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McKinsey China Auto Consumer Insights 2023

The time of the smart electric vehicle.

About the survey

From Q4 2022 to Q1 2023, we surveyed approximately 2,400 auto buyers in 19 major cities across China representing a range of demographic attributes, such as age, income, type of cars already owned, and so on. The goal of the survey was to establish a better understanding of buyer behavior as well as overall attitudes toward automobiles, with the aim of developing insights that automotive OEMs could use when crafting their strategies to meet changing consumer demand. Survey questions addressed major touchpoints along the customer journey, including product, channel preferences, pricing, brand loyalty, the car-use experience, and after-sales behavior; they also addressed consumers' attitudes toward emerging trends in China's auto market, such as electric-vehicle acceptance, smart vehicles, low-carbon cars, and more.

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Executive summary

Four major trends—autonomous driving, connectivity, electrification, and shared mobility (ACES)—are transforming the automotive industry worldwide. Within China, these changes are having a dramatic impact on consumer preferences for vehicles. These changing preferences, in turn, could reshape the country's automotive market over the next five to ten years. To gain more insight about the consumer perspectives in this critical market, we conducted the McKinsey China Auto Consumer Insights 2023 survey. Six major insights emerged:

1. **Trading up continues to be popular, but some consumers are making more rational choices about their next car purchase.** High-priced models continued to increase their market share because, as shown in our survey, more than half of Chinese consumers are interested in vehicle trade-ups. At the same time, an increasing number of consumers are making more rational choices because OEMs have introduced many cost-effective models with high-quality features, giving buyers more options with better overall value.
2. **Multinational brands no longer command premium prices, and changes in the overall brand landscape are accelerating.** Chinese consumers have long been willing to pay a premium for foreign brands, but this attitude is shifting as changes within China's brand landscape accelerate. The survey also revealed that brand awareness differs for electric vehicles (EVs) and traditional internal-combustion-engine (ICE) vehicles. Four of the five most recognizable EV brands are Chinese, while the most recognizable ICE brands are still foreign brands.
3. **Customer loyalty to EVs is emerging, and focusing on customer operations is essential for OEMs.** EV customers are more inclined to consider vehicle performance, rather than regulatory incentives such as free license plates, when purchasing a vehicle. Also, EV owners are highly satisfied with the overall performance of their vehicles, which demonstrates great growth potential for EV penetration. OEMs that want to build a sustainable, long-term advantage in the Chinese market must also strengthen all aspects of their customer operations.
4. **OEMs must offer omnichannel operations and focus on improving the customer experience.** Consumers have shown significant enthusiasm for online car sales, but offline touchpoints remain indispensable. EV disruptors have achieved high customer satisfaction through omnichannel direct-to-consumer (DTC) models, but they still need to improve their after-sales services.
5. **Software monetization is reaching maturity, and OEMs must continue upgrading their business models.** Consumers are enthusiastic about various smart-vehicle technologies, but their willingness to pay varies significantly by feature. In response, OEMs need to rapidly implement and upgrade targeted payment approaches for different features to optimize their business models.
6. **The concept of low-carbon cars is emerging, and consumers have shown willingness to pay extra.** Low-carbon cars can help reduce greenhouse gas (GHG) emissions during all phases of the vehicle life cycle, beginning with the procurement of raw materials for manufacturing and extending through day-to-day operations. Consumers are increasingly aware of the concept of low-carbon cars and some customer segments, such as those who have high incomes and are environmentally conscious, show a greater willingness to pay for them.

Together, these trends will help promote even greater technological advances and encourage the development of new business models. This report shows how automotive OEMs can take advantage of these shifts and build strategies that position them for success in the Chinese market.

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1 Trading up continues to be popular, but some consumers are making more rational choices about their next car purchase

Key insights:

- Chinese consumers have shown a strong desire to trade up when purchasing a new car, which has caused the market share of mid- to high-priced vehicles to increase over the past few years
- Today, this desire to trade up remains strong; at the same time, with the continuous introduction of higher-value models, which offer high-quality features at lower prices, there are significantly more value-driven shoppers than before

For many years, Chinese consumers have desired trading up when buying new cars, which has driven the market share of higher-priced segments

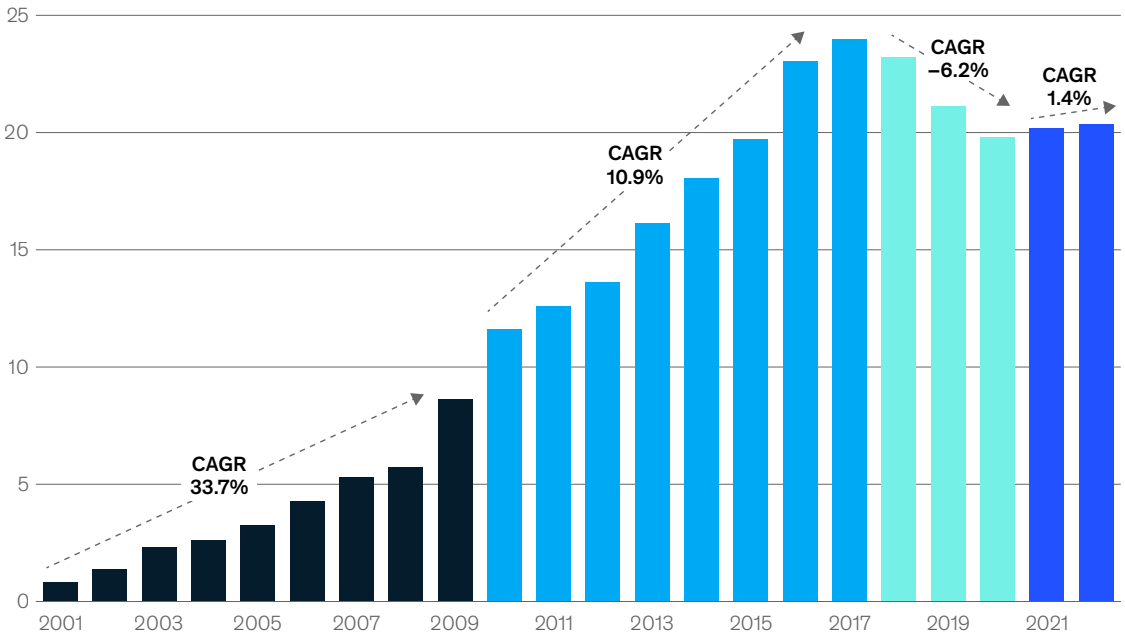
After 2017, the Chinese auto market declined in size for three consecutive years. After 2020, however, the demand for new cars recovered from the lowest basepoint of previous decline, primarily because of tax incentives implemented in 2022 (Exhibit 1). Along with the recovery, the market share of higher-priced segments also increased. In fact, the market share of cars priced at RMB 100K to 200K has increased from 45 percent in 2020 to 48 percent in 2022, and the market share of cars priced at more than RMB 200K increased from 25 percent in 2020 to 28 percent in 2022.[1]

[1] At the time of publication, RMB 1 is equivalent to $0.15.

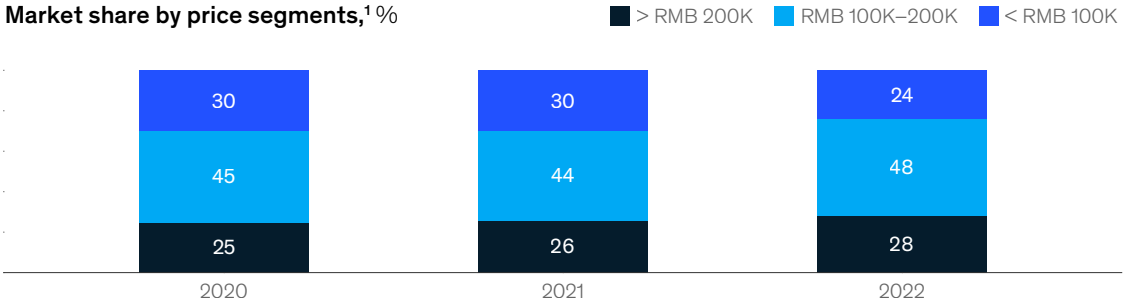
Exhibit 1

The Chinese passenger vehicle market has had a recovery in sales in recent years, and the RMB 100K–plus segment (approximately $14,660) is winning the market share.

Sales volume of passenger vehicles in China, million units



Market share by price segments,[1] %



Note: At the time of publication, RMB 1 = $0.15.
[1]Based on the starting manufacturer suggested retail price (MSRP) of the respective models.
Source: China New Car Insurance Registration Database; IHS Markit

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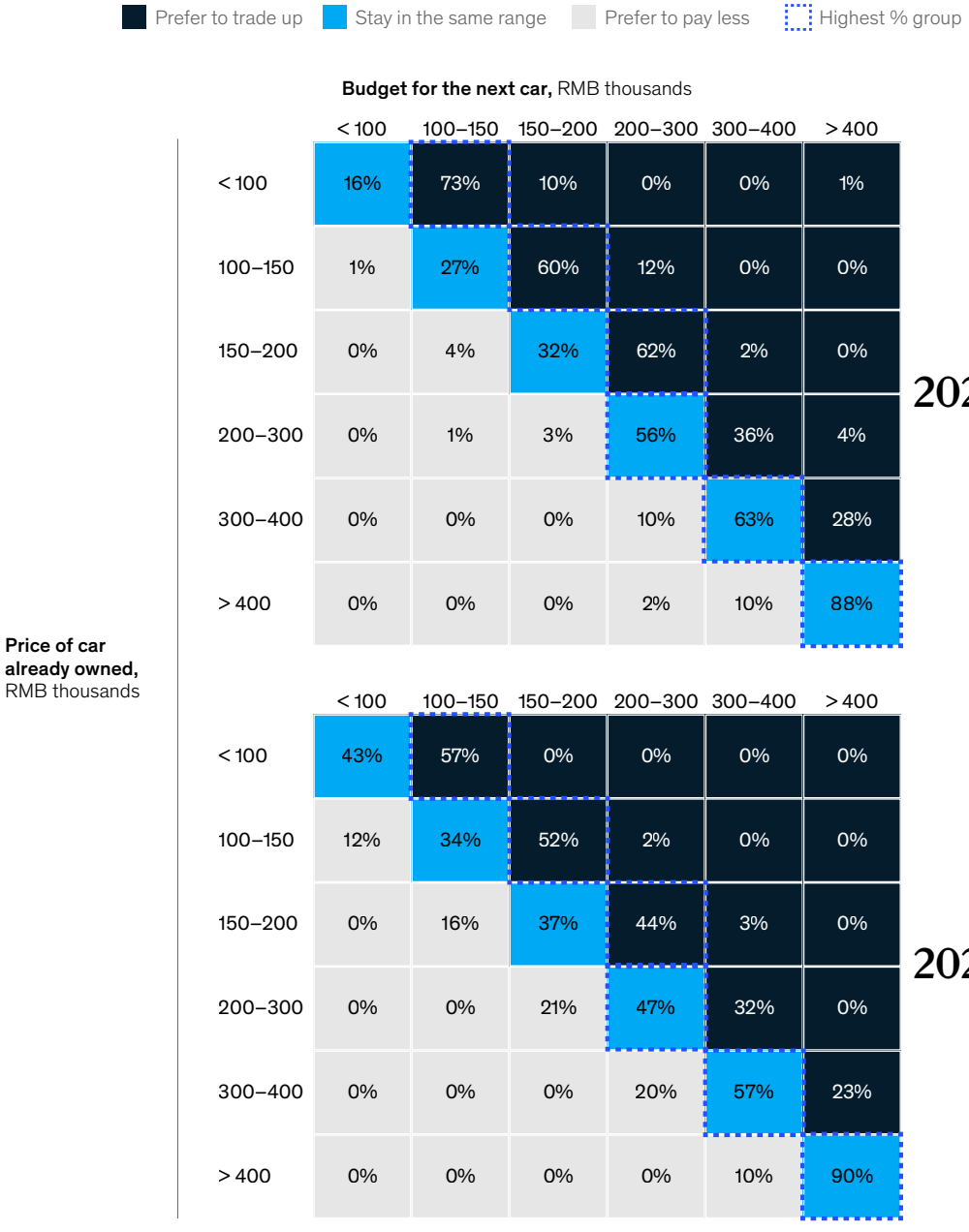
Our findings show that the desire to trade up when purchasing a new vehicle is the major driver for the increase in the market share of mid-to-high-priced cars. In fact, more than half (54 percent) of those who own a car in the price range of RMB 100K to 150K would consider a higher-priced model for their next purchase, and nearly half (47 percent) of car owners whose existing cars costs between RMB 150K to 200K claim they would increase their budget for their next purchase (Exhibit 2).

Exhibit 2

Consumers continue to show a strong desire to trade up for their next car purchase.

