ELECTRIC CARS:

AT THE TIPPING POINT?

Capgemini **invent**

EXECUTIVE SUMMARY

OEM investment in electric cars[1] (e-cars) has led to exciting technological breakthroughs, yet sales figures to date have been somewhat disappointing. To meet governmental expectations and ensure that the investment pays off, the industry needs to accelerate consumer take-up of e-cars.

This Cars Online Trend Study investigates why consumers are currently hesitant about purchasing e-cars. Barriers include the following:
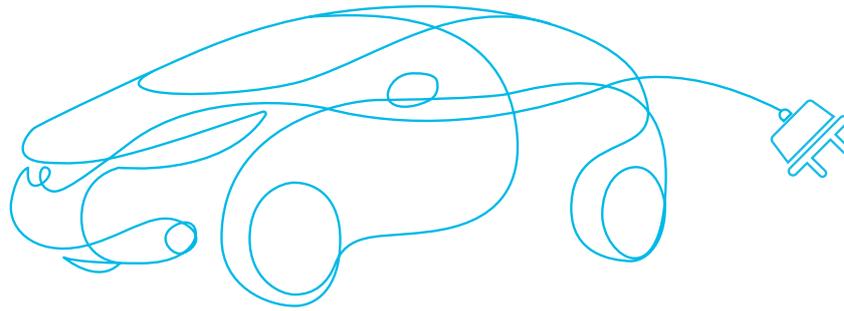
- Consumers encounter widespread difficulties in finding information about topics that are important to them, such as batteries and charging options.

- Dealers sometimes encourage customers to buy internal combustion engine (ICE) cars rather than electric ones, partly because margins on selling and servicing ICE cars are higher, but also because the dealers themselves lack key information.

- If a customer does buy an e-car, problems may arise because there is no single source of information or services to support the use of that car — for example, when it comes to maintenance of home charging equipment, it is not always clear who is responsible for what.

OEMs need to work closely with retailers to remove these barriers. OEMs can bridge information gaps by providing both consumers and dealers with interactive tools and responsive contact centers. OEMs and dealers together need to ensure that the dealers are adequately incentivized and equipped to sell e-cars. The OEMs and retailers need to adopt a shared holistic view of the e-car customer lifecycle that results in a comprehensive and coherent offer to consumers.

It all adds up to a radically new approach enabling the industry to respond to this step-change in the market. With a concerted effort like this, automotive OEMs can ensure that sales grow at the desired pace, see off competition from other industries, and achieve levels of customer intimacy that open up completely new opportunities.

1 With "electric cars" we mean all types of plug-in electric passenger cars.

INTRODUCTION:

THE CHALLENGE OF ACCELERATING TAKE-UP

The demise of the internal combustion engine (ICE) and the rise of electric cars (e-cars) have been predicted for many years. While the first e-cars were produced almost a century ago, it is only in the past 10 years that the technology has become a viable alternative. Consumers globally are becoming more aware of the environmental impact of ICE cars. CO_2 regulations in the US, Europe, and China, along with other legislation, are exerting pressure on the automotive industry to offer multiple 100% e-cars as real options for consumers.

The industry has already come a long way, with e-cars in most OEM portfolios, and more electric cars sold each year. Several premium OEMs have stated that, according to their plans, e-cars should comprise 25% of the total sold in 2025. However, during 2018 only around two million of the 82 million cars expected to be sold around the world are likely to be e-cars. Penetration varies greatly depending on the size and maturity of the market, government incentives, and the national regulatory environment. For example, e-cars are expected to account for up to 60% of new car sales in Norway in 2018, but under 1% in some other countries.

Globally, there is widespread acknowledgement that the uptake of e-cars is happening more slowly than was forecast, and this is causing justified concern. It is in the OEMs' interest to accelerate take-up, in order both to meet governmental expectations and to ensure that sales match production planning forecasts. Most importantly, it is in the consumers' interest to make it easier to buy, charge, and service e-cars.

Capgemini has therefore undertaken research to find out why consumers are not purchasing e-cars in greater numbers, and to learn what the industry needs to do to accelerate sales. In September 2018, we conducted a survey on this topic (see panel). Our present report draws on that survey, together with the views of industry experts, and observations from Capgemini's consulting experience. This report is one of a series of trend studies complementing our full Cars Online study, produced every two years.

With sales of ICE cars affected by developments such as more stringent emission standards in the EU and widespread bans on diesel, it is vital that OEM investment in e-cars pays off. This report provides pointers to help the industry make sure that happens.

Method

A total of 762 participants responded to our online survey, comprising 256 from the US, 255 from China, and 251 from Germany. All participants demonstrated a serious interest in purchasing e-cars, with 54 already owning or financing one and the remainder contemplating a purchase in the near future. Participants answered a 10-minute online quantitative survey covering topics such as barriers to ownership of e-cars, level of knowledge about e-cars and associated areas, sources likely to be used to obtain information on these, probable purchase channels, and expected use of e-cars and charging equipment.

