



FIVE WAYS TO WIN IN CHINA'S CHANGING MOBILITY MARKET

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This article is part of BCG's research on the future of automotive, a series of publications focusing on new technologies that are transforming the industry. Here, we examine the changing role of foreign automotive manufacturers in China as the country shifts to a new era in mobility. The [Reimagined Car](#) looked at how shared autonomous electric vehicles will change mobility in the US. [The Electric Car Tipping Point](#) focused on the evolution of powertrain technologies, and [Where to Profit as Tech Transforms Mobility](#) examined the impact of technological change on industry profit pools.

THE WORLD'S LEADING AUTOMOBILE manufacturers have benefited immensely from their relationships with China. First, the country was a source of low-cost components. Then, for the past decade, it has been the world's largest car market. However, a new era has begun. News headlines warn that China has been experiencing a slowdown in car sales since 2018. But a potentially greater threat to the best-selling foreign brands in China comes as the country shifts from traditional mo-

bility to new mobility. Domestic automakers and tech companies, with strong support from the Chinese government, are well positioned to become the dominant players in this new era.

Foreign automakers will find that their advantages in vehicle design, engineering, and manufacturing are no longer enough to give them an edge when on-demand mobility and autonomous and electric vehicles will be ubiquitous. Foreign OEMs can still bring distinctive capabilities to the Chinese market, though, and find opportunities to win. But doing so will require a new approach: a China 2.0 strategy that enables companies to act fast, take bold steps, and self-disrupt long-held business models. In this article, we discuss what is at stake for foreign players in China's mobility evolution and the actions that these companies should take now to secure their positions well into the future.

Game-Changing Trends

China's emergence as the world's largest automotive market was swift, with sales of

new vehicles increasing from 8 million in 2007 to 27.1 million in 2018, having peaked at 28 million in 2017. Most of these sales were cars made by popular foreign OEMs. (See Exhibit 1.) Even though car sales fell in 2018 and have continued to be sluggish in 2019, China's importance to foreign automakers' global sales volumes cannot be understated. In 2018, the Chinese market was responsible for half of all global sales for Volkswagen, the country's most popular foreign brand, and nearly half of GM's, according to Volkswagen and Statista, respectively.

Given the magnitude of auto sales volumes, the government's long-standing requirement that foreign automakers set up joint ventures (with 50% owned by a domestic partner) had been an acceptable price for operating in China. Then in April 2018, the government announced that foreign-holding ratios would be phased out by 2022, enabling a foreign automaker to own 100% of its China operations. It seemed that the market for traditional vehicles was becoming more accessible than ever. But in reality, in the years ahead, foreign companies will face formidable new barriers. The industry in China is shifting, and domestic competitors have positioned themselves as global leaders in disruptive transportation technologies.

For foreign automakers to continue their extraordinary success in China, they will

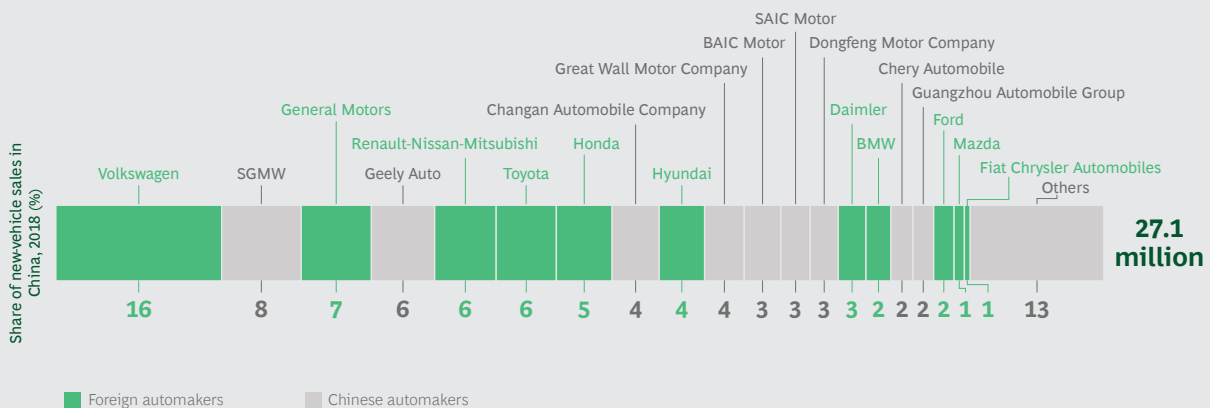
need to rethink the ways they do business. In particular, they will need to adapt to three trends—on-demand mobility, autonomous vehicles, and electric vehicles—that are reshaping the mobility sector and upending profit pools.

