ACES 2019 survey: Can established auto manufacturers meet customer expectations for ACES?

Consumers believe that established automakers are well positioned to capitalize on ACES trends. Will they reach their full potential in a challenging market?

by Kersten Heineke, Daniel Holland-Letz, Matthias Kässer, Benedikt Kloss, and Thibaut Müller
Four disruptions—Autonomous driving, Connected cars, Electrified vehicles, and Shared mobility—have become the hottest topics in the automotive industry in recent years. McKinsey’s 2019 ACES survey, which examined consumer mobility preferences worldwide, revealed that customers believe traditional OEMs are well qualified to drive innovation in these areas. That finding marks a big departure from previous surveys, where consumers stated that established OEMs lagged behind their Asian counterparts and start-ups in pursuing ACES trends.

Can established automakers truly gain the upper hand in the game of ACES? To answer this question, we took a close look at the 2019 survey results, including country-specific findings. Our analysis revealed that traditional OEMs are well positioned to become leaders in ACES because consumers have faith in their capabilities, particularly in Western markets. But all companies, including traditional OEMs, may encounter several challenges that could limit their gains from ACES.

The ACES survey
McKinsey’s 2019 ACES survey highlighted the urgency and importance of pursuing ACES trends. It involved more than 7,000 respondents in seven countries (China, France, Germany, India, Japan, the United Kingdom, and the United States) (Exhibit 1). These locations account for approximately two-thirds of annual global new car sales.

Our survey included more than 70 questions about ACES trends. It was designed to allow numerous data cuts, including those for city type, gender, age, level of education, and income.

Customers trust traditional OEMs to succeed in ACES
In our 2018 survey, younger Chinese consumers were the most enthusiastic about ACES trends. This year, the survey revealed that Western customers are now more willing to explore ACES than in the past. Western customers also expressed a higher degree of trust that OEMs could deliver ACES capabilities.

Across countries, consumers valued safety more than any other vehicle feature, with 53 percent of respondents citing a desire for higher safety standards as their primary reason for wanting to replace an old car. A desire for a lower total cost of ownership came in second. Vehicle performance and design carried the least weight in the decision to purchase a new car—a finding that might force OEMs to focus on other differentiating features in the future.

Our survey results suggest that established OEMs may have an advantage as ACES trends accelerate because customers view them favorably. For instance, 66 percent of respondents stated that...
established OEMs are the most likely to bring fully mature—and therefore safe—autonomous vehicles (AVs) to market. There was little variation across countries in this sentiment. Other important findings that suggest OEMs may have an advantage with ACES include the following:

— **Autonomous driving.** Customer perceptions will help established OEMs over the long run, especially in Europe and the United States. For example, 43 percent of German consumers stated that they would prefer to buy an AV from their traditional premium OEMs, which was much higher than the 25 percent who wanted to purchase from companies that specialized in self-driving cars and the 10 percent who wanted to buy from those associated with high-tech giants. The main regional difference can be seen in Japan, where only 6 percent of respondents stated that they trusted specialist self-driving companies but 80 percent trusted traditional OEMs. Americans were half as likely as Chinese or Indian respondents to state that they would trade in their cars for an AV. This finding means that some of the established OEMs, which are currently lagging behind in developing autonomous-driving technology, might have time to catch up and change customer perceptions before AVs become more common. This trust advantage for traditional OEMs is also present in China and India, albeit to a lesser extent.

— **Connectivity.** Consumers in the United States typically prioritize connectivity less than those in Asia. While most Chinese consumers (61 percent) stated that they would switch car brands to achieve better connectivity, only 18 percent of Germans would (Exhibit 2). The number of Americans and French willing to make the switch for better connectivity was also relatively low (28 percent in both markets).

**Exhibit 2**

**The percentage of consumers willing to switch car brands to obtain better connectivity varies by country.**

**Willingness to change brand to achieve better connectivity**

<table>
<thead>
<tr>
<th>Over time, % of respondents¹</th>
<th>By country, % of respondents from 2019 survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>China</td>
</tr>
<tr>
<td></td>
<td>India</td>
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<tr>
<td></td>
<td>Italy</td>
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<td></td>
<td>France</td>
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<td></td>
<td>US</td>
</tr>
<tr>
<td></td>
<td>Germany</td>
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<td></td>
<td>Japan</td>
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</table>

¹Average of China, Germany, and US, to keep comparability with historical results.