FINDINGS:

THE VOICE OF THE CUSTOMER

Interest phase: information gaps to fill

Before undertaking a major purchase such as that of a car, consumers need to feel sufficiently informed. It is therefore troubling to note that only 47% of our participants feel well informed about e-cars, and only 9% feel very well informed.

Figure 1 highlights specific areas where consumers feel that they are less well informed, while Figure 2 shows areas where they feel in need of information prior to making a purchase. The striking contrast between the importance consumers give to information (88–96%) and their level of knowledge (30–50%) shows that the industry is falling short of consumer expectations in general. In addition, the areas where consumers feel least informed are often those where they say that information is most important to them, namely e-car batteries and the availability of charging equipment – compare Figure 1 and Figure 2.

This lack of information should concern the industry because interested consumers may well change their buying intention and stay with ICE cars if they fail to obtain necessary information in key areas. "Range anxiety" – the fear that the e-car will run out of power mid-journey – can be a major deterrent for consumers, for example in the US, where consumers are strongly focused on convenience.

Part of the problem is that dealers cannot always easily access information about these topics. This not only means that they struggle to answer customers' questions, but also adds to the temptation to nudge customers in the direction of ICE cars, which they know much better (and which also take less time to sell and bring higher margins on both sales and service).

Although participants tell us that dealers are among the channels they want to use for gathering information about e-cars, they aren't the only source, or even the preferred one, for many consumers in this early phase. Search engines and OEM home pages are becoming popular sources, as are online communities, video-sharing websites, and other third-party websites.

While this picture does not differ much from what we know about channel preferences for ICE cars, the content that needs to be available in those channels is very different in the case of e-cars. The responses shown in Figure 2 provide pointers as to what information OEMs and dealers need to prioritize in order to make consumers feel more confident about buying e-cars.

Difficulty in obtaining information about e-cars and complementary products and services (especially batteries and charging) is certain to create "fear, uncertainty, and doubt" (FUD) among consumers. OEMs urgently need to address the current lack of information, especially, though not only, in the interest phase, as we discuss in the Implications chapter of this report.

"One major concern that Chinese customers are facing is the trade-in value, for which we as manufacturers need to provide an answer."

Sales Regional Manager, East (Shanghai, Zhejiang, Jiangsu provinces), BAIC

"Having the Chevrolet Bolt EV with a 238-mile range was a huge step forward in reducing people's range anxiety. The next thing they have is charge anxiety. So when I do need to charge, is there going to be infrastructure?"
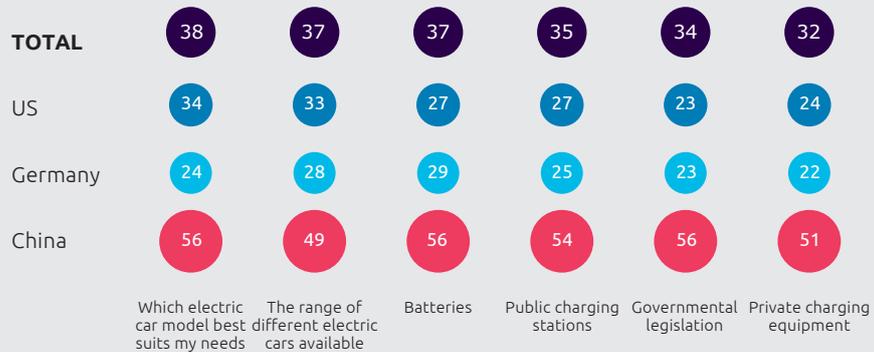
Mary Barra, CEO, GM

FIGURE 1: Level of knowledge about specific aspects of electric cars – very well informed and well informed

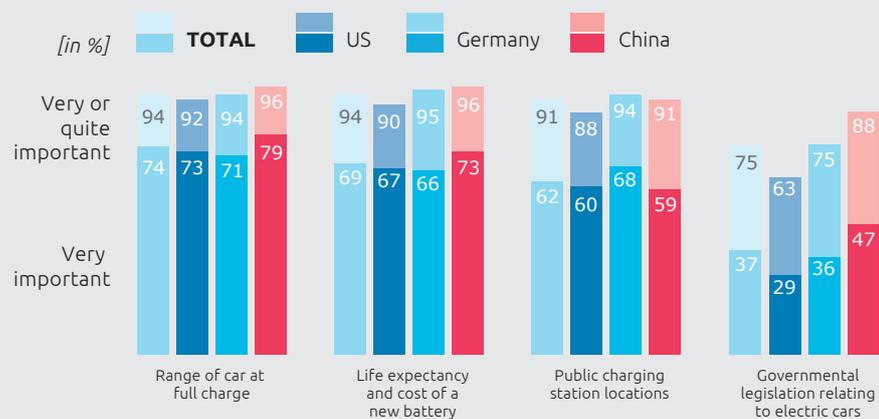How well informed do you feel about the following with regards to electric cars?