Budget for the next car vs price of car already owned, % of respondents



Note: At the time of publication, RMB 1 = $0.15.
Source: McKinsey China Auto Consumer Insights 2023

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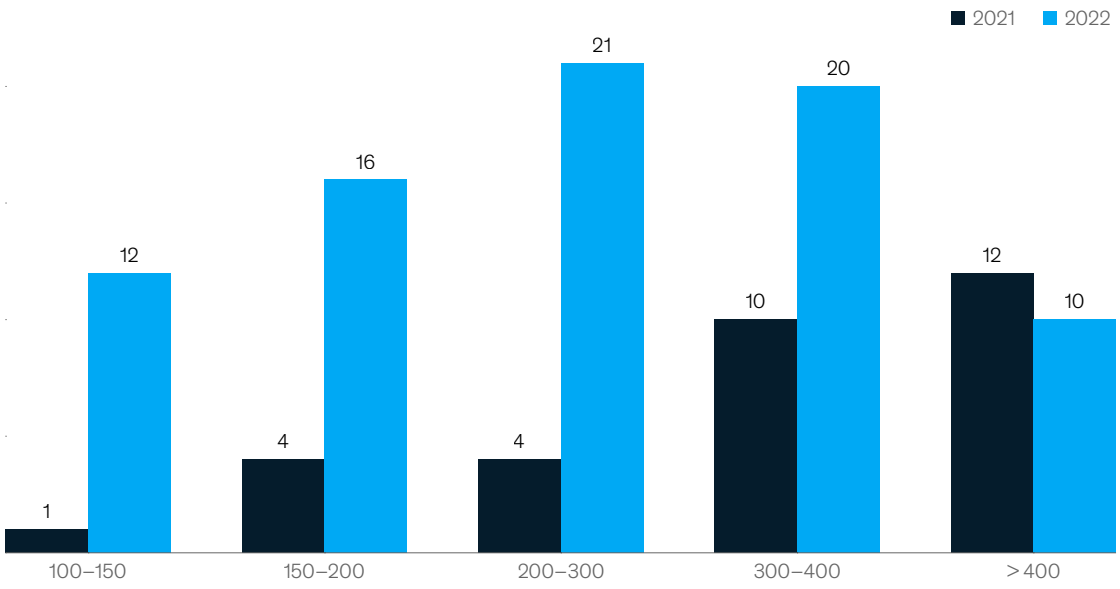
While maintaining the desire to trade up, consumers are making more rational choices
Even though the desire to trade up is strong, the number of consumers who hold more rational consumption views has significantly increased compared with previous years (Exhibit 3). For example, 12 percent of respondents whose existing cars costs between RMB 100K to 150K claim they would consider a lower price range for their next purchase, compared with only 1 percent in 2021. Of those respondents whose existing cars costs between RMB 150K and 200K, a slighter greater share (16 percent) state they would consider a lower price range when making their next purchase, compared with 4 percent in 2021. And with the introduction of cost-effective models with high-quality features, some consumers will maintain this cost consciousness instead of simply pursuing higher-priced models.

Exhibit 3

The proportion of consumers considering a lower budget for their next purchase is growing.

Consumers who consider a lower price range for next purchase in relation to price of car already owned, % of respondents, RMB thousands



Note: At the time of publication, RMB 1 = $0.15.
Source: McKinsey China Auto Consumer Insights 2023

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2 Multinational brands no longer command premium prices, and changes in the overall brand landscape are accelerating

Key insights:

- The dominance of traditional multinational brands is declining, and consumer recognition of EVs and Chinese brands is growing
- Brand importance for EV customers is still low when compared with customers of ICE vehicles. However, as EV technology matures over the long term, a trustworthy brand image will be crucial for the success of EV OEMs. To that end, OEMs must further strengthen their brand images to facilitate long-term development
- Despite the rapid proliferation of new brands, which is making purchase decisions more complex, consumers are still choosing vehicles within a short initial-consideration set (ICS). Brands with weak performance may find it increasingly difficult to maintain market share

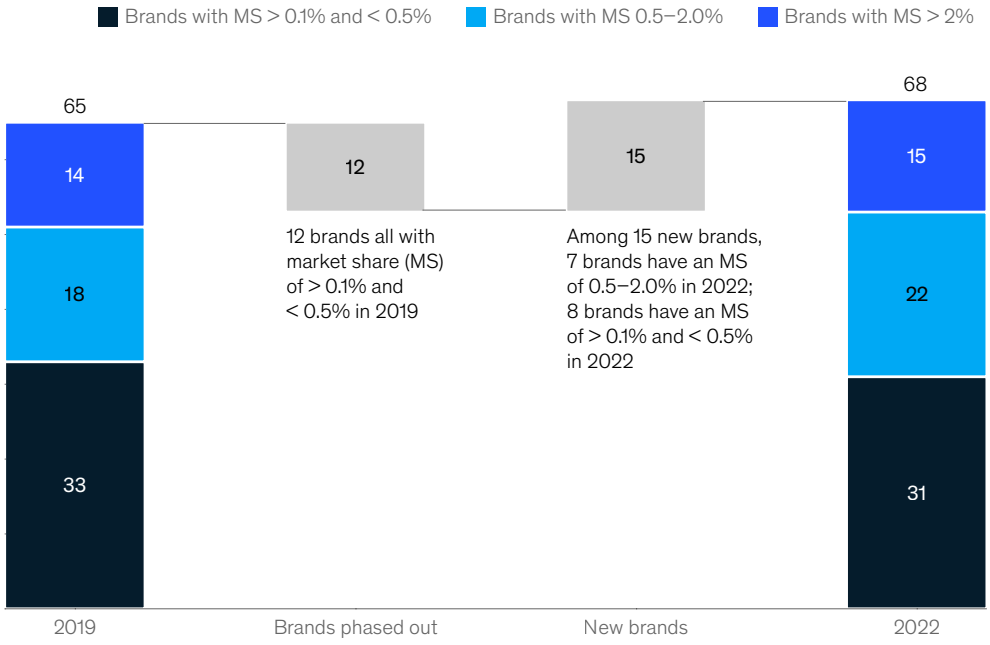
Brand awareness has changed drastically, and multinational brands are losing favor from Chinese consumers

In recent years, the Chinese auto market has been overwhelmed by the influx of brands launched by both EV disruptors and traditional OEMs. And while the number of new brands continues to expand, some underperforming brands are losing market share. In the past three years, 15 new brands joined the list of so-called major brands (those with a market share of more than 0.1 percent, roughly more than 20,000 new cars sold annually). Meanwhile, 12 brands have lost market share and fallen to less than 0.1 percent (Exhibit 4).

Exhibit 4

Competition in the Chinese auto market is becoming more intense as new brands catch up and old brands are phased out.

Major brands in the Chinese auto market,[1] number of brands



[1]Includes only brands with an MS of more than 0.1%, which aggregately account for more than 98% of the total Chinese passenger-vehicle market.
Source: China New Car Insurance Registration Database

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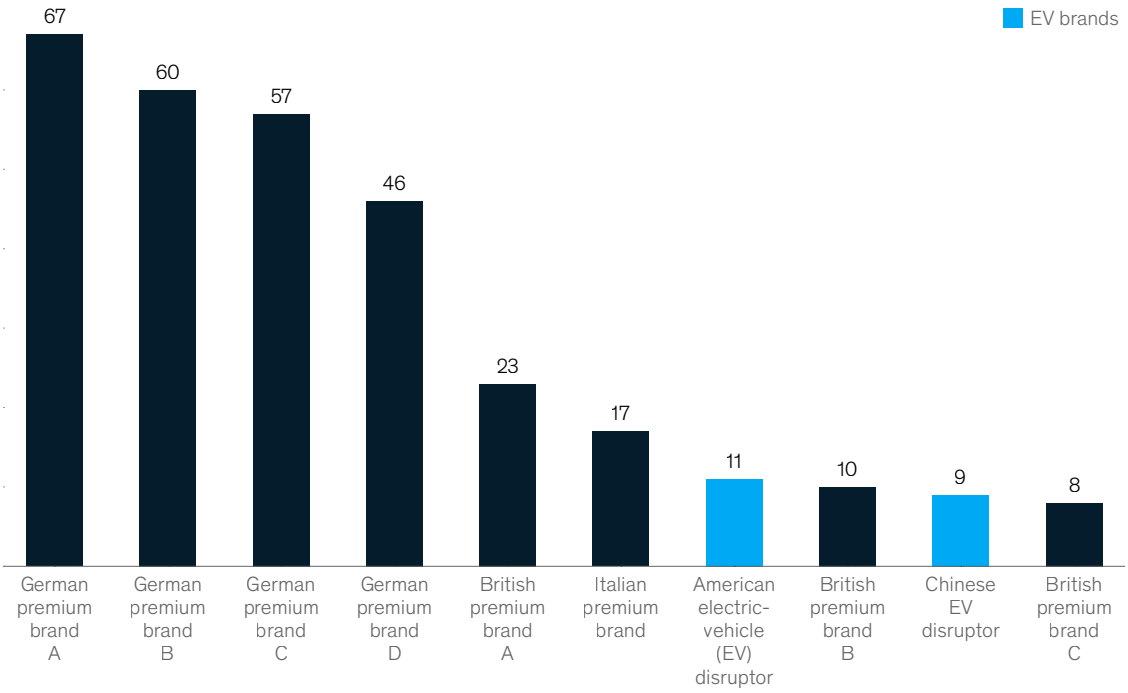
To better determine how Chinese consumers' perceptions of vehicle brands change as new and old brands cycle through the market, we asked our survey respondents about brand awareness. In terms of consumer awareness of premium brands, traditional German brands still maintain the leading position (Exhibit 5). At the same time, a few new EV brands are rapidly topping the list of premium brands (compared with McKinsey China Auto Consumer Insights 2021). One American EV brand moved up ten spots and is now ranked seventh on the latest premium-brand list, and a Chinese EV disruptor moved up 17 spots and is now ranked ninth on the list.

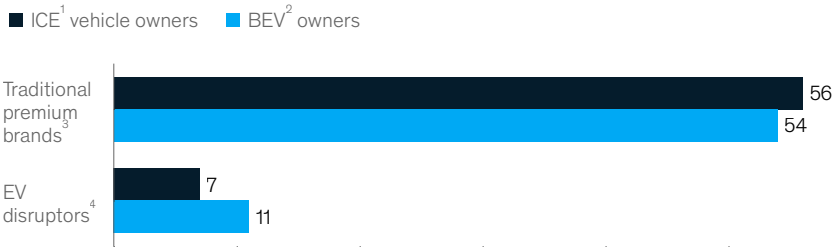
Exhibit 5

Electric-vehicle owners are showing diverging perceptions of premium brands.

Top ten brands viewed as 'premium brand' among consumers, % of respondents



Viewed as 'premium brand,' % of respondents



Recognition difference of BEV owners vs ICE owners, %

–4

70[5]

[1]Internal-combustion engine.
[2]Battery electric vehicle.
[3]Includes three major German premium brands.
[4]Includes one American EV disruptor and three Chinese EV disruptors.
[5]% of respondents is rounded up.
Source: China New Car Insurance Registration Database; McKinsey China Auto Consumer Insights 2023

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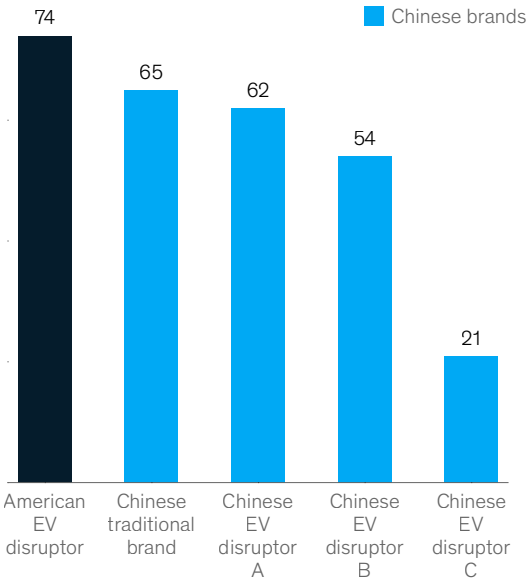
More notably, brand perception among EV owners is diverging from that of ICE-vehicle owners. In terms of premium-brand recognition, EV disruptors receive 70 percent higher recognition from EV owners than from ICE-vehicle owners. In contrast, traditional premium brands receive 4 percent lower recognition from EV owners than from ICE-vehicle owners.

When comparing brand awareness of EVs with that of ICE vehicles, Chinese brands are much more recognized in the EV space than in the ICE space (Exhibit 6). In the EV space, four Chinese brands rank in the top five on the brand awareness list, but in the ICE space, Chinese brands fail to rank in the top five.

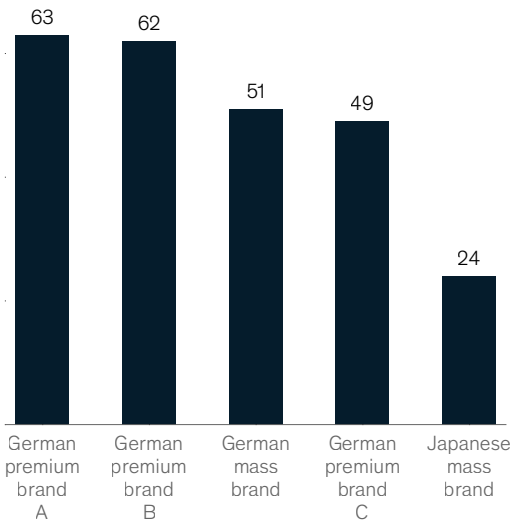
Exhibit 6

Consumers' brand perceptions of internal-combustion-engine vehicles and electric vehicles have diverged.