Electric vehicles (EVs). When Americans contemplate an EV purchase, they are 2.5 times more likely to prefer dealing with a traditional OEM over a specialized EV manufacturer. Ironically, however, many US respondents said the latter lead in developing EVs while established OEMs are losing ground.

Shared mobility. Even if robo-taxis—driverless, on-demand cars—become commonplace and affordable, 70 percent of Germans and 76 percent of Americans want to keep their private cars.

Despite the encouraging survey findings, traditional OEMs still face some headwinds
While consumers believe traditional OEMs have ACES capabilities, they did express some concerns. For instance, our survey found that two-thirds of respondents trusted traditional OEMs—both premium and mass market—to provide vehicles with autonomous features. However, only 43 percent of global respondents stated that traditional OEMs were the leaders in AV development—a drop of 13 percent since 2017. The majority believed that most AV innovation came from “young or rising” car companies or big high-tech players.

Our survey suggests that all automakers, including traditional OEMs, must address consumer concerns about ACES trends. Some customers think that AVs and EVs are too expensive. Others believe that EV range is too limited, or express doubts about abandoning private-vehicle ownership in favor of shared mobility. There are also major questions about the future of ACES in China—the world’s largest automotive market and one in which consumers have exceedingly high expectations.

Price pressure for EVs and AVs
Over 70 percent of German respondents believe EVs will lessen transportation’s impact on the environment, but fewer than 20 percent would pay a premium for them. This finding also holds true in the global market. For battery electric vehicles (BEVs), only 16 percent of respondents were willing to pay a premium over the price for a vehicle with an internal combustion engine (ICE) (Exhibit 3). Of this group, only 9 percent were willing to pay a premium of 16 percent or more. These findings indicate OEMs may potentially face intense price pressure when bringing BEVs to market.

As with EVs, our survey suggests that AVs may also experience greater price pressure in the future.

Additional electric-vehicle pain points
Beyond price, EVs face other challenges. The top concern relates to vehicle range, even in countries where average driving time is limited. In the United States, for instance, more than one-third of Americans drive fewer than five hours a week, but survey respondents were still worried about range. Charging procedures, including access to charging stations and long charging times, may also deter EV buyers. In consequence, there is a large gap between the number of consumers seriously considering a BEV as their next vehicle and the number with concrete plans to buy one (Exhibit 4). Consider Germany, where about one-third of respondents said they would seriously consider a BEV purchase, but only 5 percent had plans to buy one. The largest discrepancy is found in Japan, where 30 percent of respondents were considering a BEV purchase, but only 10 percent had concrete purchase plans.

Shared mobility
Shared mobility is growing worldwide. For instance, more than 20 percent of German respondents stated that they used car sharing and e-hailing services, which represents a doubling in the past three years.

According to our survey, about 42 percent of consumers would opt for public transportation if shared-mobility solutions were not available, while 2 percent would not take the planned trip (Exhibit 5). These findings suggest that
shared mobility will increase road traffic, since it cannibalizes public transit. That said, it may take years before a significant number of people give up their private cars—the core business for OEMs—and rely entirely on shared-mobility solutions, including autonomous ride-hailing services. Although such services are significantly cheaper than private-car ownership, consumers want to be reassured of a guaranteed pickup—something that may not be possible over the short to medium term.

China
The important Chinese market will not present an easy win for traditional OEMs. Consider some of the most important challenges:

— Data monetization will be difficult. Although 49 percent of Chinese consumers were willing to share their data with big Chinese conglomerates, only 17 percent stated that they would provide this information to their car manufacturers, which are mainly Western.

— As noted earlier, 61 percent of Chinese consumers would switch to a new car brand if it offered better connectivity features.

— Shared mobility may gain traction more rapidly in China. Young Chinese are 20 times more likely to trade in their cars for a chauffeur service today than are those who are over 50 years old.
— With EVs, premium and mass-market OEMs are still viewed as the best option for purchase, but they may have difficulty retaining their top position. According to our survey, consumer trust in premium OEMs that sell EVs declined by 25 percent from 2017. Meanwhile, trust in non-automotive technology players that sell EVs increased fivefold.

