

Opportunities for Digitization

New business models Innovative services More efficiency

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Cars and smart services

The automotive industry is facing radical changes. In the future, it will no longer focus merely on the car as a product, but also on innovative services. **Page 3**



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Using instead of buying

How "mobility as a service" is transforming the car business. And how automotive manufacturers will benefit when they open up their business model. **Page 5**

The clock is ticking

Digitization is presenting the automotive industry with the greatest revolution in its history. By the middle of the coming decade nothing will be as it was before. But that does not mean that companies that have been successful will be the losers – on the contrary. Those who know how to take advantage of the opportunities presented by the upheaval will have a lot to gain.



Axel Schmidt, Managing Director of Accenture's Global Automotive Practice

Three megatrends will revolutionize the automotive industry in the near future: autonomous driving, electric vehicle systems and car sharing. Every one of these trends has the potential to change the industry. But all together? An explosive mixture, and once ignited, it will shake the industry to its core. The first signs are already emerging: 37 percent of all car buyers would choose to drive autonomously today. Electric car manufacturer Tesla has registered about half a million pre-orders for its latest model. And two million drivers are already using sharing services—in Germany alone.

Sharing cars, in particular, will constitute a threat for the industry. Car-sharing increases the utilization of existing cars, lowers the cost per kilometer—making car ownership unnecessary for an increasing number of people. If this development is further supported by autonomous driving technology and low-maintenance electric cars, then proven business models will be at risk.

The growth limits in the automotive business have already become clear: sales of conventional cars will reach their "growth peak" in 2019. After that, industry revenues and profits will continue to grow, driven by the demand in individual growth markets, but they will be generated less and less from the sale of cars. In 2030, manufacturers will generate only marginally more with the sale of cars than they are

today: approximately 2 billion euros (2.4 billion dollars). However, the business with mobility services that is only just starting to emerge will be worth about 1.2 billion euros (1.4 billion dollars) by then.

At the same time, disruptive players, some of whom we aren't even aware of yet, are cutting into manufacturers' market shares. They are mobile, innovative, and financially stable – and above all they don't have to worry about traditional technology and the business models of the internal combustion engine era. Added to this, of course, there are new

Those who do nothing will no longer be competitive.

technologies at ever lower prices. The cost of battery technology, LIDAR systems, memory banks or AI algorithms will continue to fall and make electric and autonomous driving cheaper.

The upshot for manufacturers and suppliers is that there is no longer any way around digitization. Not changing their business models, strategies and

products means a loss of competitiveness. On the following pages we will show you what companies can do to avoid this.

"Cars and smart services" on page 3 discusses eight (new) business areas that are opened by digitization. "Using instead of buying" on page 5 examines the role mobility services play. And on page 6 you will read how digitization will change the car business. The article, "The digital buying experience", describes why the role of the car dealership will be changed by the multi-channel strategies of the future, but their contribution to business success will essentially remain important. In the future, dealers will still be key "touchpoints" to convey brand experiences – and points of sale for profitable aftersales services. Finally, "Data as the fuel for innovation" on page 7 discusses how manufacturers and dealers can improve the wealth of driving and navigation data to be able to identify customer needs even earlier and customize appropriate product ranges. Thus, product development, manufacturing, and sales, for example, need to be more closely aligned.

It is the aim of our magazine to provide you with food for thought and recommendations for advancing the automotive digital transition throughout your company.

Enjoy reading!

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Electric cars, networking, car sharing: the automotive industry is facing radical change.

The digital future started at Daimler about nine years ago. At that time, the manufacturer took a share in Tesla, the purveyor of cool electric cars. Although the group from Stuttgart sold its shares again, it continued to invest: in the taxi apps My-Taxi, RideScout, Hailo, the delivery services Tiramizoo and Matternet, and in the fleet management systems Zonar and Athlon. The mobility platform Moovel, which offers users access to the best modes of transportation for their routes, was created by the cooperation with public transit and car rental companies. The Swabians are also trying their hand at fleet and logistics management, experimenting with electric cars, and working on the marketing of traffic and driving-related data along with geodata.

Diversification is the order of the day in the automotive industry. Volkswagen, Audi and BMW are also currently investing in startups and looking for new cooperation partners. The industry is facing enormous upheaval: the advances of digital technologies and the networking of people, products, and companies are making new mobility opportunities possible.