Top five most recognized electric-vehicle (EV) brands, % of respondents



Top five most recognized internal-combustion-engine (ICE) vehicle brands, % of respondents



Source: McKinsey China Auto Consumer Insights 2023

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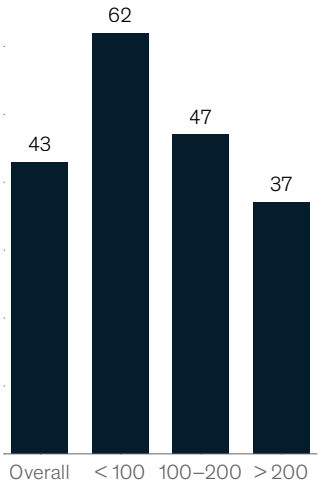
Historically, Chinese consumers have been willing to pay premium prices for multinational brands instead of Chinese brands. However, charging premiums for multinational brands has started to decline. Nearly half of our survey respondents say they were reluctant to pay a premium for a multinational brand, especially those who own a lower-priced car (less than RMB 200K) or an EV.

Owners of low- to medium-priced vehicles are less willing to pay a premium for multinational brands, which can also be observed from sales performance in the corresponding price range (Exhibit 7). In the price range of less than RMB 100K, multinational brands only make up a quarter of the market, and in the next price range of RMB 100K to 200K, multinational brands still have the advantage, although they lost nearly 19 percentage points of their market share in the past two years. Multinational brands still dominate the price range of more than RMB 200K, and the decline of market share in the past two years is less than that of the RMB 100K to 200K price range.

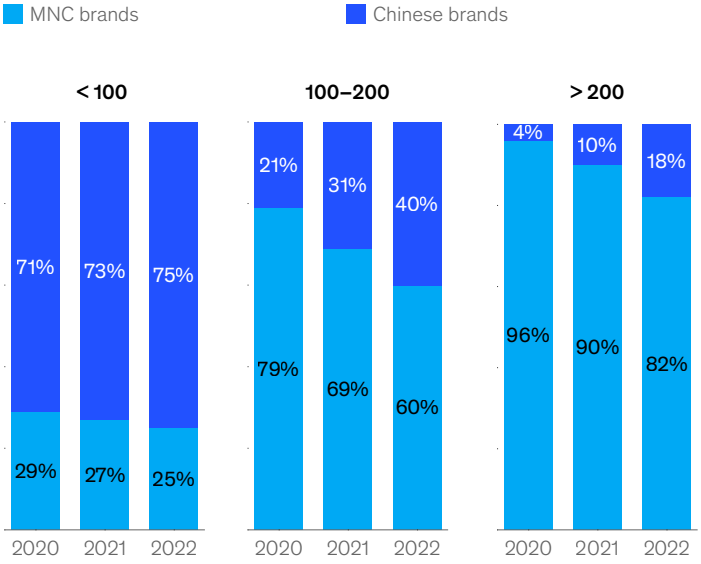
Exhibit 7

Nearly half of consumers are no longer willing to pay premium prices for MNC brands.

Unwillingness to pay premium prices for MNC brands over Chinese brands by price of the car owned, RMB thousands, % of respondents



Sales mix by price range by starting manufacturer suggested retail price (MSRP), RMB thousands



Note: At the time of publication, RMB 1 = $0.15.
Source: China New Car Insurance Registration Database; McKinsey China Auto Consumer Insights 2023

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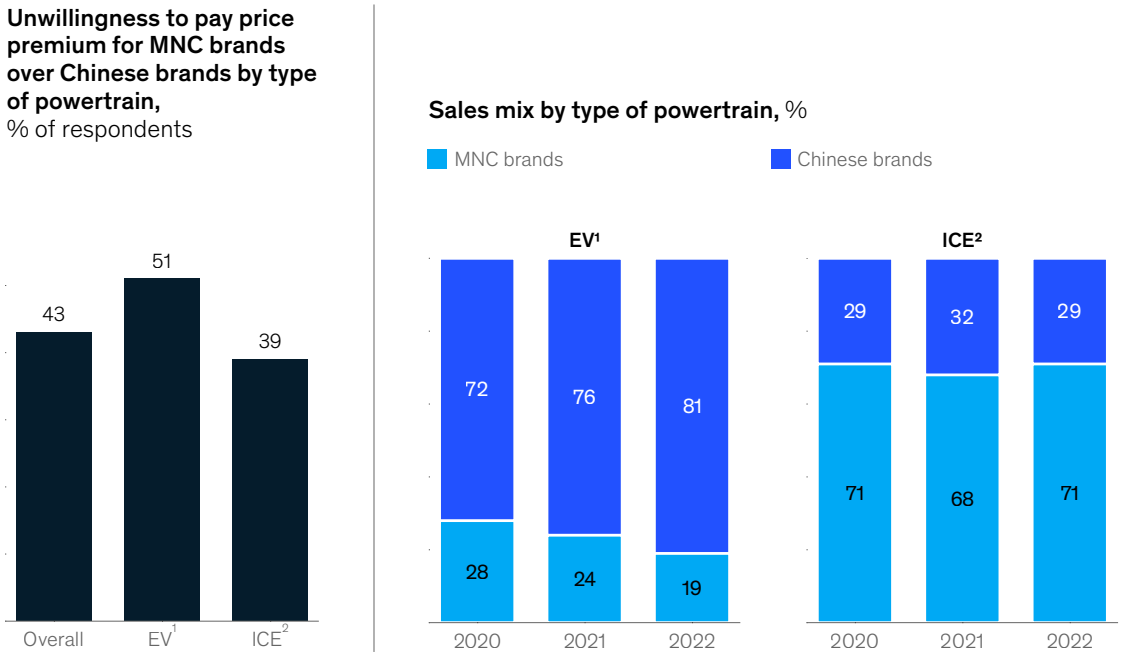
EV owners are more reluctant to pay a premium for multinational brands than ICE vehicle owners (51 percent and 39 percent, respectively). This is also consistent with the difference in the sales performance between the EV segment and the ICE segment: Chinese brands make up around 80 percent of the market share in the EV segment, which is much higher than in the ICE segment (Exhibit 8).

Exhibit 8

Electric-vehicle owners are more reluctant than internal-combustion-engine owners to pay a premium for MNC brands.



[1]Electric vehicle.
[2]Internal-combustion engine.
Source: China New Car Insurance Registration Database; McKinsey China Auto Consumer Insights 2023

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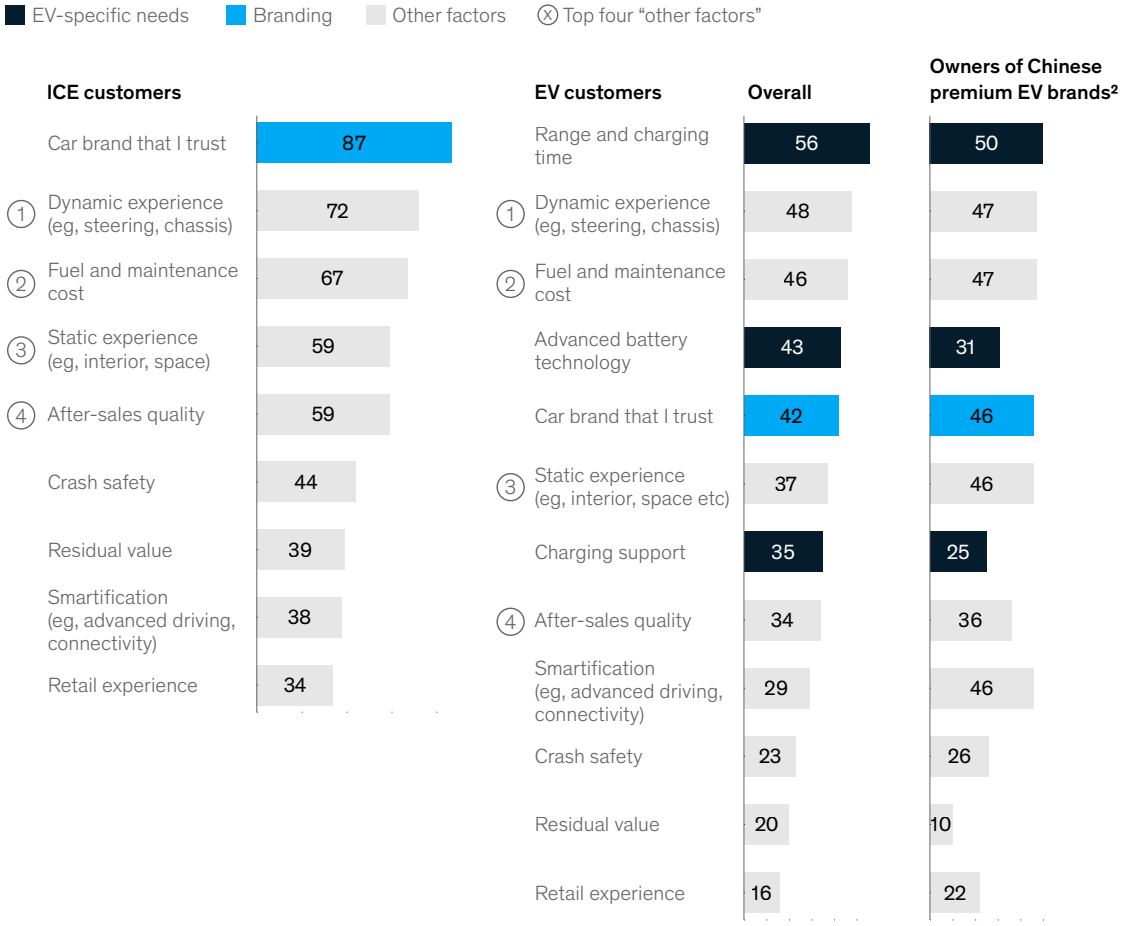
The unwillingness of EV owners to pay premiums for multinational brands is also reflected in the key buying factors of consumers for different types of vehicles. For ICE-vehicle owners, brand is the most important factor, but for EV owners, brand falls to fifth place in terms of priorities (Exhibit 9).

Upon taking a closer look, however, there are similarities between customers of EVs and ICE vehicles. The ranking of some common factors (such as dynamic experience, fuel and maintenance costs, static experience, and after-sales quality) given by customers of both segments is the same after excluding brand and other factors specific for EV owners (such as range, charging needs, battery technology, and so on). This suggests that the importance of brand to EV customers may approach a level similar to that of ICE-vehicle customers as EV technologies mature—for example, when the EV-specific factors of different models converge in the years to come.

Exhibit 9

Electric-vehicle customers are more pragmatic and care less about brand, but as the technology matures, the situation might change.

Key buying factors (KBFs) of internal-combustion-engine (ICE) vehicles vs electric-vehicle (EV) customers, % of respondents[1]



[1]Because EV customers are offered more options, % of respondents between ICE vs EV is not directly comparable.
[2]Owners of four leading Chinese premium EV disruptors.
Source: McKinsey China Auto Consumer Insights 2023

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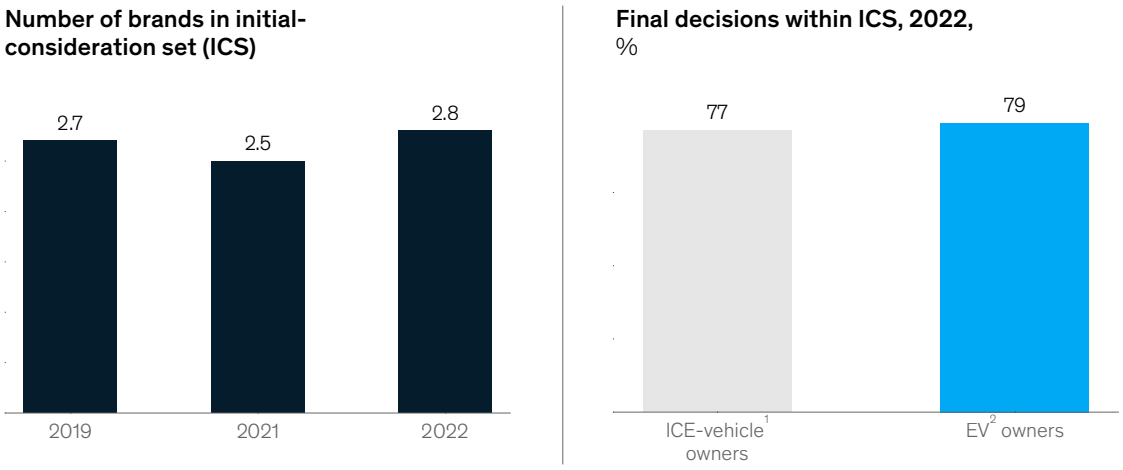
It is crucial for OEMs to enter consumers' initial-consideration set (ICS) to stay competitive

The possibility of a gradual convergence of brand importance between ICE vehicles and EVs is also shown by the ICS of consumers (Exhibit 10). Essentially, when consumers set out to buy a car, they first establish a number of brands to consider and research before making the final decision. This field of choice has expanded in recent years, with the number of brands with a market share of more than 0.5 percent increasing from 32 in 2019 to 37 in 2022. Although the ICS of consumers includes only two or three brands on average, there is a high possibility (about 80 percent) of final choices coming from the ICS, regardless of vehicle type. Facing such a complex brand landscape, it's crucial for OEMs to come up with strategies that result in their brands being included in the ICS of consumers.

Exhibit 10

Consumers tend to maintain a small initial-consideration set, and about 80 percent of final decisions come from that set.