Exploring other ACES findings
In addition to the findings previously discussed, our survey generated a wealth of other insights on ACES trends. For example, it suggests that OEMs should consider establishing their EV dealership networks in suburban areas, where consumer demand for EVs is highest. Other insights include the following.

**Autonomous driving**
Two-thirds of respondents would switch from their current automotive brand to another if it offered better AV driving functionalities. Globally, a third expressed interest in trading in their conventional cars for AVs. In another positive finding, 47 percent said AVs will increase road safety and reduce accidents, while 45 percent trusted OEMs and authorities to make AVs safe. Overall, premium OEMs are losing ground in terms of perceived leadership in autonomous functionalities.

Exhibit 4

There is a gap between consumers who would seriously consider the purchase of a battery electric vehicle and those with concrete purchase plans.

**Stages of purchase for battery electric vehicles,\(^1\) % of respondents**

<table>
<thead>
<tr>
<th></th>
<th>India</th>
<th>China</th>
<th>Italy</th>
<th>France</th>
<th>US</th>
<th>Germany</th>
<th>Japan</th>
<th>Global</th>
</tr>
</thead>
<tbody>
<tr>
<td>Awareness</td>
<td>88</td>
<td>97</td>
<td>95</td>
<td>95</td>
<td>96</td>
<td>93</td>
<td>85</td>
<td>92</td>
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<tr>
<td>Familiarity</td>
<td>62</td>
<td>68</td>
<td>57</td>
<td>63</td>
<td>57</td>
<td>58</td>
<td>44</td>
<td>59</td>
</tr>
<tr>
<td>Serious</td>
<td>59</td>
<td>60</td>
<td>44</td>
<td>34</td>
<td>33</td>
<td>33</td>
<td>30</td>
<td>42</td>
</tr>
<tr>
<td>consideration</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Concrete plan</td>
<td>24</td>
<td>18</td>
<td>11</td>
<td>8</td>
<td>6</td>
<td>5</td>
<td>3</td>
<td>11</td>
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<tr>
<td>to purchase</td>
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\(^1\)Self-rated in survey.
Source: McKinsey ACES Consumer Survey, 2019

There is a gap between consumers who would seriously consider the purchase of a battery electric vehicle and those with concrete purchase plans.
Some interesting regional variations emerged about AV attitudes. For instance, 43 percent of consumers in France said they would feel good about family members using fully autonomous cars, as did 46 percent of Italian consumers. In both Germany and the United States, however, only 36 percent of consumers expressed a similar sentiment.

**Connectivity**

Connectivity features were most important to consumers in China, India, and Italy, in that order. For instance, 93 percent of Chinese respondents stated that gesture control, voice assistance, and emotion recognition was important, as did 88 percent of Indian respondents and 69 percent of Italian respondents.

**Electrification**

Rural consumers are the most reluctant to pay a premium for EVs. In France, for example, 49 percent of rural survey respondents stated that they were primarily concerned about price when buying a new car, compared with 29 percent of respondents in densely populated cities and 36 percent of respondents in suburban cities. These attitudes could keep EVs concentrated in cities.

**Shared mobility**

Most respondents in our survey still used either private vehicles or public transportation. In the United States, which has the highest rate of car commuting, 70 percent of respondents stated that they drove to work, suggesting that employers will need to maintain company parking lots for some time.

Our survey clearly indicated that consumers were open to shared mobility, however. Overall, 53 percent of respondents stated that they would be interested in giving up their cars if an autonomous taxi-driving service were available. Respondents from India were most open to shared mobility, with only
22 percent stating that they would keep their car under these circumstances. Globally, only 6 percent of respondents stated that they would move to autonomous taxis and give up their cars if the costs were higher than those associated with vehicle ownership.

As the ACES disruptions continue to transform the automotive industry, players—both established incumbents and new entrants—need to understand and anticipate the evolving competitive landscape. McKinsey’s 2019 ACES survey substantiates the growing impact of these trends globally and reveals the changing perceptions of consumers, confirming that these trends are not fads. Western OEMs have been strategically astute in preparing for them.

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