Automobile manufacturers find themselves confronted with new competitors from the information technology (IT), energy and logistics sectors – digital companies such as Google, Facebook or Apple; but also, still very young companies like Uber or Drivy. They are all companies that established manufacturers did not previously have on their radar as competitors.

At the same time, customers and government are demanding new types of cars, and sharing services are changing customer relationships and the auto sales business. The pressure to transform is increasing, but this creates new opportunities. "The automotive industry will no

Cars and smart services

New business models, more efficiency: The automotive industry is facing radical change. In the future, it will no longer focus merely on the car as a product, but also on innovative services.

longer be about only one product," said Andreas Gissler, Managing Director in Automotive Strategy at Accenture. "The business is morphing into a service business. By using digitization, automotive manufacturers can offer new services that meet their needs with respect to mobility, but also develop businesses with data that will increase their profits enormously."

According to a current study conducted by Accenture, profitability will grow by about 36 percent by 2020, namely due to improved efficiency, as well as earnings from new businesses. For a brand with annual revenue of about 50 billion euros (59.2 billion dollars), Accenture estimates an increase in value of more than 2 billion euros (2.4 billion dollars). Fifty-two percent of that could be generated in the areas of marketing, sales and aftersales, as well as by directly addressing and interacting with customers. The rest would come from the professionalization of research, production and supply chains with the aid of data or business intelligence.

"To be able to boost the overall increase in value, automotive manufacturers are currently es-

tablishing new value chains," said Gissler. "The majority of companies recognize digitization as an opportunity to change processes and brand communication. Many are already transforming key areas of their business, but only a few are moving forward far and fast enough." Only those companies that no longer concern themselves only with processes, but instead derive opportunities for cooperation and innovative solutions for customer needs from digital networking, will secure their access to more revenue.

The networking of humans and machines is now changing all markets. By 2027, three out of four companies listed in the Standard and Poor's Index today that are not able to keep pace, will be out of the picture. "The automotive industry in particular will change drastically in the next 10 years," Gissler explained, "because there are a number of trends that will displace the car as we know it today." Audi has already announced its intent to generate a large part of its revenue with digital services by 2025.

Their competitors are working on new sources of income as well. [text continues on page 4]

[text continues]

The industry that is dealing with digitization is also working on new car systems and will have to address the effects of urbanization. By 2030, 60 percent of the world's population will be living in cities. Demands for new traffic regulations to combat congestion and pollution are becoming more vocal than ever. To meet air quality control specifications, bans on driving are already being discussed in Stuttgart and Munich. For decades, the automobile manufacturers have been working, not only on electric cars and fuel cells, but also on efficient methods for managing traffic flows.

In this respect, digitization is playing right into their hands. Thanks to mobile devices, nowadays anyone can arrange for a car, a driver or passengers in only a few minutes and for as long as needed. Startups such as Uber, Qixxit and Drivy were the first to recognize the potential for disruptive services, and separated mobility from car ownership – thus opening up new markets. Uber, for example, provides transportation capacities for people and goods. Automobile manufacturers such as BMW and Daimler started comparable sharing services like Car2Go or DriveNow, thereby securing additional income sources for themselves. According to studies, in just a few years, every fourth trip will be supplied by a mobility services provider and will no longer be undertaken in one's own car. This has an impact on customer relationships in the automotive

industry. If drivers no longer need their own car, fleet operators and sharing services will move into the spotlight as potential car buyers. For consumers, on the other hand, the intent is to create bonds with the mobility services of brands and partners.

"New technologies and lucrative market prospects result in a convergence of industry sectors and market participants," said Gissler. "New business models, beyond car sales, offer significant revenue opportunities for the manufacturers." On the part of the manufacturers, however,

The digital era requires new business models.



Andreas Gissler, Managing Director in Automotive Strategy at Accenture

this requires the willingness to focus on customer needs with respect to mobility, transportation and delivery, and also to develop practical solutions with partners from other industries.