Note: 2020 is not included because the survey was not conducted that year.
[1]Internal-combustion engine.
[2]Electric vehicle.
Source: McKinsey China Auto Consumer Insights 2023

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3 Customer loyalty to EVs is emerging, and focusing on customer operations is essential for OEMs

Key insights:

- As EV technologies mature, regulatory support—namely, free special license plates for EVs—is no longer a primary factor for consumers considering the purchase of an EV
- The smart EVs introduced by Chinese EV disruptors have won significant recognition from Chinese consumers
- Overall, EV owners are satisfied with the performance of their vehicles across multiple dimensions, which will benefit the accelerating expansion of EV market share in the near future

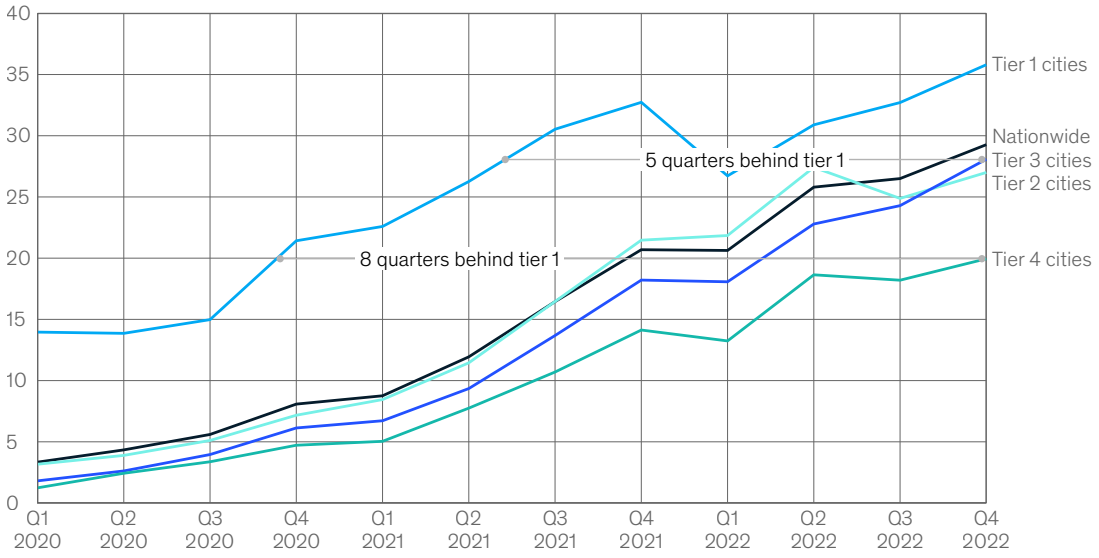
The market penetration rate of EVs and consumer acceptance are mutually reinforcing

In the Chinese passenger vehicle market, the penetration rate of EVs has achieved a staggering increase in the past few years (Exhibit 11). Increasing from less than 5 percent in Q1 2020 to nearly 30 percent in Q4 2022, market penetration is rising rapidly across all city tiers. Meanwhile, based on McKinsey China Auto Consumer Insights 2023, consumer acceptance of EVs—the proportion of consumers who are willing to consider an EV for their next car—has also increased, rising from 55 percent in 2019 up to 68 percent in 2022 (Exhibit 12).

Exhibit 11

Electric-vehicle penetration is increasing rapidly in China across all city tiers.

Electric-vehicle penetration, %



Source: China New Car Insurance Registration Database

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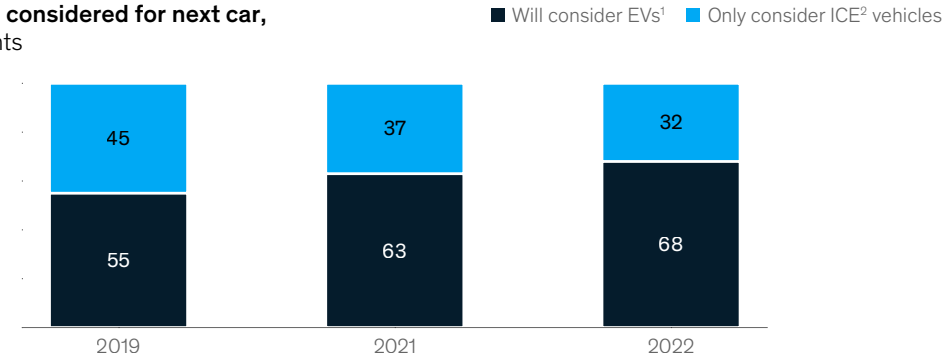
Exhibit 12

Consumers' acceptance of electric vehicles is increasing continuously.

Type of vehicle considered for next car, % of respondents



Note: 2020 is not included because the survey was not conducted that year.
[1]Electric vehicles.
[2]Internal-combustion engine.
Source: McKinsey China Auto Consumer Insights 2023

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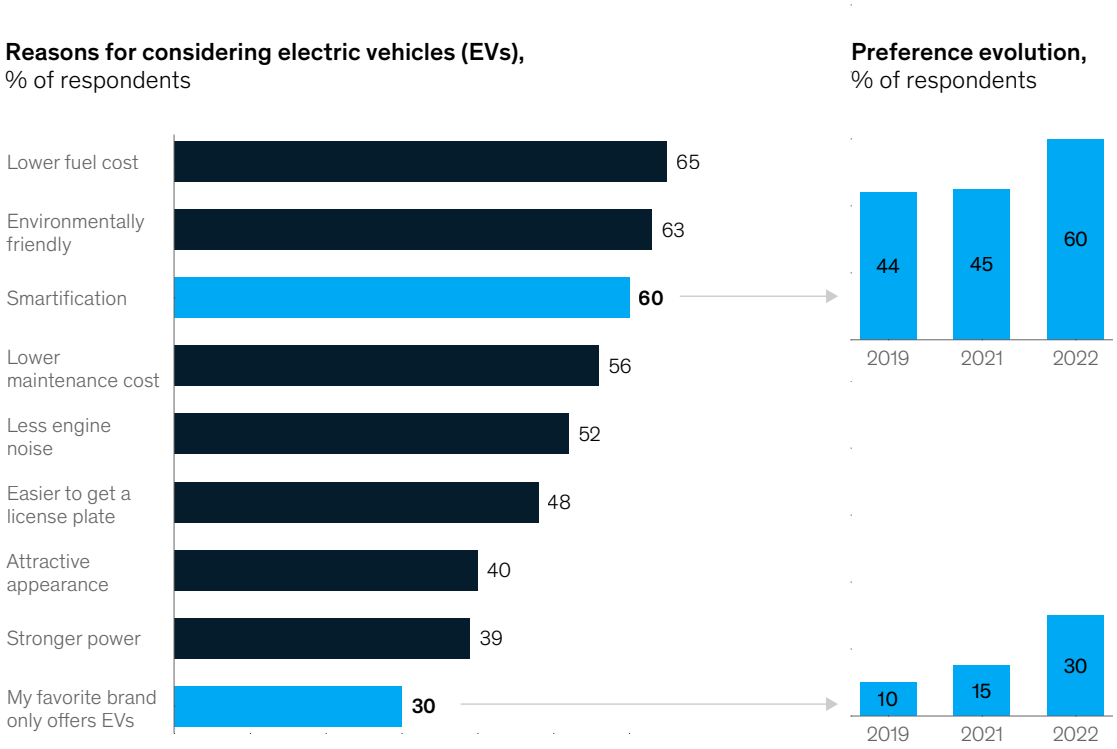
With all this in mind, the rapid growth of EV sales is undoubtedly directly driven by increased consumer acceptance. Meanwhile, the growing prevalence of EVs will also reinforce consumer perceptions of EVs.

Vehicle performance is now the key factor influencing EV customers' purchase decisions, replacing the fact that it is easier to obtain a license plate for an EV

When respondents answered questions related to the acceptance of EVs—for example, "Why are you considering buying an EV?"—factors such as "lower fuel cost," "environmentally friendly," and "smartification" were most frequently mentioned, ranking well above "easier to get a car plate" (Exhibit 13). This shows that EVs are winning over consumers with their performance advantages instead of relying solely on policy-based factors. In addition, the proportion of consumers who consider "My favorite brand only offers EV" an important factor is increasing, highlighting the attractiveness of several outstanding EV disruptors to consumers.

Exhibit 13

The growing acceptance of electric vehicles is triggered by the advantages in product performance.



Source: McKinsey China Auto Consumer Insights 2023

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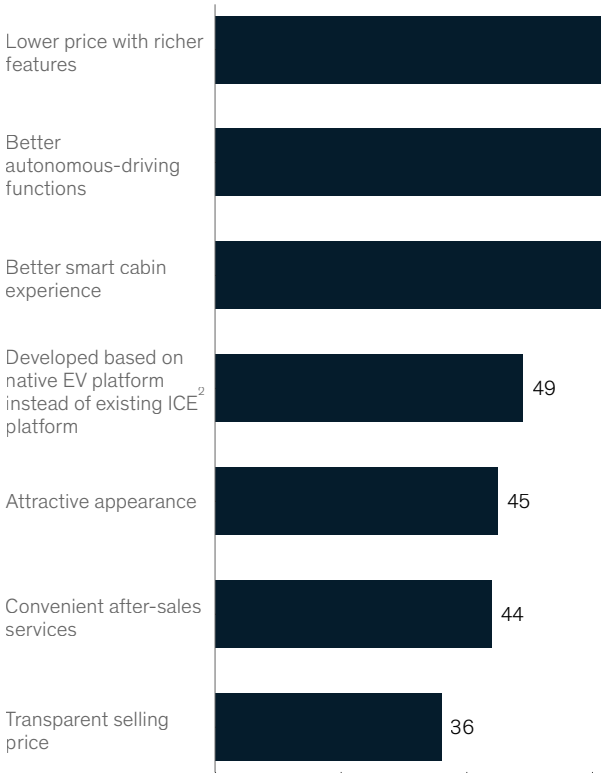
EV disruptors are winning the affinities of consumers with advantages such as value for money, smart features, and EV-native platforms

The success of EV disruptors is a notable phenomenon in China's EV market. In fact, the selling price of vehicles offered by EV disruptors have reached or even exceeded those of traditional premium brands. Despite this, they still achieved significantly higher sales volume than the latter in EV sales. Several factors are affecting consumers' favor toward EV disruptors instead of traditional premium brands—for example, EV disruptors offer the advantages of value for money; smart features; and native, purpose-built platforms designed specifically for EVs, rather than being derived from existing ICE platforms (Exhibit 14). As demonstrated by the key buying factors outlined in the previous chapter, it is worth noting that the importance of smart features for premium EV customers stands out both in comparison with ICE-vehicle owners and when premium EV customers decide between Chinese disruptors and traditional brands. This also explains why Chinese premium EV disruptors outperform traditional premium brands by offering better smart features and can be seen as a clear signal for any players aspiring to outperform in the premium EV market.

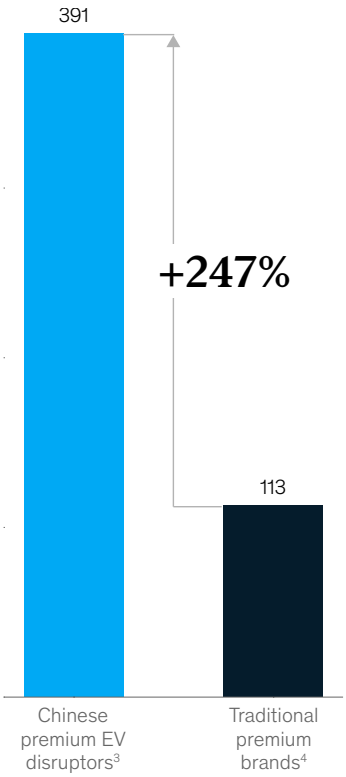
Exhibit 14

Electric-vehicle customers appreciate the high-tech features and innovative retail and after-sales service from disruptors.

Top reasons for buying electric vehicles (EVs) from premium Chinese disruptors instead of traditional premium brands, % of respondents[1]



Sales volume of premium EVs, thousand units, 2022



[1]Respondents are owners of cars from four leading Chinese premium EV disruptors.
[2]Internal-combustion engine.
[3]Includes four leading Chinese premium EV disruptors.
[4]Includes three major German premium brands.
Source: China New Car Insurance Registration Database; McKinsey China Auto Consumer Insights 2023

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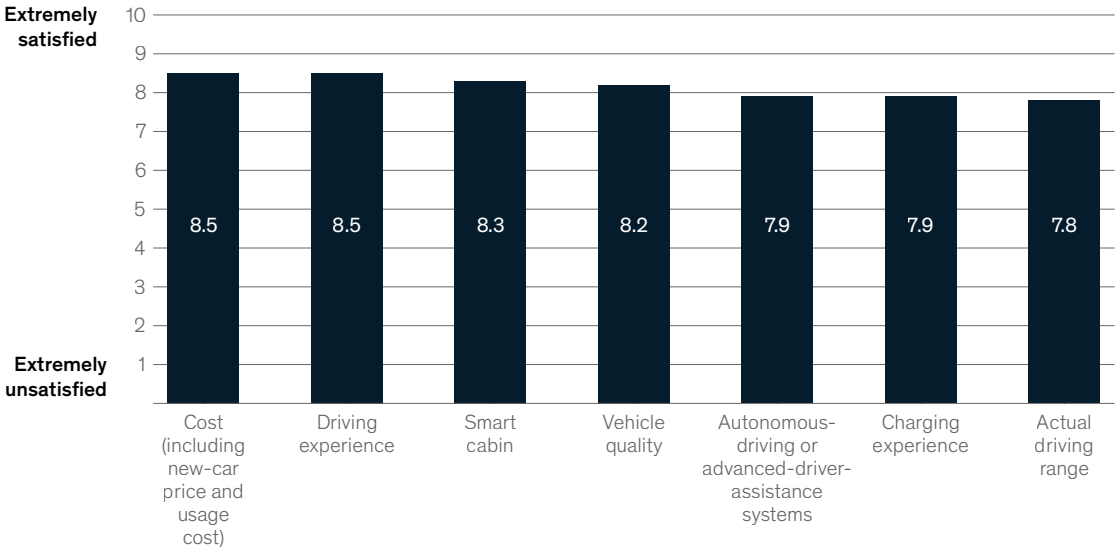
EV owners have shown high loyalty to their EVs because of high satisfaction with the performance of their vehicles across multiple dimensions

Generally speaking, EV owners are satisfied with the performance of their vehicles. In terms of cost, driving experience, and smart cabins, the satisfaction rates are close to 8.5 out of 10.0; for actual driving range, the dimension with the lowest score, EV owners still gave an average score of 7.8 out of 10.0 (Exhibit 15).

