the amount of pure e-commerce minimal?

RF: We were the first player in Europe to do digital online retailing of used cars with finance and [part exchange] in May 2017, so we have been at this a long time. We sold 500 cars in that

way during our last financial year in the pandemic, out of 65,000 cars. What customers want is digital experience with human help. These are big, complex transactions – people prefer to trade locally because they want to know where to go if the car goes wrong and where to have the car serviced.

AIB: What digital technologies can we expect to help in the car buying process?

RF: What we have now is a good checklist. We’ve got part exchange valuation online. We have digital finance. All documentations and authorizations are via SMS text message codes. The process is the same whether you’re on the sofa, in the sauna, or at the dealership, apart from the fact you can’t do a test drive remotely. I would also expect manufacturers – not retailers – to be pushing augmented reality through the retail networks. And then there is quite a lot of big data and artificial



intelligence type stuff, on how to maximize each individual inquiry. We're very much into joining all the data up: we've got customer data, we know everything about the vehicle, it's all in one place, so we can see what interactions we have had previously.

AIB: How does AI help the business?

RF: We've got 40 software developers, including robotics engineers who develop bots and software. We are doing thousands and thousands of online service bookings using chatbots. It appears like a person, it's live chat, it's actually very sophisticated, and it works very well.

AIB: You've said previously that retailers need to be more like tech companies. Can you explain what you meant?

RF: We have specialists in 'pay per click' marketing, specialists in third-party aggregator marketing, specialists in SEO, specialists in data, a conversion rate optimization manager... If you have a website like bristolstreet.co.uk, where you have 18 million unique visitors a year, minor changes in conversion rate can have a massive impact. This is a huge growth area for us.

AIB: How do you use digital tech to service and maintain cars?

RF: The marketing is quite heavily digitalized. We predict when mechanical parts will need renewal. That data feeds into our contact centers to stimulate a customer interaction. We use online service bookings, through bots and forms. We have a digital conquest strategy, where we use digital marketing to identify people potentially defecting from our database, those with older cars, and then we hit them with an offer. And if your car comes in for a service, every technician makes a video identifying what is good and what needs working on, and that goes to the customer who can press a button and approve the work.

AIB: How will people buy cars in 2030?

RF: I think there will be an evolution from today. But I still hold that most people will physically want to see the car at some point in the process, so I don't think it will be massively radical. But we'll be there with the digital tech if they want to do it remotely. How 2030 will work is a bit of a mystery to us all. What will the cost of an electric vehicle be? Will the economies of scale have kicked in to reduce the cost to a sensible level? I have my doubts, because of the cost of batteries.

AIB: What will retail properties look like in 2030?

RF: From a Vertu perspective, I would want more than I have now. But from an overall country network point of view, there will clearly be fewer physical dealerships. Smaller ones will close, there will be a lot more multi-franchising, so the density of the network will be reduced. There could be quite innovative things like test drive centers, and service-only outlets with used vehicles. I think there will be a lot of flexibility about how we do things.

AIB: And what about the customer experience in 2030?

RF: The progression of doing more remotely at your own convenience and having a purchasing journey absolutely bespoke to you, where you drive the pace and method, will be well-embedded by 2030. Also, I don't think there will be discounting – there will be a price and that will be the price. I also think connected car tech will revolutionize the customer experience. The car will tell the factory that there is a component about to fail, they will tell us there is a component about to fail, and we will be able to contact them before the component fails. That will help retailers to grow market share in the after-sales department.

Seamless and natural

Talking the challenge of appealing to global audiences with Markus Drießen, localization specialist at Lionbridge's Automotive Center of Excellence

Globalization – it's a word we're all familiar with, one that's become shorthand for the way big businesses operate today. In a digitally connected world, the pool of potential customers doesn't begin and end with the country of origin, it stretches to every corner of the globe, and its billions of inhabitants.

The modern business landscape sustains almost limitless markets, while for consumers, it brings unimaginable choice. It doesn't matter where you are, you can sell your wares to eager buyers on the other side of the planet. But a few obstacles remain, and language is certainly one of them. If you can't communicate with your customer, there's no deal to be done.

This is, of course, where companies need to engage in localization – in many ways, the other end of the globalization telescope. You might have access to a global audience, but now you need to speak to them, and even more importantly, so does your product. This is the challenge facing the automotive industry, where the ever-increasing levels of interactive technology have made translation one of the hottest topics.

No longer is it a matter of simply translating the owner's manual and a few infotainment functions; such is the incredible complexity of the latest generation of cars that translation needs to be a baked-in from the start. From multi-level driver interfaces, through to voice control, the car's ability to understand its user, and vice versa, has never been more important.

