



A new relationship – people and cars in China

How Chinese consumers want cars to fit their lives

IBM Institute for Business Value

Executive Report

Automotive

How IBM can help

Today's cars are evolving from a mode of transport to also serve as a new kind of moving data center with onboard sensors and computers that capture information about the car. Using such real-time data, IBM helps auto executives provide new services that the connected consumer needs and expects from the car experience. Our combined strength in manufacturing and depth of global automotive expertise can address consumer concerns about safety and quality. Innovative technologies such as Watson for analytic capabilities can meet OEM and supplier needs, including products and services that are more secure and reliable to enable higher brand loyalty and customer satisfaction. Please visit ibm.com/industries/automotive.

Driving in the next decade

Conventional automotive (auto) industry wisdom warns executives that people are losing interest in cars. However, our analysis of findings from over 16,000 respondents clarifies that people will engage with cars — and cars with people — in new ways. The car will remain a key fixture in personal transportation. For Chinese consumers, the importance of owning a car remains high; however, they don't necessarily need to own one in the traditional sense. Consumers in China, as well as in the rest of the world, are ready for industry innovation that deepens their connections with cars and the expanding Internet of Things (IoT). And so, new mobility options will soon transform Chinese consumers' lives and expectations.

Executive summary

Digital technologies, lifestyle expectations and personal mobility options are changing the outlook on how Chinese consumers move around, as well as what they expect from companies that provide mobility solutions. Innovations in how these consumers travel from one point to another, combined with their levels of “digital mobility interest,” determine how open and ready they are for mobility solutions. Clearly, auto industry executives have a tremendous stake in understanding what current and future Chinese auto consumers already do, as well as what they say they plan to do.

For this second part of our “Auto 2025” series, we surveyed 16,469 consumers equally distributed across 16 countries, including China, to develop an informed view of how they will own and use vehicles over the next decade. This report reveals important Chinese consumer perspectives, along with those of the other consumers in our study, based on survey responses. In search of greater effectiveness, efficiency and safety, consumers expect intuitive, automated and personalized mobility experiences through digital capabilities and services. Chinese consumers also expressed a greater desire to both co-create mobility solutions and buy vehicles through preferred channels and ecosystem participants.

One recurring and notable difference of opinion: consumers in China and other growth markets were consistently more eager to try vehicle and mobility innovations. They base their decisions on perceived value, in contrast to mature-market consumers who seem content to wait for proven value. The reaction of consumers in China and other growth markets to new technology can be summed up as a “When can I have it?” mentality. Those in mature markets are more hesitant, with responses that reflect the question, “Why do I need it?”



92% of the Chinese consumers we surveyed **expect to own or drive a car** in the next ten years.



Chinese respondents 35 and older **expect their use of personal cars as their primary mode of transportation to drop by 17%** by 2025, but anticipate their use of car- and ride-sharing will double.



44% of Chinese respondents were **very interested in submitting ideas** to co-create new automotive products and mobility services.

The first report in our series, “Automotive 2025: Industry without borders,” featured the opinions of 175 global industry executives (9 percent from China) including OEMs and suppliers.¹ It suggested three disruptors to the industry over the next decade: empowered consumers, changing mobility models and a transforming ecosystem.²

This new report details our analysis of what Chinese consumers and other consumers worldwide said about the industry — particularly, how they personally expect to use vehicles in the next ten years. Even the meaning of “driving” is expanding beyond “steering a vehicle” as the consumer’s relationship with the car is changing. In the future, the car will know who the occupants are, make decisions for them and may even be a trusted companion. Consumers in China are eager to welcome the car as another smart device — albeit one weighing 1,500 kilograms — that is embedded in the IoT.

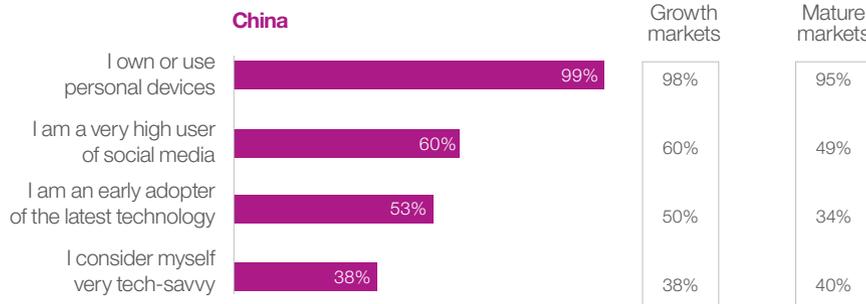
Chinese consumers reveal their changing requirements

Digital maturity of Chinese consumers

Still often complicated to use, digital vehicle technologies will remain less attractive to those consumers who don't see themselves as tech-savvy early adopters. Chinese consumers assessed their tech-savviness at 38 percent which is similar to the global averages (38 percent of growth-market respondents, versus 40 percent in mature markets), and their ownership or use of personal devices is 99 percent (98 percent growth, 95 percent mature). When comparing China and the other growth markets to mature markets, the most striking digital maturity differences are apparent in social media use and how many respondents identify as "early adopters" (see Figure 1).