[in %]

	Which electric car model best suits my needs	The range of different electric cars available	Batteries	Public charging stations	Governmental legislation	Private charging equipment
TOTAL	38	37	37	35	34	32
US	34	33	27	27	23	24
Germany	24	28	29	25	23	22
China	56	49	56	54	56	51

FIGURE 2: Importance of obtaining information prior to purchase of an electric car

Intenders: How important is it to you to find out the following before acquiring an electric car? / Owners: How important was it to you to find out the following before acquiring your electric car?

[in %] **TOTAL** · US · Germany · China

	Range of car at full charge				Life expectancy and cost of a new battery				Public charging station locations				Governmental legislation relating to electric cars			
	TOTAL	US	Germany	China	TOTAL	US	Germany	China	TOTAL	US	Germany	China	TOTAL	US	Germany	China
Very or quite important	94	92	94	96	94	90	95	96	91	88	94	91	75	63	75	88
Very important	74	73	71	79	69	67	66	73	62	60	68	59	37	29	36	47

Purchase phase: new selling tools and techniques required

Our survey suggests that information gaps persist into the purchase phase. Even though all our participants already own or are planning to buy an e-car, they have continuing concerns about various aspects of these cars (Figure 3). These concerns are likely to have a significant impact during the purchase or re-purchase phase.

Particularly noticeable in Figure 3 is the high prevalence of concerns regarding charging and batteries, with around 75–80% of participants naming the various issues in this area as big or very big concerns. As we have seen, consumers regard such issues as very important but feel they do not know enough about them. Lack of relevant information will undoubtedly constitute a significant obstacle to closing sales, or may shift consumers back towards the safer option of buying an ICE car.

It's worth noting that charging issues are again prominent when consumers deliberate about which brand or model of e-car to buy (Figure 4). Unless OEMs educate consumers about these topics, they are unlikely to purchase an e-car.

Although brand is a relatively unimportant factor for e-cars, it could become a differentiator if one brand emerges as a leader in this area – or if one brand, such as Tesla, becomes exceptionally good at supporting consumers with information and reassurance through the customer lifecycle. New entrants have the potential to differentiate themselves positively with better information provision via digital channels. This point is especially relevant in China, where local e-brands are of great interest to our participants.

These findings suggest that in the purchase phase, lack of information remains a major barrier to buying e-cars. The problem relates not only to information about the cars themselves but also to information about associated products and services.

We saw earlier that consumers often prefer online information sources during the interest phase; in contrast, consumers who are getting close to the point of purchasing are increasingly likely to look to retailers for the detailed information they need. When asked what channel they would use to purchase an e-car, 79% overall mention dealers, even though a significant minority say they might buy online – either through an online retail store or directly from an OEM.

It is vital therefore that dealers be equipped and motivated to answer customers' questions, and share the full value proposition to ensure that they fully consider e-cars. If e-car information is not readily available, it is possible that retailers may revert to selling ICE cars because they know the traditional products better and may prefer an easier and more profitable transaction.

Evidently, it is not as easy as it should be for consumers who want to purchase e-cars to do so. Improving this situation will require a concerted effort by OEMs and retailers, as we will discuss in the *Implications* chapter.

"Dealers will play a key role in enabling customer-ready solutions around the electric car."

Dr. Johannes Eckstein, Senior Manager Electrification / e-tron solutions, Audi AG
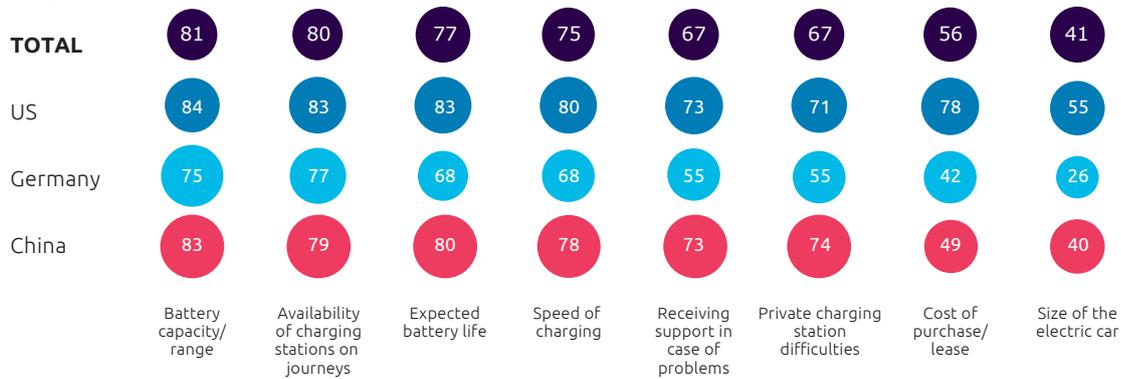
FIGURE 3: Concerns with regards to electric cars