This point was pressed home by solution architect Markus Drießen, who has more than 20 years of experience in localization at Lionbridge's Automotive Center of Excellence. "Localization really is at the heart of the automotive industry," he explained. "To put it bluntly, the automotive industry needs language solutions for the entire range of vehicle content. That's why automotive expertise is extremely important here, and every single interaction must be perfectly tailored to the end customer."

Whereas in the past, localization experts could be brought into the design and launch of a new car at a relatively late stage, today the need for quick and accurate translation must be included with the early building

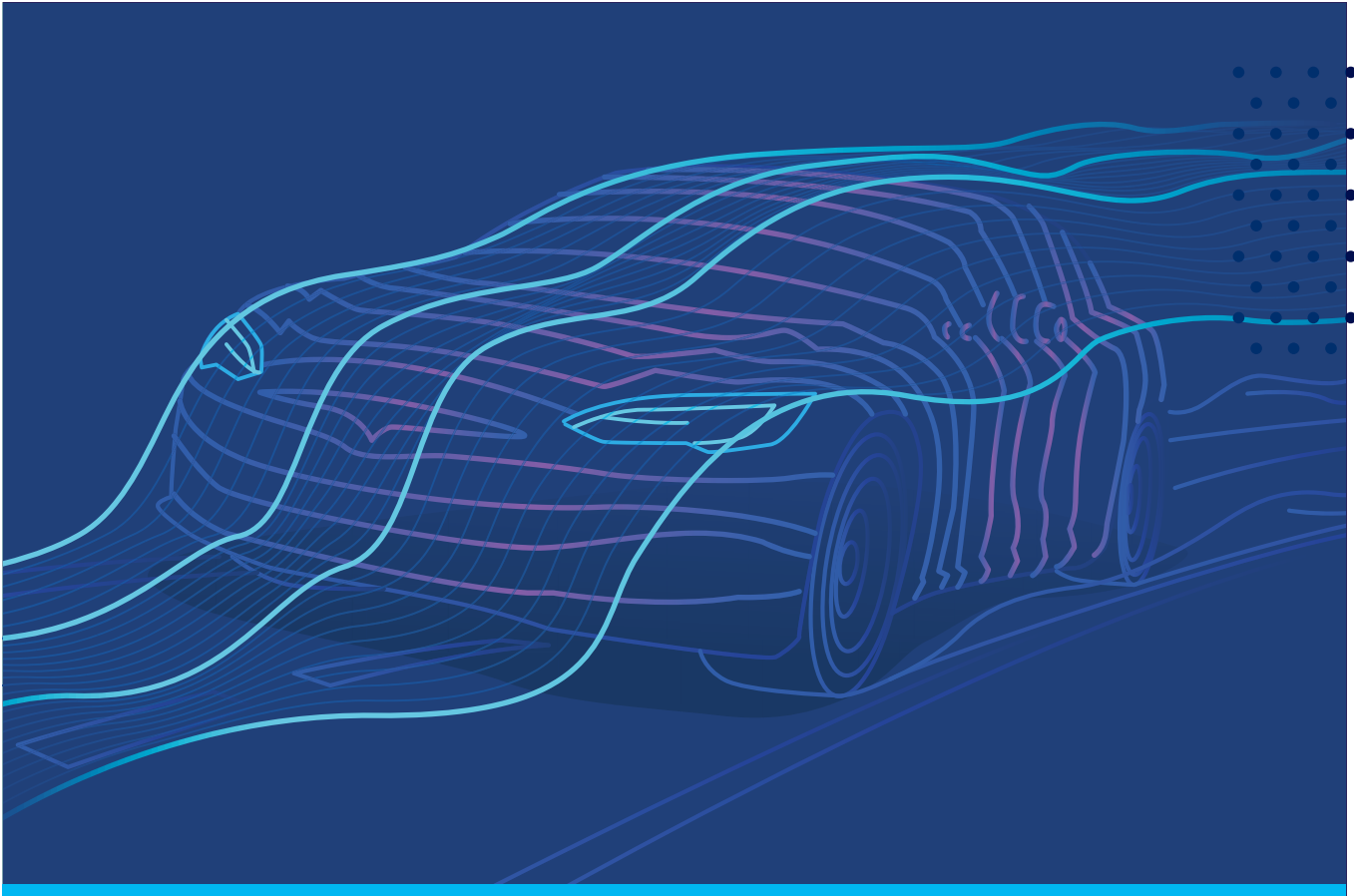
blocks. For Lionbridge, this means forging close relationships with its clients from the outset. "My colleagues immerse themselves in every project, automatically adopting the perspective of the customer," Drießen said. "This means that not only is the content presented in the desired mother tongue, it is also prepared in a contextually appropriate way."

This idea of context is crucial, because localization involves the all-important cultural cues, local dialects, and branding messages that must be accurately assimilated. There are very subtle nuances and carefully coded shorthands that would be easy to miss, but could have far-reaching effects on the result, and on the customer's experience and potential loyalty to the brand.