On-Demand Mobility. China is the largest ride-hailing market. It accounts for nearly half of the trips worldwide that are taken daily using a ride-hailing service. We see tremendous room for more growth, considering that ride-hailing companies have barely penetrated the potential market. Shanghai alone has the potential to double its on-demand mobility market in the decade ahead, as ride-hailing companies begin to use autonomous vehicles. (See Exhibit 2.)

Yet new entrants will find it very difficult to break the hold that Didi Chuxing has established in less than four years, acquiring more than a 90% share of the current market. Claiming more than 550 million registered users and 31 million drivers at the end of 2018, Didi has become a mainstream mode of transportation. Didi stands to gain an even greater advantage as China pushes to relieve urban traffic congestion by promoting ridesharing over individual car ownership.

Didi started out with substantial funding (from Tencent, among others) and grew

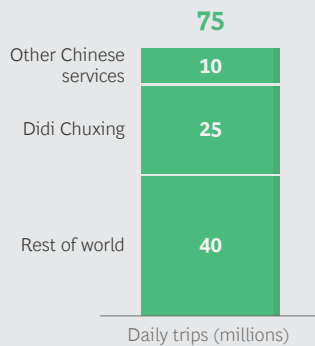
EXHIBIT 1 | Popular Foreign Automakers Made Up 53% of New-Vehicle Sales



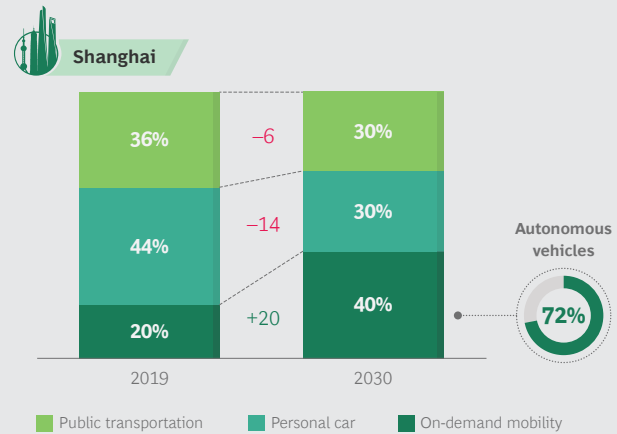
Source: IHS Markit.
 Note: Because of rounding, the percentages don't add up to 100%.

EXHIBIT 2 | The World's Largest Ride-Hailing Market Has Room to Grow

China accounts for almost half of the world's daily trips that are taken using a ride-hailing service



The percentage of the population that embraces on-demand mobility as the primary mode of transportation could double by 2030 in some Chinese cities



Sources: World Economic Forum; BCG analysis.

rapidly by building its network and acquiring competitors. After a costly price war with Uber, Didi acquired Uber's China operations in exchange for a 17.7% stake in Didi. Since then, it has continued to consolidate the market further. Food delivery unicorn Meituan Dianping was another competitor that halted its expansion owing to Didi's dominance.

Now Didi is expanding, becoming increasingly integral to China's transportation ecosystem and smart-city goals. For example, Didi has conducted pilots in 20 Chinese cities of the Didi Smart Transportation Brain—a technology based on artificial intelligence (AI) that optimizes traffic flow by changing the direction of traffic lanes at busy times. The company's vast service network and broad product offerings give it the advantage of having the most extensive and detailed data set on transportation and traffic patterns in China. Moreover, there is little or no opportunity for foreign-owned companies to compete in smart-city development. For security reasons, China restricts foreign involvement in the necessary research and surveying. With such a dominant incumbent continuing to parlay its strengths, China will prove a challenging market for foreign companies looking to enter on-demand mobility.