The willingness to cooperate is needed, as is overcoming old animosities. BMW and Daimler wanting to combine their sharing services Car2Go and DriveNow should be considered a reaction to the rapid growth of Uber and the realization that, in the digital era, size is important. Because on their own, no automotive manufacturer

is strong enough to deal with the market power of digital companies like Google or Facebook. Partnerships with companies from other industries, such as Apple or Amazon, complement the company's own strengths and also enable additional business, such as streaming services, entertainment and other services for drivers.

Partnerships also help in another new business area – with the networking of cars and autonomous driving. As early as 2025, every car sold is anticipated to be connected to the internet via interfaces. By 2030, about four million cars are expected to be moving autonomously in traffic. When drivers and cars have access to all the information and services of the internet at all times and, conversely, manufacturers can continuously retrieve data regarding driving and use of cars, an infinite number of services and other technologies related to driving, and for entertainment and communication, are conceivable.

Starting with reserving parking spaces to reserving goods and hotels from the car, to services related to financing and insurance or media services. With partners, and via the networking of their vehicles, automobile manufacturers can create brand new worlds and communicate intensively with their customers.

On the other hand, they will also have to develop software solutions relating to the security and standardization of the exchange of data. In this area, Accenture Strategy forecasts a market volume of close to 11 billion euros (13 billion dollars) annually, which could grow to more than 150 billion euros (177.5 billion dollars) by 2030. "To do this, automobile manufacturers will expand their existing value chains to flexible networks to cooperate with partners and service providers on their own platforms," predicts Gissler. "Customers will log on to these platforms via smartphones to make use of mobility and other services. Other product or usage data can be exchanged and analyzed in this way as well."

Data will become the engine that drives the business of the automotive industry. Information regarding the use of cars, routes and reasons for trips makes mobility needs clear and initiates more services. Conversely, the enhancement of vehicle, geo and user data will become another billion-euro business. Automobile manufacturers will be able to market their platforms and the knowledge being created there just as internet companies like Amazon, Alibaba, Facebook, Google or Apple are already doing today. In this way, the producers of cars will become smart companies, the business of which revolves around cars, networking and data.



Market of the future: Autonomously driving cars.

Foto: iStock/chombosan



Foto: iStock

Mobility at the touch of a button: The smartphone has become a mobility manager.

Using instead of buying

How mobility as a service is changing the car business.

The demand for car-sharing services has been growing for years. By the end of 2016, nearly two million drivers had registered with a provider in Germany; 36 percent more than in the previous year. So far there are 600 municipalities in which people are sharing cars. Remarkable numbers and yet not even a fraction of what the near future will bring.

Once autonomous and e-car technologies reach the mass market in a few years, the business with shared vehicles is expected to virtually explode. In combination with digital services, the new developments will make car sharing and ride hailing as easy and affordable as never before. The price for one kilometer in the shared autonomous e-car could even fall below that of one kilometer in local public transit. The new services will also provide a greater range of options for customers: So why still buy a car, if you can affordably rent a new and different one every day?

"Sharing will be the new normal," said Jürgen Reers, Managing Director at Accenture. "In the future, most of us will no longer be buying cars; instead we will buy kilometers." The confluence of new technology and changing customer needs is accelerating this development considerably. "Together the two have a really disruptive effect – and it will help 'mobility as a service' break through much sooner than originally imagined. By 2030 it will be a mass market."

Initially, this is not good news for the automotive industry. The demand for new cars is likely to decrease in the foreseeable future; forecasts say that sales will only continue to grow until 2019 and will then decline.

Manufacturers can nonetheless expect good business in the future as well – if they adjust. Those who no longer run their company only as automakers, but instead also as mobility service providers, will be able to participate in the new business. And that will pay off.

'Mobility as a service' is still a future market, which is furthermore largely dominated by new players such as Car2Go, DriveNow, Gett Lyft, Uber or Zipcar. But, driven by the developments in vehicle technology mentioned earlier, this market is expected to enjoy vigorous growth very soon. Precisely these developments, however, are coming predominantly from OEMs and component suppliers – and therein lies the big opportunity for manufacturers. "The startups may have made 'mobility as a service' possible," said Reers. "But the business truly becomes a mass market only with autonomous cars and electric cars." Automotive technology is merging the car sharing, ride hailing and taxi business and at the same time is opening all three for every car owner. "This makes the whole thing a billion-euro business."