"Today, time pressures mean more and more texts are often taken out of context," Drießen continued. "However, the brand image – the associations that a customer has with a brand – requires a uniform language implementation. For instance, if a system translates the Audi message of 'Vorsprung durch Technik' as 'Vorsprung durch Technologie,' there is a small change in the words, but a big difference in message. Just imagine the outcry of the brand managers! We need to express the brand personality of our clients adequately and with local relevance, all over the world."

For Lionbridge, the combined use of AI and its team of highly qualified translation experts means that these challenges can be met from the outset, with teams integrating with the client to deliver the results that fit seamlessly and naturally with the end product.





“Our administration efforts can be shortened by intelligent learning systems,” Drießen stressed. “For example, AI can be used in the selection of the right language experts. Content is analyzed, classified according to previously defined units, and then automatically matched with the qualifications of our language experts.”

And the use of machine learning is only going to increase – the rapid development of AI technologies making for faster and more finely-tuned translations. “We see fewer and fewer obstacles to the use of machine translation,” Drießen said. “The utility of these technologies has increased greatly in recent years thanks to significant quality improvements from deep learning applications.”

What Lionbridge’s top localization expert was keen to emphasize,

however, is that these huge strides in machine learning technology don’t replace extensive human knowledge; rather, they make the process more accurate, intuitive and, importantly, cost-effective. “Machine translation will continue to evolve and become increasingly important for translation productivity,” he said. “Yet what remains is the need for expertise in language, translation, and translation processes. Intelligent systems are constantly learning, that is true. But the systems still need to be trained, and the source texts still need to be checked or adapted.”

AI technology is allowing language services specialists such as Lionbridge to make huge strides in accuracy and efficiency, and their customers – to deliver products that effortlessly integrate with the lives of their clients, wherever they are in the world. As Drießen neatly summed up: “Internal

systems are taking on more tasks today than ever before. Smart in-car systems know your users’ preferences, communicate with them in their preferred language and manner. They support the driving experience by actively thinking for themselves. Today’s car owners expect this level of personalization. It seems only natural that manufacturers who meet these high expectations will achieve better customer satisfaction and retention scores.”

We need to express the brand personality of our clients adequately and with local relevance, all over the world.

One brand, one voice

Exploring how localization helped Volvo deliver unified brand messaging

“So many campaigns were launched at the same time just after the new system went live. With our previous set-up this simply would not have been possible.”



Online sales are booming. In 2020, the global e-commerce market was worth just under \$5 trillion dollars, with transactions up nearly 30 percent over the same period in 2019. Most analysts are predicting that this is just the start, and the shift to digital shopping is only going to accelerate.

The coronavirus pandemic has played its part in generating the impressive figures – but look further back through the statistics and it’s clear it merely accelerated a change that was already happening. The message is clear: if you want to get ahead, get online.

Swedish car manufacturer Volvo identified this change sooner than most, making a commitment to switch to a purely online sales model for its electric vehicles by 2030. This required the brand to essentially create a single digital ‘flagship store’ that reflected its values and messaging to customers all over the world, bringing together 200 million visitors that had previously used 100 different regional sites in 45 languages.

“As we move to online sales, we need to own the message again,” explained Cecilia Ernby, Volvo’s production lead for Global Online Digital. “We wanted to move away from this scattered look and fragmented brand story, and instead we wanted to build one brand and one platform that was centrally edited and translated.”

Up to this point, the various separate websites were run and translated locally, with little or no input from Volvo’s Gothenburg headquarters, resulting in widely differing sales strategies, visuals, and messaging. What the firm wanted to create was a website that looked the same to

customers all over the world, from Britain to Belgium, and from Sweden to South Africa, but each in its own language, and infused with appropriate cultural values.

To achieve this ambitious goal, Volvo turned to language and localization specialists Lionbridge, as well as digital services provider Avanade, moving away from more than 35 different translation services to one centralized team using a highly automated Smartling translation management system. Not only did this save more than 1,000 hours of translation time, the integration with the website’s content management system allowed quicker and more accurate translations for the various markets.

Volvo and Lionbridge also focused heavily on search engine optimization through the new, centrally located translation team. “We work closely with the regions and markets collecting keywords and improving transcreation and adjusting and improving the translations according to this research,” Ernby said. “Through Lionbridge, we are able to create a uniform tone of voice regardless of region.”

The result is that Volvo’s regional websites now share a consistent look and messaging, while customers get the same user experience regardless of where they are based. These changes allow Volvo to work more quickly, efficiently, and accurately when launching new products and initiatives.

“So many campaigns were launched at the same time just after the new system went live,” Ernby said. “With our previous set-up this simply would not have been possible.”