Autonomous Vehicles. The Chinese government has set a target for 50% of all new vehicles sold by 2020 to be partially autonomous and 15% of those sold by 2025 to be highly autonomous. A June 2018 study on urban mobility, which was conducted by the World Economic Forum and BCG, found that 75% of the Chinese consumers surveyed said that they'd be likely or very likely to ride in an autonomous vehicle (AV), especially for the conveniences it offers in heavy traffic.

China already has much in place to achieve its goals. In 2013, Baidu, one of the country's three tech giants, was the first to launch an AV program in China. Then in 2017, the government announced that Baidu would take the lead on AVs as part of the AI National Team, which is tasked with helping China become a global force in AI. Over time, an AV ecosystem has emerged in China, largely owing to Baidu's early efforts and to many of its alumni founding the best-funded startups in the space: Holomatix, JingChi, Pony.ai, and TuSimple. In the past few years, Baidu's two fellow tech titans Alibaba and Tencent, along with Didi, have also launched their own programs.

Yet for all of this activity, Baidu remains at the forefront, having created the Apollo

open-source autonomous-driving platform with a \$1.5 billion investment. First announced in 2017, the platform has more than 130 partners and now owns the world's largest open-source data set for autonomous-driving technology. Baidu has said it wants Apollo to become the Android of the auto industry. Baidu is not planning to manufacture the hardware—the vehicles—but any automaker with a plan to introduce AVs in China will most likely have to sign on to the Apollo platform to access its vast storehouse of data. As in smart-city development, having large data sets about transportation and traffic patterns are critical to developing AI that can safely navigate driving conditions in China. More data means better, faster machine learning, which will enable Baidu and its partners to have superior algorithms and, thus, more-reliable self-driving technology on Chinese soil.

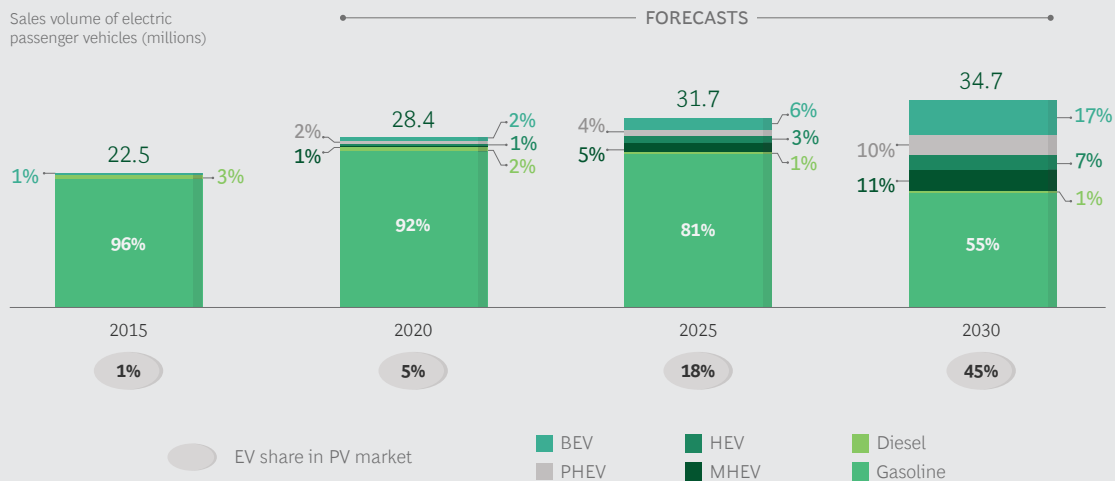
Although Apollo is available for all players to use and modify to their needs, foreign OEMs are at a distinct disadvantage, compared with their domestic competitors, when it comes to the ability to map Chinese roads. To create the highly precise maps needed for AVs, known as high-definition maps, a company must have an electronic navigation map license from

China's National Administration of Surveying, Mapping, and Geoinformation—a license that only 14 Chinese entities presently hold. Although many foreign OEMs have strong AV programs in their domestic markets, their expertise won't take them very far in China if they can't build in local mapping data.