What concerns do you have, if any, about owning an electric car? Please rate the following in terms of how much of a concern they are for you.
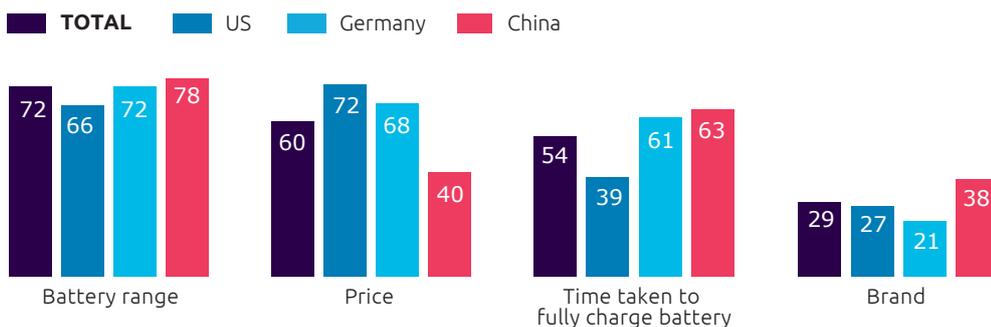
[in %]

	Battery capacity/ range	Availability of charging stations on journeys	Expected battery life	Speed of charging	Receiving support in case of problems	Private charging station difficulties	Cost of purchase/ lease	Size of the electric car
TOTAL	81	80	77	75	67	67	56	41
US	84	83	83	80	73	71	78	55
Germany	75	77	68	68	55	55	42	26
China	83	79	80	78	73	74	49	40

Source: Capgemini Invent, Cars Online Trend Study, November 2018

FIGURE 4: Key factors when deciding which electric car to buy

Intenders: Thinking about choosing which electric car to acquire, please rank the following in terms of how important they are in your decision-making process. / Owners: Thinking about when you were deciding which electric car to acquire, please rank the following in terms of how important they were when making your decision.

[in %]

■ **TOTAL** ■ US ■ Germany ■ China

	Battery range	Price	Time taken to fully charge battery	Brand
TOTAL	72	60	54	29
US	66	72	39	27
Germany	72	68	61	21
China	78	40	63	38

Source: Capgemini Invent, Cars Online Trend Study, November 2018

Ownership phase: emerging opportunities for the industry

As we have seen, charging is a major concern for consumers. The ability to charge when needed can make the difference between a dissatisfied customer and one who is so pleased that they become an ambassador for the brand.

In our survey, we investigated consumers' preferences for different charging locations and mechanisms. Despite some variation between markets, home charging is considered the most important everywhere (Figure 5).

At present, dealers usually sell the charging equipment as a separate aftersales service, and installation is usually performed by subcontractors. Currently, most OEMs have no involvement in selling or installing charging equipment. In most cases, neither the charging equipment nor the installation service carries the OEM brand.

This is an area in which automotive OEMs seem to be failing to meet consumer expectations. As many as 40% of participants told us that they expect to be able to purchase private charging stations together with their car, and 39% expect the stations to be installed by the OEM. Buying them separately can cause unwelcome complications. For example, if a consumer has a problem arising from either installation or operation of a home charging station, they will not know who to call – the OEM, the retailer, the provider of the charging station, the installer, or the utility company.

When it comes to the question of where and when to charge an e-car, there are various options. As well as charging at home – whether overnight, during the evening, or over the weekend – consumers could also charge their cars at work, or use public charging stations. Markets differ in their preferences. As Figure 5 shows, US consumers show relatively high levels of interest in home charging, German consumers in public charging stations, and Chinese consumers in charging their cars at work.

Overall, these findings suggest high levels of uncertainty as to the best charging solution. Consumers are unsure not only about where and when they will charge their cars, but also about the most suitable technology – as Figure 6 shows, 21% are unsure what charging mechanism they would use, rising to 32% in the US. These results suggest that either participants aren't familiar with the different charging options (slow, fast, and high performance charging) or else they can't yet anticipate how they will want to charge their cars.

Some confusion may surround the topic of rapid charging (also known as high performance charging) in particular. German, and to a lesser extent Chinese, participants are very interested in it – perhaps to an unrealistic degree given that these chargers are relatively rare, with the number constrained by infrastructure considerations. Other than Tesla-specific stations, there are not many rapid chargers in Germany yet. US participants meanwhile show a higher-than-average level of interest in fast charging. However, if consumers do want to charge mostly at home, as indicated in Figure 5, then they do not really need rapid charging – particularly as many participants indicate they will usually charge their cars overnight.