Exhibit 15

Electric-vehicle owners are satisfied with the performance of their existing vehicles across multiple dimensions.

Satisfaction rate (1.0–10.0) by dimensions for electric-vehicle owners only



Source: McKinsey China Auto Consumer Insights 2023

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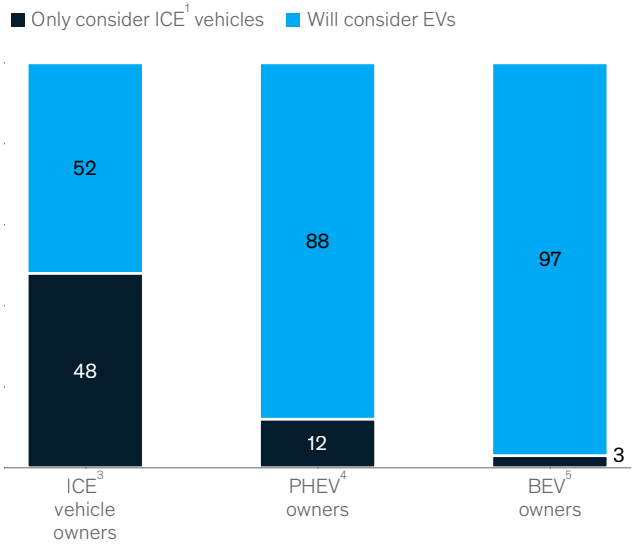
With such high satisfaction rates, it is not surprising that EV owners have demonstrated loyalty to their EVs (Exhibit 16). Based on our survey, the vast majority of EV owners are unwilling to switch back to traditional ICE vehicles after owning an EV, whereas only 3 percent of battery electric vehicle (BEV) owners would not consider an EV for their next car. Meanwhile, EV owners are also happy to recommend purchasing an EV to their families and friends (rated 8.2 out of 10.0). Considering the fact that the market penetration rate of new EVs has reached 30 percent, the praise and loyalty of EV owners will undoubtedly further promote EVs to expand their market share.

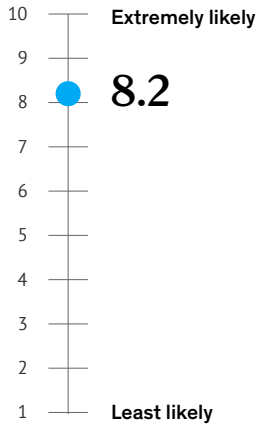
Exhibit 16

High satisfaction is encouraging electric-vehicle owners to stick with EVs in their next purchase and to recommend them to others.

Respondents who will consider EVs for their next car purchase,[1] % of respondents



Likelihood of recommending EVs to others,[2] rating by EV owners



[1]Question: Will you consider electric vehicles (EVs) in your next car purchase?
[2]Question: Would you recommend EVs to your friends?
[3]Internal-combustion engine.
[4]Plug-in hybrid electric vehicles.
[5]Battery electric vehicles.
Source: McKinsey China Auto Consumer Insights 2023

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To establish sustainable, long-term competitive advantages in the EV market, OEMs must strengthen customer operations from all perspectives. In addition to product performance and car-use experience, business model innovation and customer experience optimization in the retail and service phases cannot be ignored. In this regard, EV disruptors have discovered novel, successful pathways to increasing market share that other OEMs can learn from.

4 OEMs must offer omnichannel operations and focus on improving the customer experience

Key insights:

— Auto consumers have shown strong interest in online sales channels, but a satisfying offline experience is still indispensable

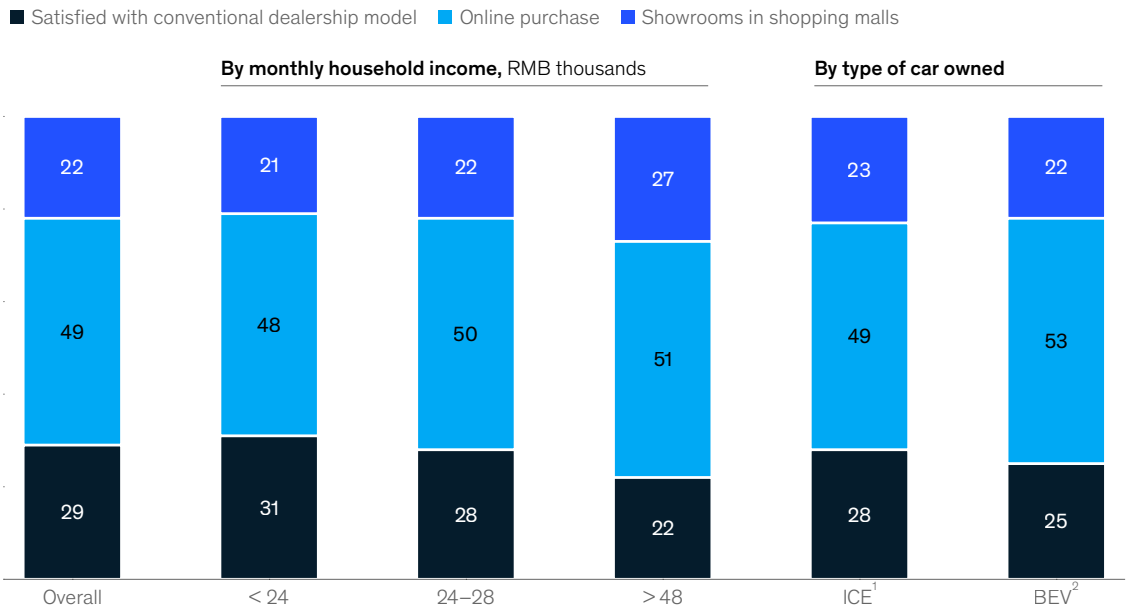
— Direct-to-consumer (DTC) models have effectively improved consumers' purchasing and car-use experiences. Thus, OEMs should accelerate their omnichannel development to ensure a consistent online and offline experience and focus on the full customer life cycle. On this point, EV disruptors have already made significant progress

Consumers are showing strong interest in new retail models, including online sales
With an ICS established, consumers will start to contact brands' points of sale. Regarding preferred sales channels, only about 30 percent of respondents are satisfied with existing conventional dealerships. Meanwhile, 22 percent of respondents prefer showrooms in shopping malls, and 49 percent hope to switch to online sales (Exhibit 17).

Exhibit 17

Only about 30 percent of consumers are satisfied with existing conventional dealerships, and 49 percent of consumers would prefer online sales.

Preferred channel to purchase a car, % of respondents



Note: At the time of publication, RMB 1 = $0.15.
[1]Internal-combustion engine.
[2]Battery electric vehicle.
Source: McKinsey China Auto Consumer Insights 2023

McKinsey & Company

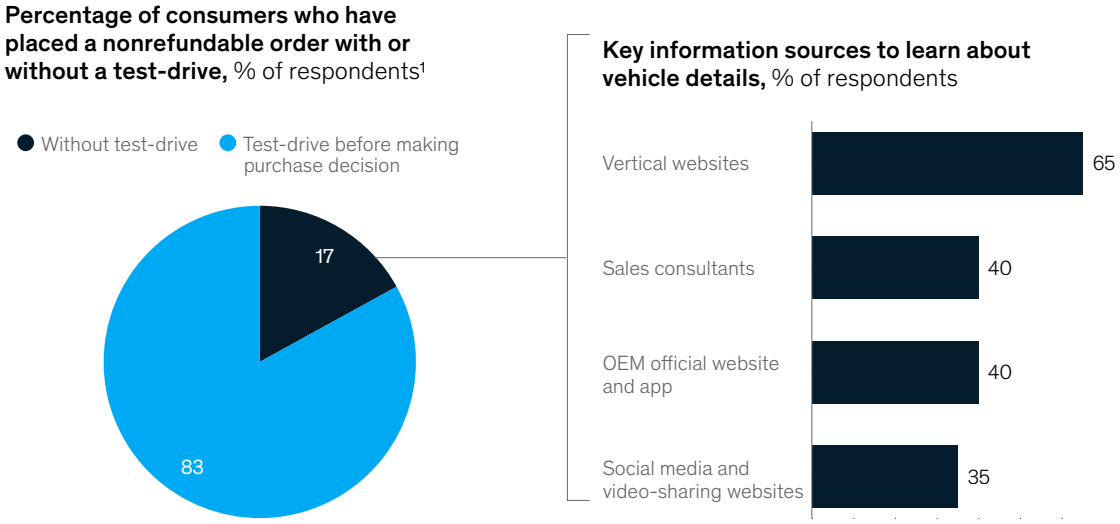
Offline touchpoints remain indispensable

While consumers are increasingly focusing on online channels, the offline experience remains indispensable. Many EV disruptors now offer a new sales model: after a product is launched online, consumers can make reservations and lock in their orders through an app. But even for fans of these pioneering brands, an offline test-drive is typically a prerequisite before an order is confirmed. In fact, 83 percent of owners of EV disruptors took a test-drive, and 17 percent placed blind orders[2] (Exhibit 18).

[2] Refers to when customers pay nonrefundable deposits without taking a test-drive.

Exhibit 18

Offline touchpoints are still indispensable because more than 80 percent of consumers desire to test-drive a car before deciding to purchase.



[1]Includes only consumers who placed a nonrefundable order or picked up the car for the most recent smart electric-vehicle models.
Source: McKinsey China Auto Consumer Insights 2023

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The DTC model with online and offline integration shows remarkable potential to improve the customer experience

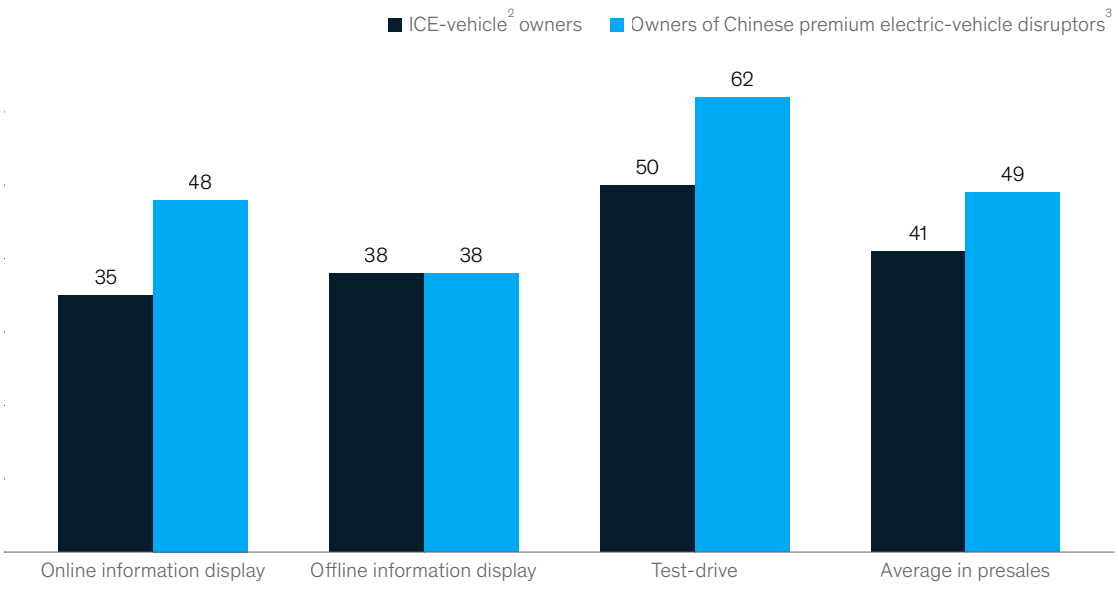
Recently, the DTC model introduced by EV disruptors has become a new focus of the automotive industry. According to our survey, the DTC model is indeed effective. Within the presales, sales, and after-sales phases, customer satisfaction through DTC models is generally higher than that of traditional ICE-vehicle OEMs.

— *Presales phase.* Leading OEMs adopting the DTC model are vigorously deploying online channels. While enhancing the richness of online information, they also provide consumers with a combined online and offline service model, such as organized online launch events for new cars, simultaneous activation of online reservation channels, new-car experience reports from various automotive media after new-car launches, and online appointments for test-drives. Through the DTC model, leading OEMs have established obvious advantages in a few key aspects, such as online information display and the test-drive experience. However, offline information display is still at parity with traditional OEMs and needs further investment and optimization (Exhibit 19).