In this business, OEMs can occupy the key position – the interface between car and services, between hardware and software. And the manufacturers will be able to utilize other advantages: their strong brands, for example, and their large customer

base and their dealer networks. They can also benefit from totally new opportunities, explained André Gerhardy, Senior Manager in Accenture's Automotive practice. "If a manufacturer develops vehicles specifically for sharing services, he could optimize them for maximum reusability – and then utilize the benefits of a 'circular economy'. That is only one obvious example for everything that will be possible in the future."

These opportunities will not set in entirely on their own, however – and the competition with the new players is likely to become even fiercer. In the struggle to agree on platform standards and other control points, the manufacturers are coming up against companies like Alphabet, Apple, Amazon and Facebook. The OEMs therefore have a great deal

of work left to do. They need new business models, strategies, products and services. To do this, they have to press ahead with their own digitization, develop new partnerships, and

always preserve the balance between the old and the new business.

"None of this is easy, and almost everything takes time," Reers said. "It is decisive that the manufacturers set the course now. The markets of the future will provide ample room for many players – but not for all of them. Those who start too late will lose out."

Sharing is becoming the new normal.



Jürgen Reers, Managing Director at Accenture



Foto: BMW

No car around here, but nonetheless, visible on the smartphone. BMW's Visualizer app is enabling the virtual car-buying experience.

The digital buying experience

The internet is changing buying behavior – and that includes car buying. Augmented and virtual reality are closing the gap between the online shop and the car dealership.

A virtual peek inside the trunk is possible with BMW's Visualizer app that allows prospective buyers to open the lid or doors of a BMW i3 or i8. "In the first tests of the app, people were bending forward as if there was a door frame they could bump into," said Andrea Castronovo, Head of Future Retail at the BMW Group. "Our cars are emotional products that you have to experience and if they are not available on-site, digital visualization provides the next best experience."

Augmented and virtual reality are making their way into the automotive sales business. The objective: seamless transition from the web to reality.

This meets the needs of the customers. According to surveys conducted by Accenture, 80 percent of buyers inform themselves on models, equipment, prices and financing options online before going to the dealer. Once at the dealer, they no longer seek help in selecting a car, but are instead looking for advice to clarify their last remaining questions. And above all: the "car-buying experience."

The brand and purchase experience are moving to center stage. Customers expect a personal approach and custom recommendations. "Online customers are changing the automotive retail and the competition," said Christina Raab, Managing Director in Accenture's Automotive practice. "Many of them want to transfer more steps of the purchasing decision to the internet, but at the same time, do not want to forego the visit to the dealership – which forces car makers to adopt multi-channel strategies." BMW's Visualizer app was created in collaboration with Accen-

ture and is based on Google's Tango technology. It makes augmented reality presentations possible not only at the dealership, but outside as well: customers can download the app and experience their "Dream BMW" anywhere, at any time.

With the app, dealers can bridge waiting times, and no longer need to have every model, every interior series or every accessory available to display features. Now, even on a smartphone,

tes the development of the multi-channel experiences that customers are seeking today."

Dealerships can also use less innovative technology to improve connecting with their customers. According to Accenture, 55 percent of car buyers would like to see more information relating to models and technology on the web. Every second buyer would like to take a virtual test drive and every third would like to communicate or chat

online with his or her dealer – many starting points to improve customer experiences and increase satisfaction. However, if anything, many dealers are still rarely visible online. They are investing little in online marketing and are hardly analyzing the user data relating to their web presence to be able to identify customer needs.



Christina Raab, Managing Director in Automotive at Accenture

Digital technologies are increasing efficiency for vehicle consultation and sales.

360-degree images convey a real-life impression. Customers can move virtually around their dream car. If they stand in front of their house, they can see how the car looks there. With the touch of a finger, they can change the paint and interior colors. They can share their car visualization with friends, or convey that information to the dealer using a screenshot.

"Customers like to take advantage of technology such as augmented reality and the prices for end devices and software are declining," said Raab. "This lowers the barriers for an integration of this technology at the dealership – and facilita-

"Digital technologies and marketing instruments are making vehicle consultation and sales more efficient and are increasing sales figures, assuming the manufacturer and the dealer have the appropriate content available," said Raab. For this reason, car makers should invest first and foremost in efficient processes for the creation and provision of digital content. On the other hand, dealerships should strengthen their own online presence and educate their sales personnel in the matter of data-driven consultation. "While new technology is important, what is crucial to the customer experience is seamless integration and outstanding content," said Raab.