When it comes to charging-related software, our survey indicates a strong appetite for smart charging solutions, particularly apps that find and navigate to the nearest charge spots. The interest levels for other app features are very similar to one another, suggesting a lack of detailed information about the possible options. However, the generally healthy levels of interest – with at least 70% interested in all the types of smart charging station technology we proposed – point to an opportunity for OEMs and/or dealers to differentiate by creating and selling additional products and services.

The inconsistencies in the responses about charging options, location, and time may, as we have seen, reflect a lack of information, and perhaps of detailed thinking about how the car will be used. Yet charging is a make-or-break issue for consumers, throughout the lifecycle, but particularly in the ownership phase.
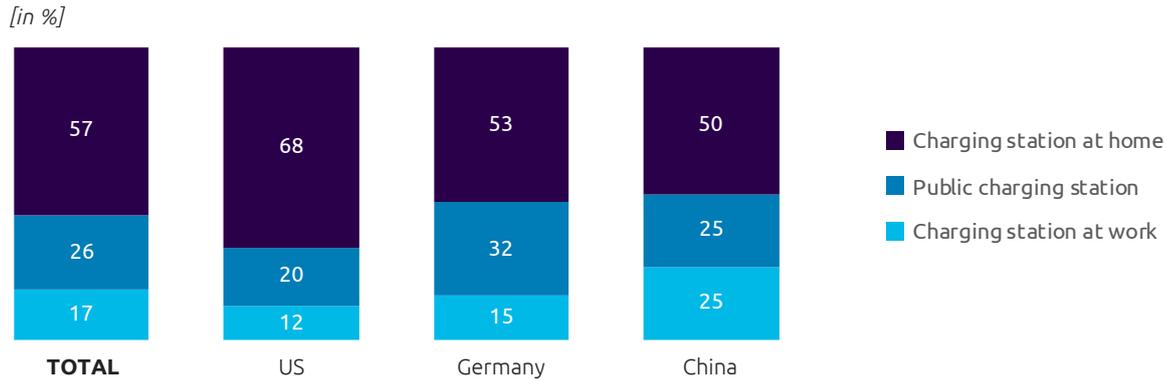
To bridge the gap between what consumers want and what they currently have, OEMs and dealers need to join forces to offer comprehensive services that support all consumer needs at each phase of the lifecycle. We'll discuss this idea in more depth in the *Implications* chapter.

"We need to think ahead and provide aftersales solutions, taking into account the trade-in value that determines our customers' total cost of ownership."

Sales Regional Manager, East (Shanghai, Zhejiang, Jiangsu provinces), BAIC

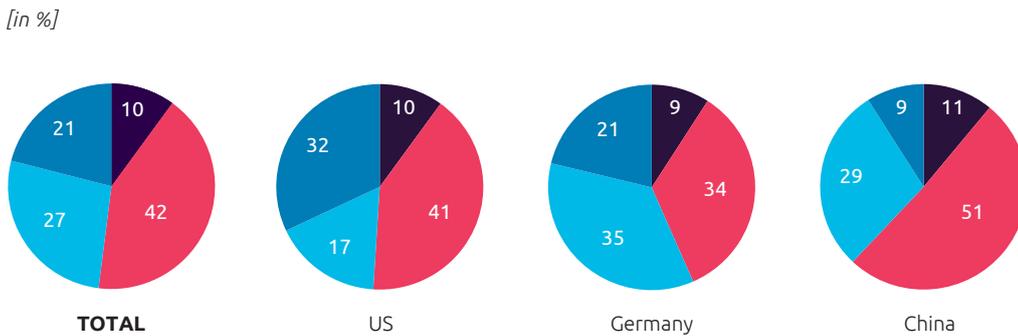**FIGURE 5: How consumers expect to charge their electric cars**

Intenders: Thinking about charging your electric car, typically how often do you think you will use the following charging methods. / Owners: Thinking about charging your electric car, typically how often do you use the following charging methods?

[in %]

- Charging station at home
- Public charging station
- Charging station at work

	TOTAL	US	Germany	China
Charging station at home	57	68	53	50
Public charging station	26	20	32	25
Charging station at work	17	12	15	25

Source: Capgemini Invent, Cars Online Trend Study, November 2018

FIGURE 6: Charge options consumers expect to use to charge their electric cars

Intenders: Which charging types do you intend to primarily use with your electric car? / Owners: Which charging types do you primarily use with your electric car?