Exhibit 19

Through the direct-to-consumer model, electric-vehicle disruptors have established key advantages in presales.

Net satisfaction across the consumer journey,[1] %



[1]% of respondents giving 9 points and above, minus % of respondents giving 2 points or below; on a scale of 1 to 10, with 10 being most satisfied.
[2]Internal-combustion engine.
[3]Includes owners of four leading Chinese premium EV disruptors.
Source: McKinsey China Auto Consumer Insights 2023

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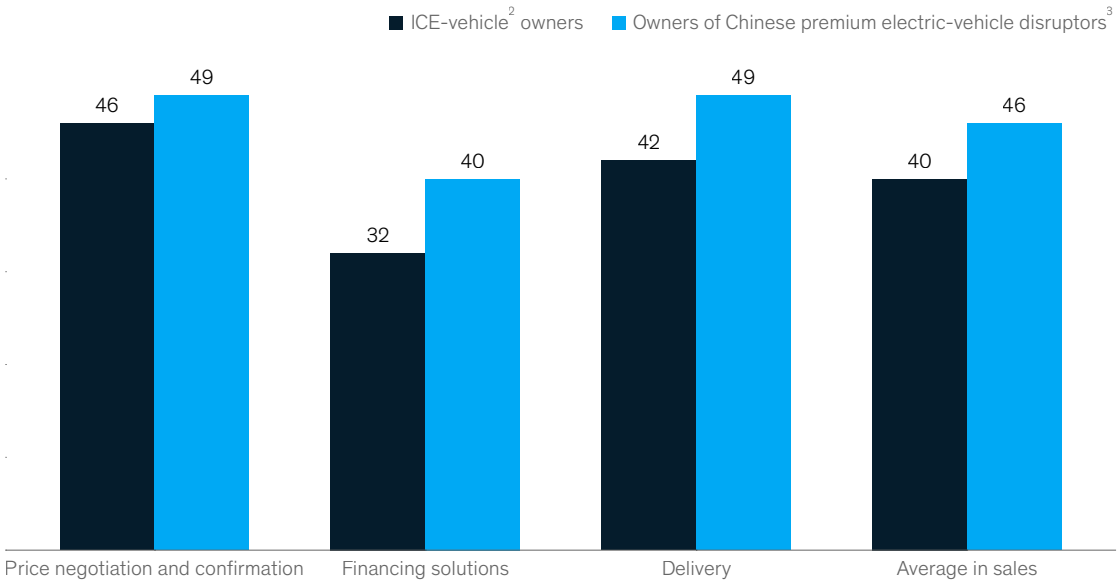
— *Sales phase.* Leading OEMs adopting the DTC model offer quotes, financing solutions, and vehicle delivery to consumers in a comprehensive and transparent manner through dedicated apps, which greatly enhances the overall customer experience and has won broad recognition (Exhibit 20). Moreover, leading OEMs have optimized retail costs by setting up self-owned delivery centers, standardizing the specific delivery processes and service content, and improving the efficiency of vehicle delivery. Various ceremonies such as photo shoots and champagne toasts during the delivery process have also effectively enhanced customer satisfaction.

Exhibit 20

Electric-vehicle disruptors have won recognition through the sales journey, such as through one-stop delivery centers and transparency in pricing.

Net satisfaction across the consumer journey,[1] %



[1]% of respondents giving 9 points and above, minus % of respondents giving 2 points or below; on a scale of 1 to 10, with 10 being most satisfied.
[2]Internal-combustion engine.
[3]Includes owners of four leading Chinese premium EV disruptors.
Source: McKinsey China Auto Consumer Insights 2023

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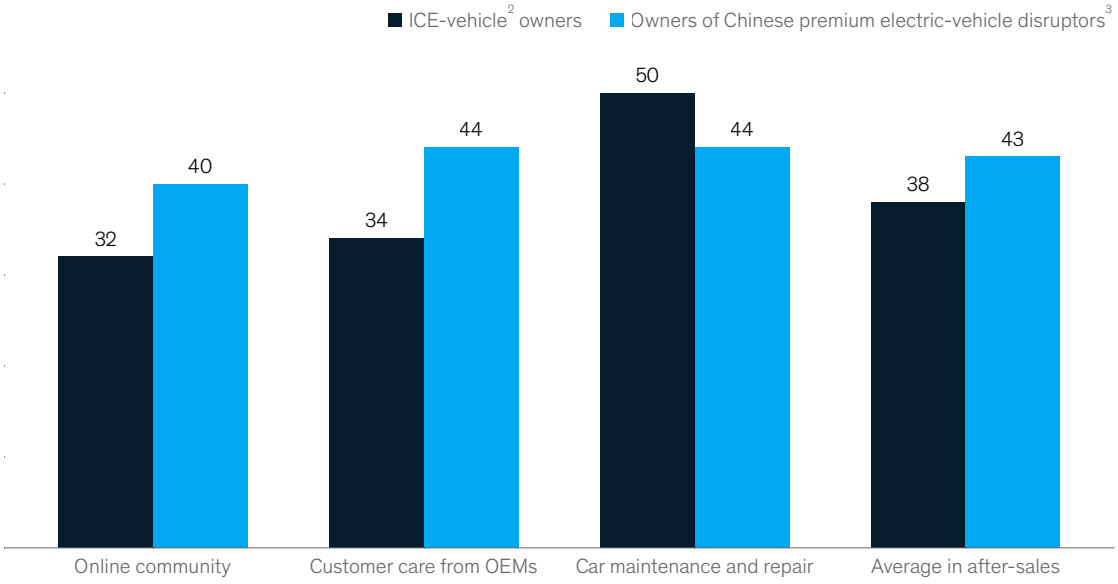
— *After-sales phase.* Leading OEMs adopting the DTC model have won high customer satisfaction with their online communities and customer care, both of which fully demonstrate the importance of operating with the full customer life cycle in mind—that is, focusing on better customer experience not only before and during the sales phase but also during the after-sales period (Exhibit 21). Through connections between the OEM and the customer, feedback can be transmitted directly, thus allowing OEMs to understand customer needs more quickly and make targeted improvements, such as using over-the-air (OTA) vehicle software upgrades. However, it is worth noting that because of the lack of offline after-sales service points, EV disruptors are still lagging traditional OEMs in terms of after-sales maintenance and repair services. But this does not mean that the traditional service format via dealerships is the only solution to resolve after-sales issues; by providing door-to-door pickup and delivery services, centralized dispatching of work bays, and other emerging business models, EV disruptors can still improve their performance in the after-sales phase.

Exhibit 21

Electric-vehicle disruptors' online community and customer care have won consumer satisfaction in after-sales.

Net satisfaction across the consumer journey,[1] %



[1]% of respondents giving 9 points and above, minus % of respondents giving 2 points or below; on a scale of 1 to 10, with 10 being most satisfied.
[2]Internal-combustion engine.
[3]Includes owners of four leading Chinese premium EV disruptors.
Source: McKinsey China Auto Consumer Insights 2023

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Based on the above results, the DTC model can effectively improve consumers' overall purchasing and car-use experiences. It can also help OEMs capture customer needs more quickly and directly as well as make timely and effective adjustments to truly achieve customer-centric operations.

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5 Software monetization is reaching maturity, and OEMs must continue upgrading their business models

Key insights:

- Software monetization is an emerging opportunity for OEMs, but the willingness of consumers to pay for different features varies greatly
- There is a drastic reduction in the willingness of consumers to pay for connectivity functions compared with last year because consumers see these functions as commoditized
- Consumers show little interest in subscription models for conventional-function upgrades
- Autonomous driving is expected to generate higher willingness to pay, and a suitable payment model may effectively stimulate consumer enthusiasm
- Accident responsibility allocation and trustworthy solution suppliers are top considerations for consumers when they consider activating autonomous-driving functions

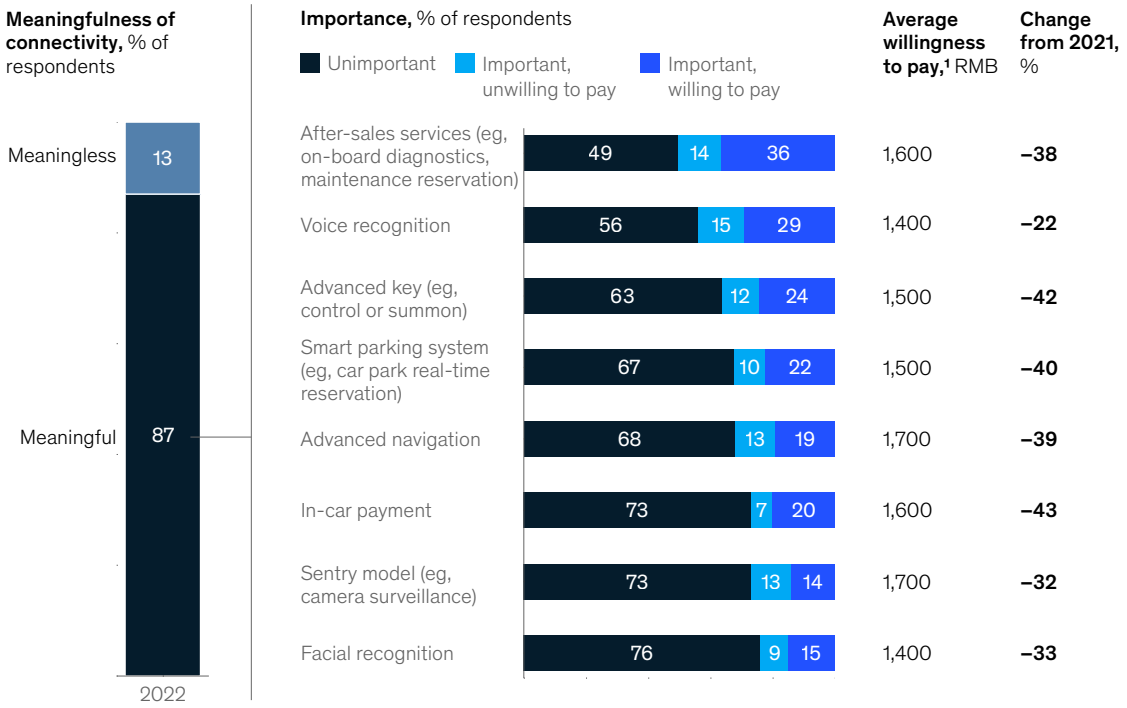
There is a drastic reduction in the willingness of consumers to pay for connectivity functions compared with last year because consumers see these functions as commoditized

With the popularity of combined preinstalled hardware and software subscriptions, the necessity and feasibility of OEMs monetizing software is increasing. Although software monetization might be a new opportunity in the OEM profit pool, the willingness of consumers to pay varies widely across features.

Considering willingness to pay for connectivity functions as an example, the average amount of money consumers are willing to pay for specific features is significantly lower than last year (Exhibit 22). For example, the average amount of money that consumers are willing to pay for connected after-sales services is 38 percent lower than in 2021, and the average amount of money that consumers are willing to pay for advanced keys (which can control or summon cars) is 42 percent lower than in 2021. With these points in mind, we believe that through China's overall highly developed internet ecology, connectivity features that once seemed rare are becoming available to most consumers, which is ultimately decreasing consumers' willingness to pay.

Exhibit 22

There is a drastic reduction in consumers' willingness to pay for connectivity functions because they see these as commoditized features.



Note: Figures may not sum to 100%, because of rounding. At the time of publication, RMB 1 = $0.15.
[1]Excludes consumers who are unwilling to pay.
Source: McKinsey China Auto Consumer Insights 2023

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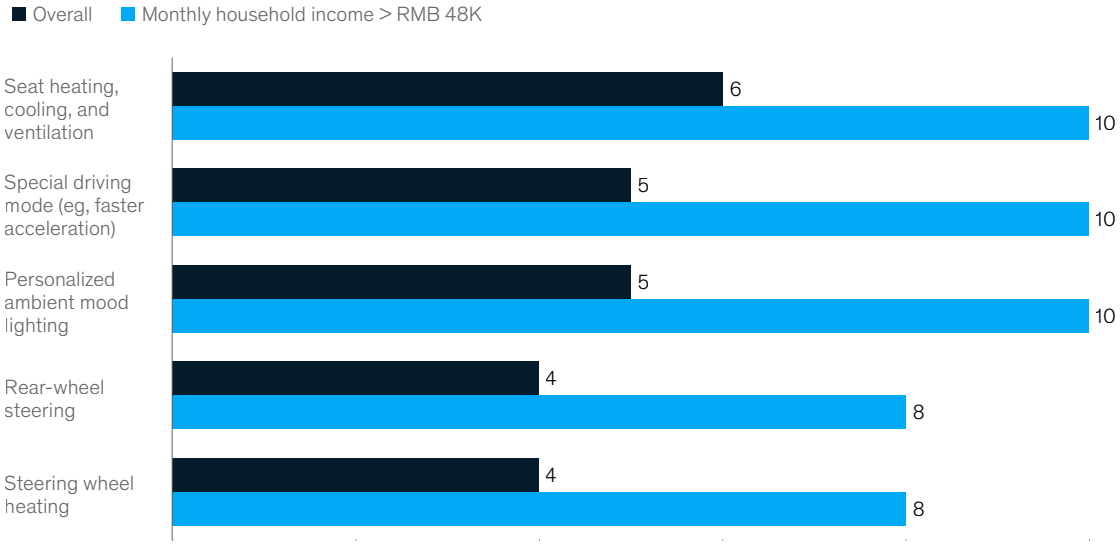
Consumers show little interest in subscription models for conventional-function upgrades

The implementation and promotion of software subscriptions has recently been a hot topic. In terms of specific subscription content, some OEMs have launched subscriptions for conventional functions, such as heated seats and rear-wheel steering. According to our survey, less than 10 percent of respondents show interest in subscription models for these and other conventional functions, although the high-income group shows slightly higher acceptance (Exhibit 23).