Electric Vehicles. In its campaign to combat urban air pollution, one of China's top priorities is to encourage consumers, on-demand fleet owners, and public transportation systems to adopt electric vehicles (EVs). The country is now the world's largest EV market. The volume of EVs grew at more than 100% year-over-year from 2013 through 2018. BCG estimates that sales of EVs will account for almost half of all new vehicle sales by 2030 and that total sales of EVs will top 5.5 million by 2025. (See Exhibit 3.)

The growth of the EV market is due in large part to a combination of government incentives that have been specifically designed to boost the domestic industry: subsidies to domestic EV players and incentives to buyers. For example, owners of more than 400 types of electric vehicles made in China are exempt from the national vehicle and vessel tax, which can run as

EXHIBIT 3 | Government Incentives Have Boosted the Sales Volume of Electric Vehicles



Source: BCG analysis.

Note: EV = electric vehicle; PV = passenger vehicle; BEV = battery electric vehicle; HEV = hybrid electric vehicle; PHEV = plug-in hybrid electric vehicle; MHEV = mild hybrid electric vehicle. Because of rounding, not all percentages add up to 100%.

high as several thousand yuan. China intends for 80% of its EVs to be Chinese-made by 2025, and its booming EV sector is essentially devoid of foreign competition. Nearly 373,000 EV passenger cars were delivered into the Chinese market in the first six months of 2018, according to industry estimates, but only 15,000 were imports.

Chinese EV startups are also leading the race within the industry for investment capital. According to Pitchbook Data, more than \$15 billion was invested in Chinese-owned EV startups from 2014 through the first quarter of 2019, compared with a little more than \$6 billion in EV startups in the US in the same period.

In fact, activity in this sector was so strong that in late 2018, concerns began to mount that the EV sector was at risk of becoming overheated. In response, China enacted restrictions on production for domestic companies. The government also scaled back its subsidies to manufacturers along with regulations that favor domestic battery manufacturers. Although domestic EV sales dropped this year without the subsidies, and some are now saying China may have overreached, the medium-term to longer-term outlook remains very strong. In addition, China expects its domestic manufacturers to stop depending on government assistance and start competing more on innovation—using their newfound advantage in EV production, they could penetrate domestic market segments that have historically been strongholds for foreign automakers.

The China 2.0 Strategy

Foreign vehicle manufacturers are facing an era of unprecedented changes and challenges in China. Winning will require embracing a new strategy that is both bold and nimble—a strategy that leverages OEMs' core advantages and capabilities, enabling them to make decisive bets and, at the same time, adapt to sudden changes and disruptions. Our roadmap below lays out five key actions that will help automakers build the foundation for a successful China 2.0 strategy.

Embrace the core. Leading foreign automakers in China have core advantages and capabilities that will continue to be vital for many years to come, even as the landscape rapidly changes. Although it is important to explore ways to capture a greater share of the new mobility market, such efforts should not be made at the expense of the traditional core business areas of designing, manufacturing, and selling vehicles, because these profit pools will continue to be substantial in the decades ahead. Furthermore, it is in these areas that foreign automakers possess their most distinctive capabilities and advantages that grant them the right to play in new mobility, albeit more indirectly. In short, should foreign automakers neglect their core, they put at risk their very future in China.

OEMs' brands are one such advantage—they still hold exceptional value. China's domestic players will welcome the opportunity to partner with well-known foreign automakers in new mobility ventures because their brand prestige is still close to priceless and will be a key source of differentiation in an otherwise crowded field. Two other advantages are quality mass manufacturing and scale. These will position OEMs to be advantaged in building vehicles for mobility as a service (MaaS) fleets—vehicles that will be of the quality needed to withstand the demands of being driven upwards of 80,000 miles per year.