[in %]

	TOTAL	US	Germany	China
Slow charge	10	10	9	11
Fast charge	42	41	34	51
Rapid charge	27	17	35	29
Unsure	21	32	21	9

- Slow charge (around 6–12 hours charging time)
- Fast charge (around 3–4 hours charging time)
- Rapid charge (around 30 min charging time)
- Unsure

Source: Capgemini Invent, Cars Online Trend Study, November 2018

IMPLICATIONS:

RETHINKING THE BUSINESS MODEL AROUND E-CARS

Summary of findings

Throughout the customer lifecycle, but particularly in the **interest phase**, many consumers feel inadequately informed about areas that are important to them, especially charging and batteries. This lack of information, and the resulting reinforcement of negative feelings such as range anxiety, could cause them to lose interest and switch back to buying ICE cars. The information they need relates not just to the car itself but also to complementary products and services, such as charging equipment and its installation. These products and services may be provided by third parties.

In the **purchase phase**, dealers are not sufficiently equipped or incentivized to sell e-cars. Selling this type of product takes longer, not least because of the amount of information and reassurance that consumers require, and margins are lower. Even consumers with a strong interest in buying e-cars have several concerns reflecting lack of information about key aspects such as charging. In this phase, consumers are likely to expect retailers to fill the gaps. Currently, however, dealers too often struggle to answer the questions, or find that it takes too long to locate the necessary information.

During **ownership**, the provision of information, products, and services is too fragmented, resulting in confusion for consumers. In particular, a great deal of uncertainty regarding charging currently exists in consumers' minds. This includes uncertainty about where and when they will charge the cars – though there is a preference for doing so at home and overnight – and also about what type of charging equipment they will use. If these questions are not resolved before the ownership phase, major consumer dissatisfaction on the part of early adopters could result – and that could have dire consequences for the future of the market.

"As this is a new technology, customer decisions about e-cars are dominated by functionality, and especially by reach. We have to show customers how they can use e-cars in their daily lives, and in doing so, shape the brand for e-cars."

Manager Digital Transformation, Online Sales, premium OEM

Capgemini perspective: a three-point plan for accelerating take-up

We believe the industry needs to address three main areas in order to remove the barriers to purchases of e-cars.

1. **OEMs need to provide better information to consumers, at the right place and time and in the right format. This is particularly true in the interest phase.**

OEMs urgently need to address the lack of information reported by consumers to ensure that individuals with an interest in e-cars are not put off at an early stage. Since many consumers want to inform themselves independently before contacting a retailer, self-service and interactive tools are important. For example, OEMs could consider providing:

- Comprehensive FAQs embedded in end-to-end user journeys to provide consumers with didactically compiled solutions in the form of stories
- Fully integrated home check in the interest phase to provide the individual consumer with the information if the installation is possible at home and at what costs
- A TCO calculator to help consumers compare electric and ICE cars (this may be particularly important in the US and Germany, where participants tell us that lower cost of ownership is an important consideration when considering e-cars)
- A range calculator to help consumers understand whether and how e-cars could meet their needs under different assumptions about models, travel routines, and charging arrangements
- A configurator that takes into account not only the consumer's e-car feature preferences, but also their driving patterns and home characteristics (e.g. garage versus outdoor parking, journey distances, proximity to charging points) that might constrain a purchase.

The aim should be to use automation to make the customer experience feel more personal by tailoring online responses based on user-provided data. OEMs' contact center staff must be trained and equipped to answer consumer questions about e-cars promptly and accurately, and cognizant of the fact that the consumers they are talking to will often be reluctant to reveal their lack of knowledge about e-cars.

Dealers will need similar tools to those provided for consumers, or more sophisticated versions of them. There will have to be mechanisms whereby information put into online tools or given to contact centers by consumers can optionally be passed along to dealers to avoid the need to type or state the same information twice. Trained and well-informed retail staff will be more comfortable with e-cars and hence more persuasive in selling them, in contrast with the current situation where staff who are uncertain about them may nudge consumers towards ICE cars.

Clearly, both OEMs and retailers will need to keep a close eye across channels to see which consumers might need that extra push to take a test drive or visit a store, and determine the best timing for these interactions.

"When Chinese customers ask how long it will take to fully charge their e-car, the answer is not simple because there are different charging options – ideally, we'll know enough about the customers' residential situation beforehand to take it into account when advising them."

Marketing Manager in charge of Brand & Model Promotion and Events, Xiaopeng Auto

"For the e-car customer, full transparency is key. We have to show them the total cost of ownership, and how it compares with internal combustion engine cars. Demonstrating the value-add of e-cars will secure our position among the first movers who are shaping the future of the industry."

Manager Digital Transformation, Online Sales, premium OEM

2. In the purchase phase, OEMs need to better equip, incentivize, and enable dealers to sell e-cars. This requires both parties to confront the reality that selling e-cars takes longer, not least because of the amount of information and reassurance that consumers require.

OEMs and dealers need to work together to ensure that dealers are both equipped and incentivized to create the necessary enthusiasm and commitment for selling e-cars. Since retailers are in the business of selling, they need to have a good reason to sell e-cars rather than other items in their inventory. They also need convenient ways to help consumers find all the information they need to make a purchase decision.