Exhibit 23

Consumer acceptance of the subscription model for conventional vehicle functions is very low; high-income groups show slightly higher acceptance.

Subscription model[1] acceptance by monthly household income, % of respondents



Note: At the time of publication, RMB 1 = $0.15.
[1]Pay subscription fee on monthly or yearly basis; may cancel anytime.
Source: McKinsey China Auto Consumer Insights 2023

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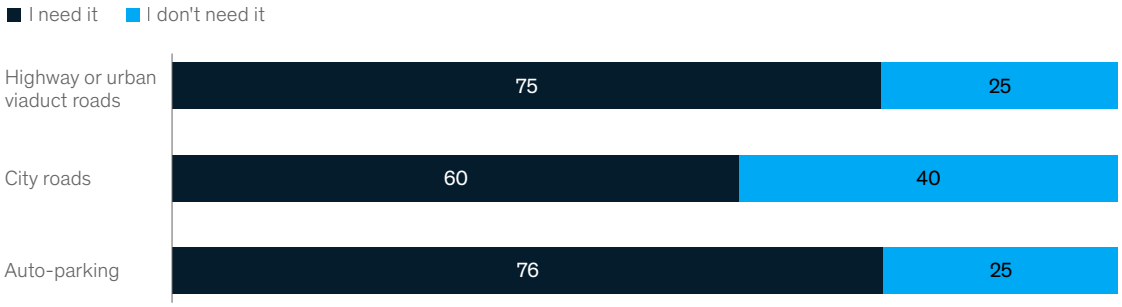
Autonomous driving is expected to generate higher willingness to pay, and a suitable payment model may effectively stimulate consumer enthusiasm

Paid autonomous driving has also been a recent focus in the EV market. We categorized autonomous-driving functions into three use cases: autonomous parking, autonomous driving on highways and urban viaduct roads, and autonomous driving on city roads. According to our survey, consumers show strong interest in all three use cases. Yet compared with more complex and potentially riskier use cases such as autonomous driving on city roads, relatively simpler use cases such as autonomous driving on highways and urban viaduct roads have attracted more interest (Exhibit 24).

Exhibit 24

Consumers have a high interest in autonomous driving.

Importance of autonomous-driving functions, % of respondents



Note: Figures may not sum to 100%, because of rounding.
Source: McKinsey China Auto Consumer Insights 2023

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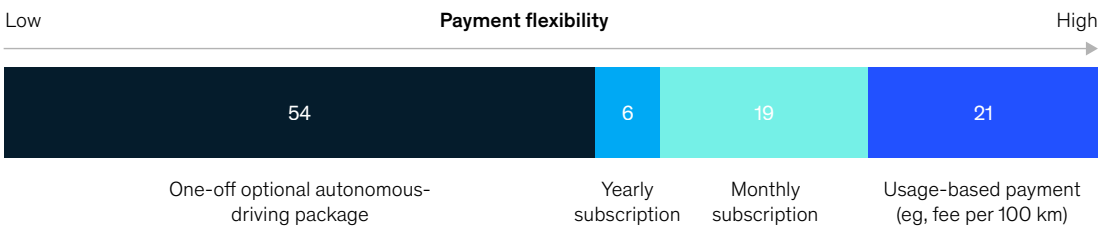
In terms of payment models, consumers have roughly equal interest in one-off payments and subscription models. By looking into specific subscription options, consumers prefer the payment option with higher flexibility, such as usage-based payment by mileage (Exhibit 25).

Exhibit 25

Among different autonomous-driving subscription models, consumers' interest grows as payment flexibility increases.

Preferred payment models,[1] % of respondents



[1]For highway or urban viaduct roads, city roads, and auto-parking.
Source: McKinsey China Auto Consumer Insights 2023

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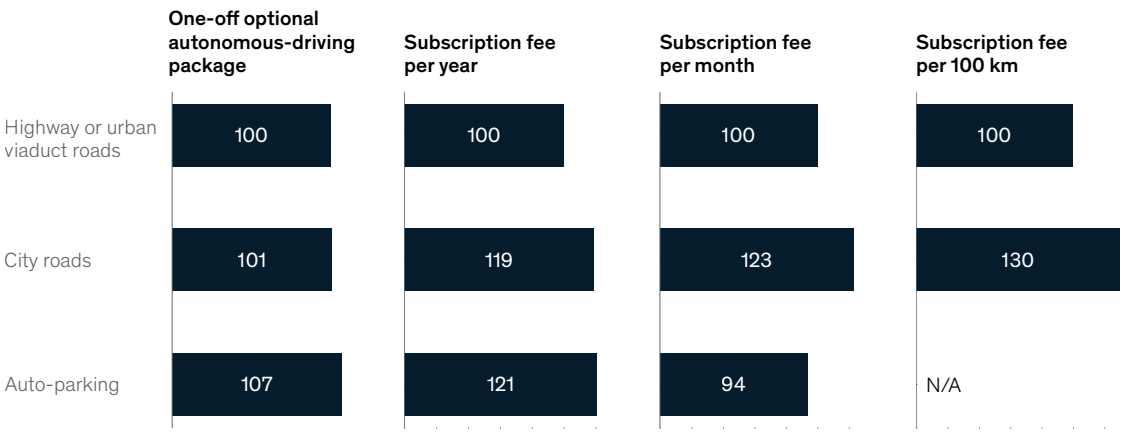
Compared with less-flexible payment options (such as one-time payments), more-flexible subscription options (such as usage-based payment by mileage) can generate higher payments for more complicated use cases such as autonomous driving on city roads (Exhibit 26). Considering that autonomous driving on city roads undoubtedly requires higher R&D and material investment, the willingness of consumers to pay is crucial for OEMs to maintain a sustainable business case for autonomous driving. Consumers' increased willingness to pay for models with higher flexibility can be a reference for OEMs designing appropriate monetization plans.

Exhibit 26

Flexible subscription models could generate higher payments for more complicated use cases.

Willingness to pay,[1] price index[2]



[1]Includes only consumers who are willing to pay additional fees beyond the new-car price.
[2]The use cases of highway or urban viaduct roads are used as the price index base point (100).
Source: McKinsey China Auto Consumer Insights 2023

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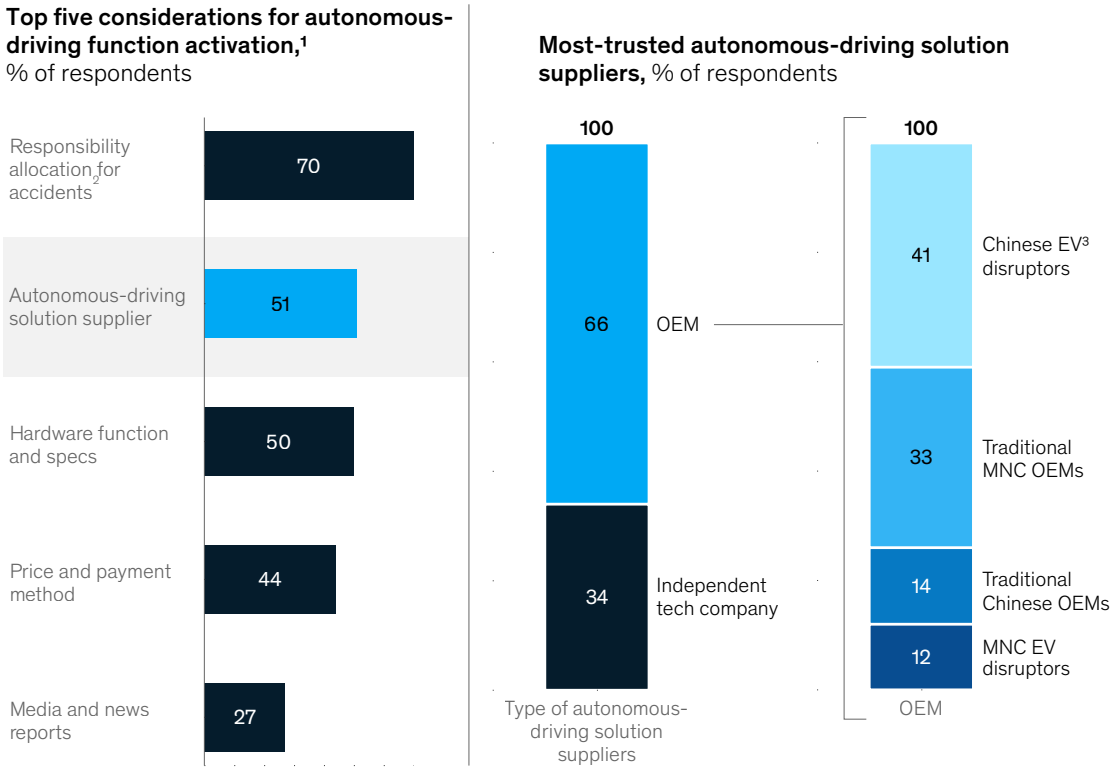
At the same time, although the technology and investment required for autonomous parking is relatively small, consumers show equal willingness to pay for it compared with other use cases, especially under one-off payments and yearly subscriptions. In light of this, OEMs could also consider prioritizing implementing autonomous-parking functions.

Accident responsibility allocation and trustworthy solution suppliers are top considerations for consumers when they consider activating autonomous driving functions

As shown in Exhibit 27, our survey revealed that consumers' top considerations when deciding whether to activate autonomous-driving functions are how legal responsibility would be allocated in traffic accidents (70 percent) and who the providers of the autonomous-driving features are (51 percent). Specific hardware functions and tech parameters are also important (50 percent), which partly explains why new models equipped with light detection and ranging (LiDAR) sensors and chips with high computing power could attract more attention from consumers.

Exhibit 27

Accident responsibility allocation and trustworthy autonomous-driving solution suppliers are top considerations for consumers.



[1]Includes only consumers who need autonomous-driving functions.
[2]Autonomous-driving suppliers will take responsibility for accidents caused by faults with the technology, especially when relevant laws are not enacted yet.
[3]Electric vehicle.
Source: McKinsey China Auto Consumer Insights 2023

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When asking about which types of autonomous-driving suppliers consumers trust more, most said they trust OEMs (66 percent) over independent tech suppliers (34 percent). Looking into specific types of OEMs, consumers prefer Chinese EV disruptors (41 percent), followed by traditional multinational OEMs (33 percent). This implies that eliminating consumers' unfamiliarity with independent tech suppliers will be a major challenge for OEMs that integrate independent technology-solution suppliers with their products. It also implies that consumer trust in the autonomous-driving capabilities of Chinese EV disruptors has once

again been validated, helping to explain why consumers prefer local EV disruptors over traditional multinational premium brands when purchasing smart EVs.

Although consumer acceptance of paid autonomous-driving functions is certainly encouraging, it is also important to acknowledge that the performance of common advanced driver-assistance systems (ADAS), such as navigation-guided piloting, are not yet perfect. Such systems can certainly bring a better experience to drivers under the circumstance of clear lane lines and moderate traffic flow, but they are far from being completely reassuring and can even malfunction in some cases. This may help explain why some premium Chinese EV disruptors have introduced ADAS by bundling hardware costs into the total price of the new car and subsequently offering software for free. Similar free-software strategies will inevitably influence other OEMs and alter the perceptions of consumers around software payment. In addition, considering that connectivity features are becoming increasingly common, the willingness of consumers to pay is significantly lower than last year. Whether similar phenomena will be replicated when it comes to autonomous driving still requires close attention. To maximize profitability, OEMs should iterate and optimize the relevant business models while striving for excellence in autonomous-driving technology.