Manufacturers are changing their structures to be more innovative and to get personalized products and services into the market. The availability and analysis of data plays a significant role in this process.



Foto: iStock/chombosan

Data is everywhere – how it is analyzed is becoming a key to success.

Data: Fuel for innovation

Tesla is setting the standards and not only in e-mobility. The California automobile manufacturer, established in 2003, equips its cars with a multitude of sensors, which continuously transmit data relating to their use. Tesla knows how comfortably drivers are seated, where and how they are controlling the car, which functions they use often, and which ones they use less. Malfunctions in the vehicle electronics are resolved by the automobile manufacturer overnight, and additional functions are delivered by means of software updates.

Tesla should be the role model not only because of its electric engine, but most of all because of how they handle data. In the age of digitization, even in the automotive industry, data is considered to be the fuel for innovation. To date, however, it is being underutilized in this sector. Data delivers knowledge related to driving and about the buyers – and is the basis for new technology or services.

Only about 14 percent of car buyers pay attention to engine performance, while 40 percent are looking for smart (web) services in the cockpit. Mobility is increasingly becoming a service. Having one's own car is no longer necessary to get from A to B. This is changing the business – and is forcing automotive brands to develop new strategies, structures and strengths – preferably with the aid of use and customer data. "In saturated markets, the significance of company size decreases, while customer orientation, emotional log-in and personalizing the user experience become more important," said Jens Woehlbier, Managing Director Technology Consulting at Accenture. "The ability to personalize and individualize the customer experience in relation to the car will become a decisive competitive advantage." And this is precisely what data will be used

for, explained Woehlbier. "For this reason, automobile manufacturers are investing specifically in platforms for data aggregation and analysis, and in new ways to utilize data."

For quite some time, cars have no longer been merely a means of transportation. Thanks to the processing of driving data in the electronics, they are already functioning like intelligent co-pilots. This development will culminate in the "experience" of the autonomous vehicle – in a car that is moved by users by means of voice inputs and that, as a learning machine, adapts to

Concepts for developing new business from data are frequently still missing.



Jens Woehlbier,
Managing Director Technology
Consulting at Accenture

preferences and habits with the aid of artificial intelligence. For this reason, ever more automobile manufacturers are networking in other industrial sectors, in part even with the competition. They are investing in data technology or mobility service providers and are cooperating with internet companies. This is how Daimler built the Moovel platform – together with BMW and Audi, the company from Stuttgart acquired the data service. "All of these deals involve data for personalized customer experiences," said Woehlbier. "With them, manufacturers can direct their development activities toward people and design products for individual needs. The customer experience encompasses the

physical product and the digital services associated with the brand." Proprietary services are already being established with the new partners. Apps for organizing and booking trips, new rental and sharing concepts, as well as online emergency assistance in cases of damage. Identifiable concepts, developing new business from data and making money with them, however, are often still lacking.

The automotive sector is in the process of re-learning. In the future, its success will depend not only on cars, but also on savvy services. An innovation and service mentality is evolving out of the

engineering approach to thinking. On one hand, information technology helps to speed up processes. On the other hand, it supports cooperation and communication. In the future, when automobile manufacturers establish models and services, they will

delegate even more tasks than they do today. Daimler is already experimenting with so-called hackathons and, in a few hours over the course of these events, has experts from a wide range of fields outline service solutions or prototypes. Fiat's Mio concept car was created on the internet on open innovation and open source platforms, on which 17,000 interested people left realistic ideas that were incorporated in the study.

As these examples show, success in the automotive industry no longer relies only on technical expertise, but first and foremost on the skillful moderation of a wide variety of knowledge and insights – also known as data.



NEW ROAD AHEAD

From showroom to smartphone, next generation tech like data analytics, AI, virtual reality and IoT is taking the relationship between cars and customers to new places. Discover how to transform your customer experiences at [accenture.com/industrial](https://www.accenture.com/industrial)

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