A new model is likely to emerge in which additional revenue streams for dealers (e.g. from installing and maintaining charging equipment) motivate staff to sell e-cars. In addition, dealers will need to adopt a new sales style to sell e-cars, providing the reassurance needed to remove the fear, uncertainty, and doubt currently surrounding them. They will need to offer consumers end-to-end packages including charging devices, roadside breakdown services, etc. This is a significant change from the pattern over the past few years, where the dealer has been more focused on closing a sale with a savvy consumer. We are now back to a model where consumers have many questions needing detailed answers.

For the OEMs, it will be necessary to provide dealers with tools to make the process of supporting consumers with information and advice about e-cars as accurate and efficient as possible – for example:

- More training for the first visit
- More sophisticated versions of the tools provided to consumers in the interest phase, e.g. FAQ document, TCO calculator, range calculator, advanced configurator
- Additional contact center services to support customers
- Roadshows to help promote the cars
- A new order process that provides a comprehensive way of ordering the whole e-car package, including chargers, installation services, etc. – this will also be relevant to those consumers who prefer to purchase directly from an OEM.

This collaboration between OEMs and retailers to provide better support for purchasers of e-cars will be particularly important in the purchase phase, but will need to span the entire customer lifecycle.

"Manufacturers must build their offerings around the electric car in the context of an ecosystem. With regard to dealers, a more visionary approach to developing concepts can help to identify new business opportunities for dealerships."

Dr. Johannes Eckstein, Senior Manager Electrification / e-tron solutions, Audi AG

3. OEMs and dealers jointly need to adopt a more holistic view of the customer lifecycle, and to offer comprehensive services, especially during the ownership phase.

To satisfy the needs and wants of consumers, OEMs and dealers need to work closely together to support all consumer needs at each phase of the lifecycle, providing a one-stop shop where customers can get all the information, products, and services they need to run an e-car.

In this new holistic model, customer services will be major assets that determine customer satisfaction, particularly in the ownership phase. OEMs and dealers will need to create ecosystems to deliver all the required services; these ecosystems could embrace equipment manufacturers, local electricians, utility companies, and roadside breakdown services, among others.

Dealers, with their local knowledge and contacts, may well be best placed to identify, recruit, and manage local ecosystem members. Meanwhile, OEMs may need to provide additional services to integrate e-cars with other aspects of consumers' lives, such as smart charging features that communicate with smart home devices.

A single point of contact for all issues relating to charging would meet consumer needs better than the present fragmented picture. While some OEMs are currently looking at providing such an arrangement, there is still a considerable amount of work to be done. After all, this is unknown territory, where the OEMs may find themselves competing with specialist suppliers and installers of charging equipment, and with utility companies. On the plus side, this is an ideal opportunity to move beyond the store into the home, building greater customer knowledge. If OEMs can provide the single point of contact that consumers need, they could strengthen customer relationships and perhaps open up opportunities to offer additional services such as energy provision.

"Throwing a charger in the trunk of a vehicle and sending customers on their way isn't enough to help promote the viability of electric vehicles. In addition to expanding our electric vehicle lineup, we are redesigning the ownership experience to ensure it addresses customer pain points that currently hold back broad adoption today."

Sherif Marakby, CEO, Ford Autonomous Vehicles LLC

Source: Ford Readies North America's Freshest Lineup By 2020 With Onslaught Of Connected New Trucks, SUVs And Hybrids, Ford Media Center, March 15 2018

Expert opinion: getting past the tipping point

SEBASTIAN TSCHÖDRICH
HEAD OF AUTOMOTIVE DIGITAL
CAPGEMINI INVENT

PHILIPP MARTIN HAAF
ELECTRIC CARS EXPERT
CAPGEMINI INVENT

Philipp: In recent years, it has become obvious that electric cars, as compared to ICEs, will dominate sales in the future. Governments and cities, as well as OEMs and some of their customers, are strongly committed to making this prospect into a reality. We regularly meet clients who are optimistic about entering a new era of producing and selling electric cars.

Sebastian: Several factors are currently hampering the large-scale uptake of e-cars, however. From a strategic and organizational viewpoint, we believe OEMs have yet to find the right recipe for successful and, more importantly, profitable e-car sales. It is about selling an ecosystem and not just the car itself. In particular, we see a disconnect between OEMs, their wholesale organizations, and their dealer networks. Selling e-cars needs to become more attractive at all sales stages, but at present most of the enthusiasm is coming from OEMs. Part of the problem is that the industry is still struggling to find a sales approach that is optimal for e-cars and their potential buyers. The fact that a leading premium OEM recently aborted the agency model for its electric cars shows how challenging this can be.