6 The concept of low-carbon cars is emerging, and consumers have shown willingness to pay extra

Key insights:

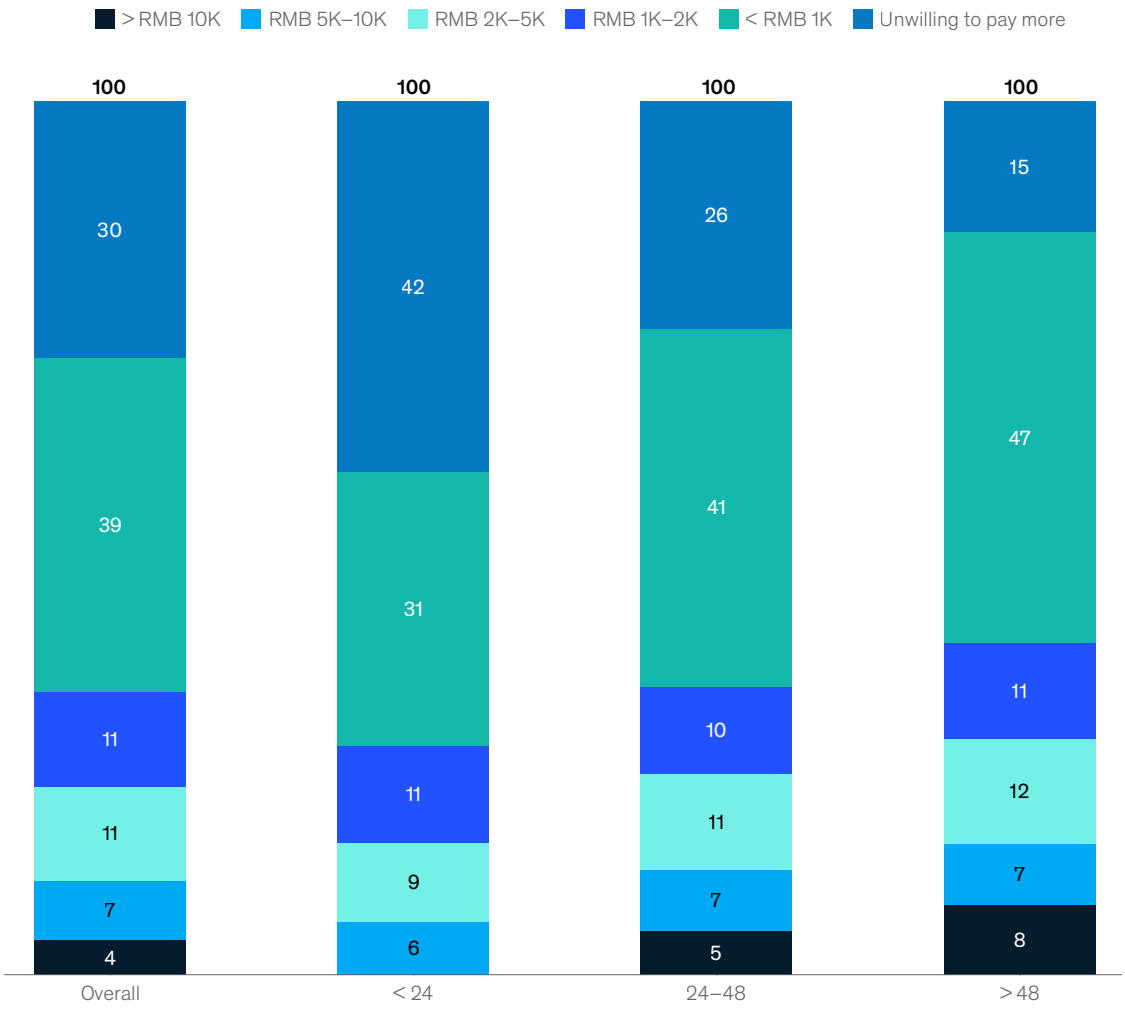
— Chinese consumers are beginning to build awareness of low-carbon cars and are willing to pay extra for them. Certain consumer groups are particularly enthusiastic

More than 70 percent of respondents are willing to pay extra for low-carbon cars
Decarbonization is a major topic in the auto industry. To comply with increasingly bold emissions targets, the development of low-carbon cars (which aim to achieve carbon reduction by lowering GHG emissions from the full life cycle of a vehicle, from raw materials and assembly to daily operations) has been added to the agenda of many OEMs. Building low-carbon cars will inevitably bring additional costs, so the acceptance and willingness to pay of consumers is crucial to their success. According to our survey, 70 percent of BEV owners and intenders expressed their willingness to pay for low-carbon cars, and consumers with higher household incomes have shown greater levels of acceptance. Among the high-income groups with a monthly household income of more than RMB 48K, 85 percent of respondents expressed a willingness to pay for low-carbon cars, and more than 15 percent are willing to pay more than RMB 5K (Exhibit 28).

Exhibit 28

A considerable portion of customers, especially high-income earners, are willing to pay more for low-carbon cars.

Consumers' willingness to pay more for low-carbon cars[1] by household income, by extra amount in RMB thousands, % of respondents[2]



Note: Figures may not sum to 100%, because of rounding. At the time of publication, RMB 1 = $0.15.
[1]Refers to cars that achieve decarbonization by lowering greenhouse gas emissions from the full life cycle of a vehicle, from raw materials and assembly to daily operations.
[2]Includes only battery electric-vehicle (BEV) owners and consumers who are considering a BEV for their next car.
Source: McKinsey China Auto Consumer Insights 2023

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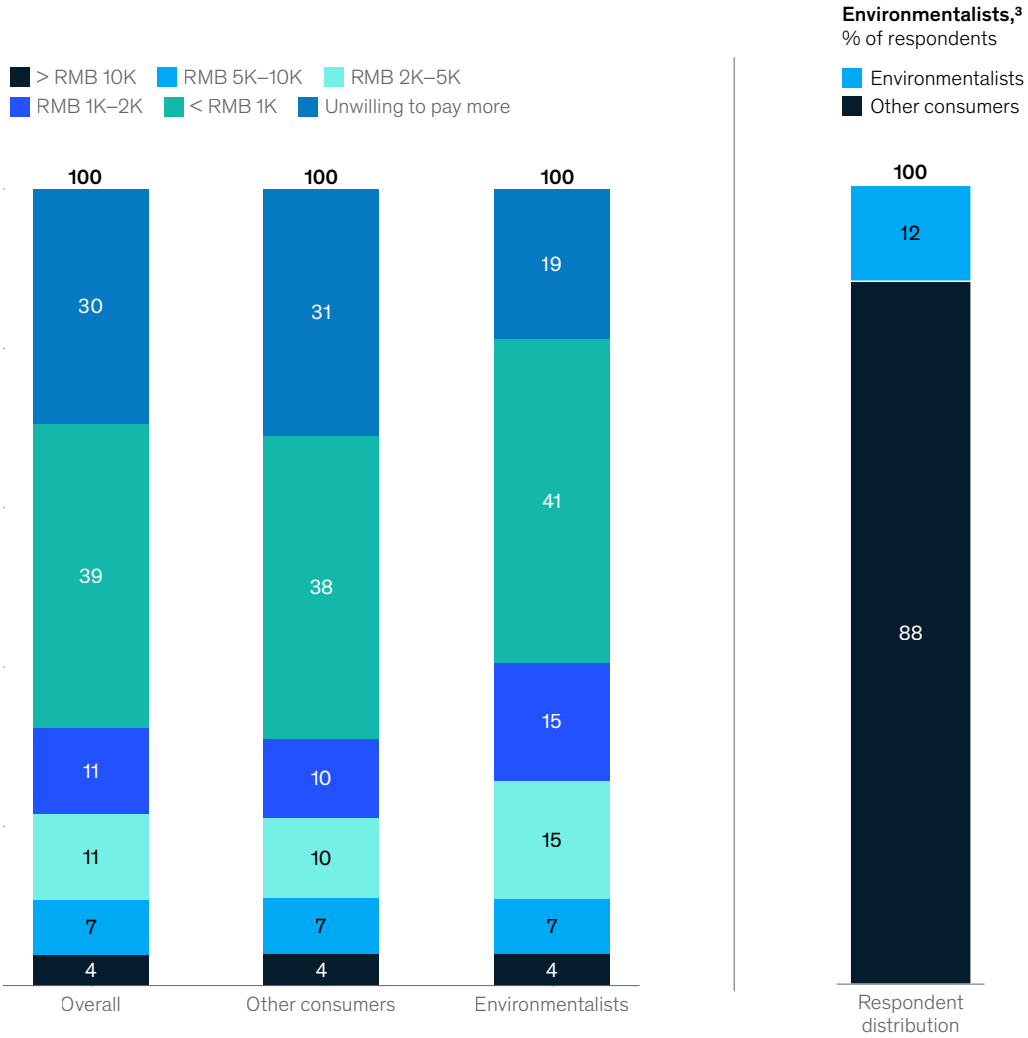
At the same time, the percentage of respondents willing to pay more for low-carbon cars among environmentalists (those who consider environmental protection as the number-one reason to buy an EV) reached 81 percent, which is significantly higher than the overall acceptance among BEV owners and intenders of 70 percent (Exhibit 29). Thus, the support from both high-income groups and environmentalists will be a major encouragement to the establishment and promotion of low-carbon cars.

Exhibit 29

Environmentalists have shown a higher willingness to pay for low-carbon cars than the average.

Consumers' willingness to pay more for low-carbon cars,[1] by extra amount in RMB thousands, % of respondents[2]



Note: Figures may not sum to 100%, because of rounding. At the time of publication, RMB 1 = $0.15.
[1]Refers to cars that achieve decarbonization by lowering greenhouse gas emissions from the full life cycle of a vehicle, from raw materials and assembly to daily operations.
[2]Includes only battery electric-vehicle (BEV) owners and consumers who are considering a BEV for their next car.
[3]Environmentalists are consumers who consider environmental protection as the top reason to buy an EV.
Source: McKinsey China Auto Consumer Insights 2023

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Summary: Implications for OEMs

Based on our survey insights, OEMs may benefit from implementing a targeted business transformation that focuses on their responses to three rapidly evolving trends:

1. **The shift to electrification is irreversible.** Electrification in the Chinese market is ongoing and permanent. OEMs that hesitate to accept this change may become significantly less competitive over the medium- to long-term.
2. **Brand strategies are evolving.** For many years, Chinese consumers have been willing to pay premium prices for multinational brands. Today, however, multinational OEMs may need to adjust their pricing strategies as their brand shares decrease and Chinese consumers become increasingly reluctant to pay a premium for their vehicles. Traditional multinational OEMs may benefit most from accelerating the search for a new pricing "anchor" in the era of smart EVs. Meanwhile, Chinese OEMs should primarily focus on reinforcing traditional selling points, such as advanced technology options and an extensive range of features. They might also consider strategies to increase the emotional appeal of their brands while gradually narrowing the price gap with multinational brands.
3. **Omnichannel operations are more important.** In the era of traditional ICE vehicles, OEMs paid more attention to near-term sales targets than long-term customer satisfaction, but this strategy may not deliver the same benefits as smart EVs gain market share. OEMs may phase out conventional distribution models for various reasons, including a lack of interest among younger consumers for traditional retail and service models and the success of EV disruptors with DTC models. As they evolve, OEMs must accelerate their omnichannel operations to ensure consistent online and offline experiences. They should also explore distinctive strategies to enhance customer satisfaction.

In addition to these three trends, which are most likely to have an impact over the near term, our survey suggests that three accelerating shifts will have a clear impact in the medium-to-long term:

1. **Value creation over the full vehicle life cycle is becoming more critical.** In addition to traditional business areas, such as car sales, financing, and after-sales, OEMs urgently need new business models. Software subscriptions, DTC models, and other innovative solutions could create value if OEMs can quickly identify possible monetization opportunities, develop action plans, and move to implementation.
2. **Acceptance of low-carbon cars is growing.** As policy makers increasingly mandate decarbonization targets, OEMs are making the development of low-carbon cars a key strategic priority. Chinese consumers are gradually becoming more likely to consider such vehicles and are demonstrating a higher willingness to pay for them, which creates favorable conditions for OEMs to develop low-carbon cars.
3. **Smart features are becoming major differentiators for EVs.** Many OEMs have relied on key components—the engine, gearbox, and chassis—to differentiate their ICE vehicles in the Chinese market. But in the era of EVs, it is becoming more difficult to create differentiated mechanical specifications. When purchasing premium EVs, Chinese consumers are increasingly likely to make smart features, such as ADAS, connectivity, and voice control, a core consideration. OEMs must respond to this trend by accelerating the launch and update of smart functions, either independently or through codevelopment with technology companies.

Based on the above three major trends and three accelerating shifts, we believe the following four suggestions may help all OEMs that aspire to win in the Chinese automotive market:

1. **Reshaping and repositioning the brand.** OEMs now have multiple brand offerings and product choices for Chinese consumers, and it is becoming increasingly difficult to stand out in this crowded market. To attract consumer attention and develop their brand images, OEMs should strive for differentiation—for example, by offering EVs with smart features and a low carbon footprint. They could also distinguish themselves by improving the overall customer experience.
2. **Balancing investments and returns for EVs and smart features.** EV manufacturers cannot afford to lose money over the long term. To enhance profitability, they should explore multiple levers, including those related to design-to-cost, design-to-value, and agile R&D. They could also identify core control points on tech stacks and build relevant capabilities. Such actions are critical now because only profitable companies will be able to make sustainable, long-term investments in the smart-EV field.
3. **Developing omnichannel operations that integrate online and offline services.** Many OEMs want to implement omnichannel operations and integrate their online and offline offerings. Accomplishing this goal will require drastic changes to all aspects of their organizations, including the overall vision, corporate culture, organizational structure, KPIs, and daily operations. OEMs should also develop tailored mechanisms that consider their unique needs and capabilities, rather than simply imitating others.
4. **Pursuing new business models.** In the near term, OEMs can explore new business models by collaborating with other leading companies along the value chain. Over the longer term, they must build their internal capabilities and establish control over their own business models.

The age of ICE vehicles in China is fading, and the era of smart EVs has arrived. As consumer mindsets change and new technologies advance, many of the so-called golden rules are being subverted and reshaped. Facing such drastic changes, some OEMs have already left the market, and others may follow. Simultaneously, new players will emerge, potentially increasing competition. The companies most likely to succeed are those that are willing to fully transform their products, brands, operations, organizational structures, and more.

Thomas Fang is a partner in McKinsey's Shanghai office, where **Tony Zhou** is an associate partner; **Mingyu Guan** is a partner in the Beijing office; and **Bill Peng** is a partner in the Hong Kong office.

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