Although these strengths are unlikely to be sufficient for a foreign automaker's own end-to-end MaaS offering, they are the source of capabilities that many domestic Chinese mobility companies will need to distinguish themselves in an increasingly competitive new domestic mobility market. That, in turn, will allow foreign automakers to secure meaningful production volumes, further strengthen their brand, and secure access to increasingly important data on rider behavior.

Adopt an enterprise portfolio approach. Before making bets in China, a foreign OEM should determine how the ventures fit with the company's entire global business port-

folio. Rather than chasing growth—entering China’s new mobility market simply because it is expected to be big—foreign automakers should evaluate emerging opportunities against their full range of global options. They should then allocate resources on the basis of a thorough understanding of their right to win and the expected value of each opportunity.

Foreign OEMs that do decide to make a bet on China should bet big. All too often, we see automakers fragmenting their resources (capital, time, and people) by making many small moves that in each case fall far short of what more-focused pure-play companies are capable of achieving. Although there can be a role for small “sensing” bets that help companies learn and create options, or for bets that build capabilities, we recommend limiting these wherever possible, because such bets often turn into distractions and yield little in return. In these highly competitive markets, it is critical that bets ultimately be big enough to matter.

Embrace a new breed of partnerships.

Given the competitive market dynamics, foreign automakers will find it difficult to carve out a standalone position as a new mobility provider. Local partnerships will be key to gaining a foothold. Foreign players will need to be highly selective, however, and identify which domestic companies will be the likely winners in China’s evolving mobility market; seeking partnerships accordingly will be key to longer-term success.

Foreign OEMs should also consider investing in smaller emerging Chinese companies, particularly registered EV startups (which Bloomberg News estimates at nearly 500) and small technology providers (which are estimated to number in the hundreds). Though many of these companies have strong venture capital backing, a number of early investors will be seeking exit strategies in the next three to five years. For foreign automakers seeking to innovate for the Chinese market, these startups can provide the needed human capital—engineers, software developers,

and others who can help carve out a competitive edge.

What value do partnerships with foreign OEMs hold for domestic players? In addition to access to a brand, manufacturing know-how, and technology, often the answer is access to their home markets. Selling into global markets has long been the aspiration of leading Chinese domestic players, and those foreign automakers that are most aggressive in viewing partnerships as true global alliances will find themselves able to choose from the most attractive set of potential partners.

Design a new operating model for China.

Winning in China requires strategic bets as well as an operating model that allows a company to turn on a dime. The organization must be nimble and flexible to keep ahead of technology trends and respond quickly to external factors, such as policy changes, market signals, consumer trends, and trade economics.

Multinational corporations are accustomed to having the home office make strategic decisions about their China operations. Now, though, the fast pace of change requires having more decision makers on the ground and giving them the authority to act quickly as new opportunities arise. More than ever, it is essential to tap into local markets for intellectual capital and strategic relationships. Developing and recruiting local talent is an efficient way for foreign players to put a market-savvy team in place; launching initiatives such as incubators, accelerators, and university programs is an effective way to expand the local talent base.

Apply lessons from China to make their home-market businesses better.

Given the pace of change in China, foreign automakers have no choice but to embrace more agile ways of working in order to meet the demands for more rapid innovation and far-shorter product development cycles. Whereas in decades past foreign automakers imported world-class processes and capabilities into China, today, many Chinese companies operate at a level of

organizational efficiency that makes them the envy of foreign competitors. In fact, Chinese automakers are continually setting new benchmarks. As such, while foreign OEMs' China operations must have greater autonomy to be as agile and nimble as needed, mechanisms should also be put in place to facilitate a more efficient and effective exchange of lessons and capabilities with their respective home markets. Much can be learned from how business is done in China, and the sooner foreign automakers embrace these new ways of working, the better.

THE BATTLE FOR dominance in China's mobility market is growing fiercer by the day. To win, foreign automakers will have to act fast and self-disrupt long-held business models that hinder their ability to quickly respond to technology trends and market changes. At the same time, foreign OEMs must continue to invest in the competitive strengths that made them the dominant global players they are today. By implementing a China 2.0 strategy that is bold, flexible, and proactive, foreign automakers will continue to help shape the future of mobility in China.

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