Philipp: Looking into the future, we expect the automotive industry to undergo significant disruptions in its sales processes in the medium term, especially when it comes to selling large volumes of e-cars. According to Capgemini research, e-car sales will comprise more than half of all car sales by 2040 at the latest. In some growth markets, this change will happen even sooner. The growth rate for ICE cars is already slowing, while growth in e-car sales is exponential year on year. Given that sales costs are significantly higher for e-cars than ICE cars, it's clear that urgent action is needed.

Sebastian: On the one hand, this trend brings a risk for OEMs' sales organizations if they fail to adapt quickly enough. On the other hand, e-cars are connected products that open up a range of new business opportunities. Those alternative revenue streams are on the horizon, but our clients are struggling to execute the necessary preparations – for example, the creation of charging ecosystems. Looking at overseas competition, we believe it's already too late for OEMs to do all the work themselves – but it's not too late to partner with suppliers for a premium, fully fledged offering.

Philipp: The impetus for OEMs to take immediate action may come from the arrival of extra competition. We expect new market players (internet platforms, banks, energy providers, etc.) to appear and to sell e-cars through new sales channels based on totally new sales approaches. At the same time, new sales models will virtually eliminate the risk associated with e-car ownership. For example, full-service packages via flexible subscription offers could remove perceived uncertainties over trade-in value and battery exchange. The prospect of new competition may move OEMs to find their own ways of resolving consumer doubts.

Sebastian: To ensure the new sales models are tailored to customer needs, it will be key to monetize connected car data and create a great connected mobility experience, while increasing customer proximity. In combination with, for instance, smart home energy management systems, we are seeing the emergence of exciting new business models. With the e-car, OEMs can move from the garage into consumers' living rooms. The question is, what is the fastest way to get there?

The future is electric

There's no doubt that the future is electric. Sales of e-cars will grow whatever happens, but the key challenge is to make them grow at the rate that governments mandate, and that the industry needs for profitability.

Above, we have outlined three major changes that Capgemini believes the industry needs to make, but as yet we do not see much evidence of these changes happening. Unless OEMs start to take action in these three areas, we predict continued slow growth, which is not in anyone's interest.
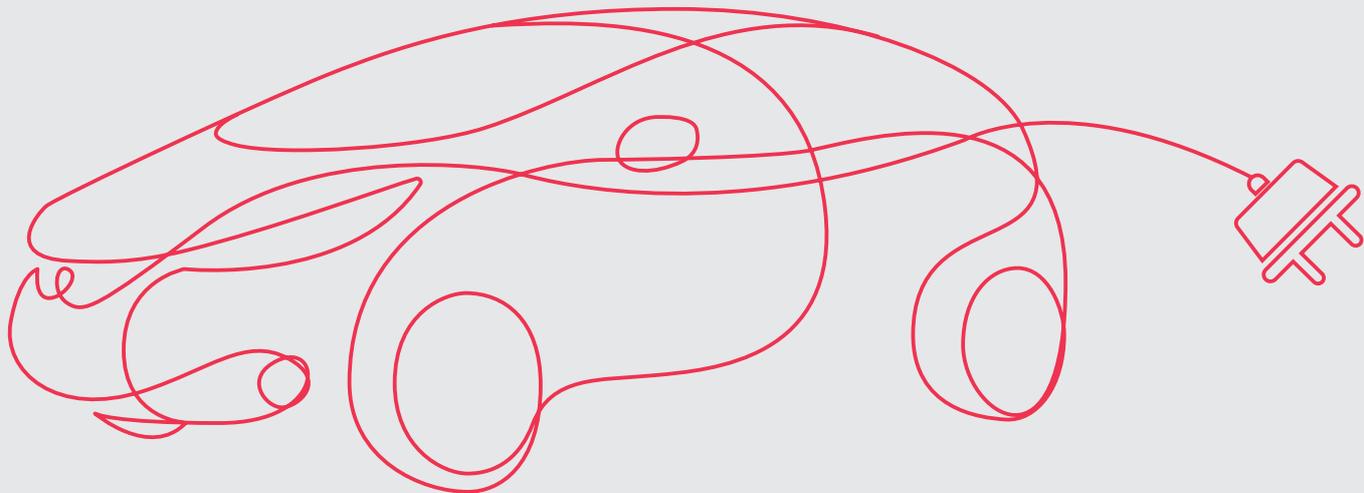
Above all, the industry must give consumers what they want, or the competition – either rival OEMs or new entrants from other industries – will find a way to do so.

The reward will be not only the ability to sell more e-cars, but also an opportunity to go beyond the garage and into the home, building greater customer intimacy and perhaps entering new markets by taking over other aspects of service provision such as power management and related digital services.

"Once manufacturers understand the importance of a comprehensive customer service around the electric car, they can create brand values that extend far beyond the product."

Dr. Johannes Eckstein, Senior Manager Electrification / e-tron solutions, Audi

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