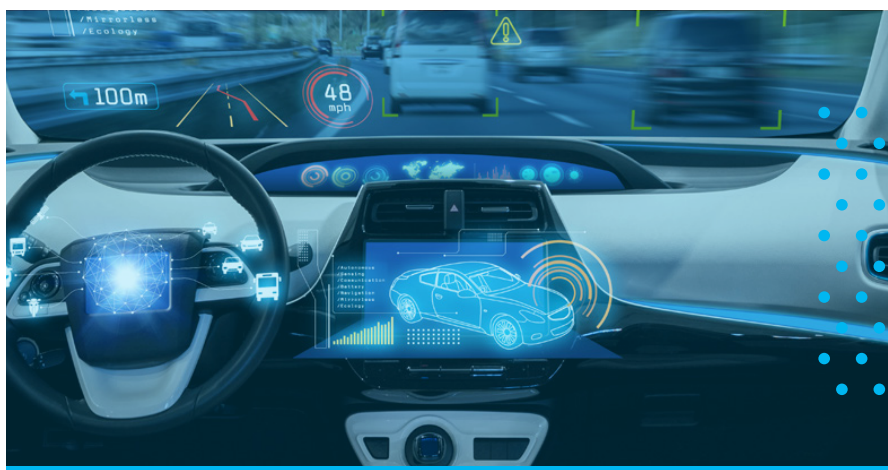
The self-driving future

Looking at how the car will be able to take the wheel

You don't need a crystal ball to foresee what a huge impact AI is going to have on the automotive industry over the coming years. The sector was a relatively late adopter of the technology – as recently as 2015, just five percent of new vehicles were embedded with any form of AI, according to industry analysts Futurebridge. Its experts have predicted that by 2030, this figure will have jumped to between 95 and 98 percent. That's quite some take up.

What will be the driving force behind this exponential increase in the adoption of machine learning? We've already seen how manufacturing, supply chain logistics, retail, language translation, and even in-car personalization have increasingly taken to AI. But, perhaps predictably, it will be the accelerated development and acceptance of autonomous driving that will be responsible for the biggest explosion in its use, with Futurebridge estimating that up to 60 percent of cars sold in 2030 will have Level 3 (conditional automated driving), Level 4 (high autonomy) or Level 5 (full self-driving) functionality.

This level of autonomy will have a fundamental effect on the roads, and is expected to considerably improve driving safety. The UK's Society of Manufacturers and Motor Traders has calculated that emergence of automated driving and driver assistance systems could prevent 47,000 serious injuries and 3,900 deaths on Britain's roads in the next decade, largely by removing the single biggest cause of all accidents: human error. In combination with networked cars that can 'talk' to each other, the scale of reduction in



casualties on the road will dwarf any previous innovation, including seatbelts and airbags.

There will, of course, be consumer resistance, with just 14 percent of respondents to a 2020 American Automobile Association survey reporting they would trust a driverless car. Yet this study was conducted prior to the pandemic. Since then, increased working from home has highlighted how many hours of productivity were wasted behind the wheel. As people return to offices, it's very likely we will become increasingly reluctant to lose out on this time – a paradigm shift that will likely turbocharge the development of vehicles that allow us to concentrate on work or relaxation, instead of the road ahead.

VW is suggesting that in the early days of its development, this level of autonomous driving could see a reduction in demand for public transport, with the firm proposing a possible pay-by-the-hour subscription option for its cars. The expensive self-driving software and hardware

would be pre-installed, but drivers could activate it whenever needed. "In autonomous driving, we can imagine that we switch it on by the hour," said Klaus Zellmer, VW's head of sales and marketing. "We assume a price of around seven euros per hour. So if you don't want to drive yourself for three hours, you can do it for 21 euros." For longer journeys, you'd no longer need the train to take the strain.

Crucially, these changes are going to see a fundamental shift in the way automotive OEMs operate, resulting in increased collaboration with technology providers such as self-driving specialists Waymo, Baidu, and Tencent, that can leverage specialist AI expertise. The OEMs will eventually acquire or subsume these AI firms, as they seek to gain a competitive advantage in what will become an increasingly important aspect of future mobility.

One thing's for sure: the automotive industry is going to undergo more change in the next few decades than it has over the last century and a half.



AI Business
eBook Series



LIONBRIDGE

Lionbridge partners with brands to break barriers and build bridges all over the world. For 25 years, we have helped companies connect with their global customers and employees by delivering translation and localization solutions in 350+ languages. Through our world-class platform, we orchestrate a network of passionate experts across the globe who partner with brands to create culturally rich experiences.

Relentless in our love of linguistics, we use the best of human and machine intelligence to forge understanding that resonates with our customers' customers. Based in Waltham, Massachusetts, Lionbridge maintains solution centers in 23 countries. Learn more at www.lionbridge.com.

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