Figure 1

Indicators of maturity in using digital technologies



Sources: Percentage who said "Yes." Q19. Do you own/use any personal devices (for example: smart phone, tablet, laptop)? Q18a. Percentage of respondents who "highly agree" with each of the three statements: I am a very high user of social media. I am an early adopter of the latest technology. I consider myself very tech-savvy.

Notably, a higher percentage of Chinese females rated themselves as early adopters than males (56 percent versus 51 percent) and as high users of social media as well (66 percent versus 56 percent). This suggests that females may be greater influencers via social media – an insight auto companies should consider leveraging.

I want new ways to own my car

Chinese consumers want the convenience of cars, but are looking for new options beyond the traditional ownership model. Eighty-seven percent of people we surveyed from China said they will own a car sometime during the next ten years — this includes some of the 7 percent of people who said they couldn't afford to buy a car today. Another 5 percent said they will not own a vehicle, but will still be actively driving. Traditional ownership models will not meet the future expectations of consumers from China, as 50 percent are very interested in subscription pricing and 31 percent even said they were very interested in fractional ownership of vehicles. Alternative ownership options will especially be important as first-time buyers start considering the purchase of a second car.

I can get around in new ways

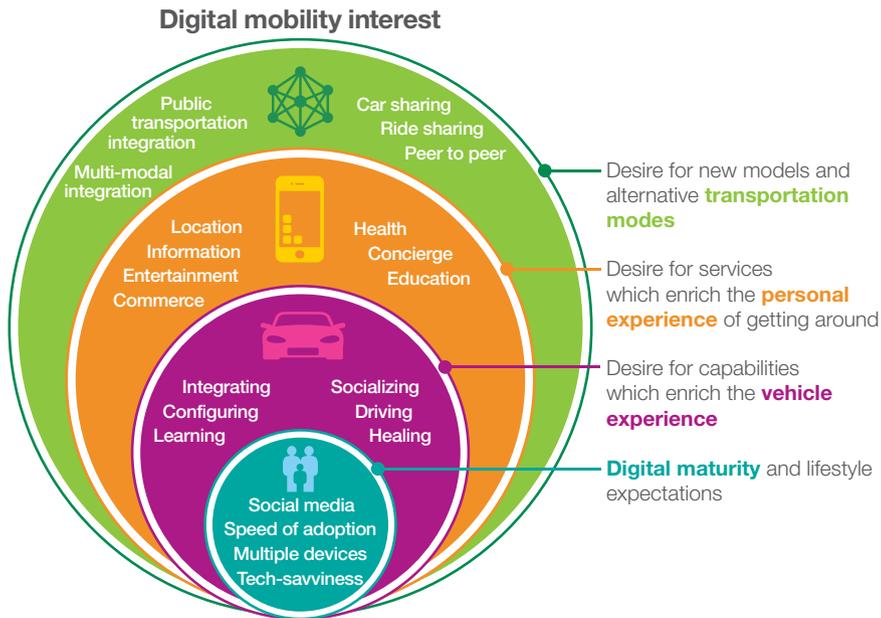
The personal car as the primary mode of transportation will continue to be a key fixture in personal transportation, but the priority of when it is used will change. Those ages 18–24 start at a low level of car usage — only 23 percent use a personal car today as their primary transportation mode (31 percent for males, 16 percent for females), versus about 63 percent in other age groups. But for the coming decade, there will be a 219 percent increase in the use of the personal car as the primary mode of transportation for young drivers (69 percent for males, 79 percent for females), compared to a decline of 17 percent for Chinese consumers over 35 years old. For this older age group, the shift to car- and ride-sharing will increase by 108 percent by 2025.

Match the “bells and whistles” with what I am interested in

In-vehicle digital technology is still complicated and not easy for all to use. Understanding Chinese consumers based on their mastery of digital mobility technologies gives greater insight into groups of consumers with like interests, attitudes and expectations. “Digital mobility interest” is a way to understand consumers' views based on their digital maturity and their interest in future mobility solutions (see Figure 2).

Figure 2

Digital mobility interest provides an understanding of the attitudes and expectations consumers will have for future mobility solutions



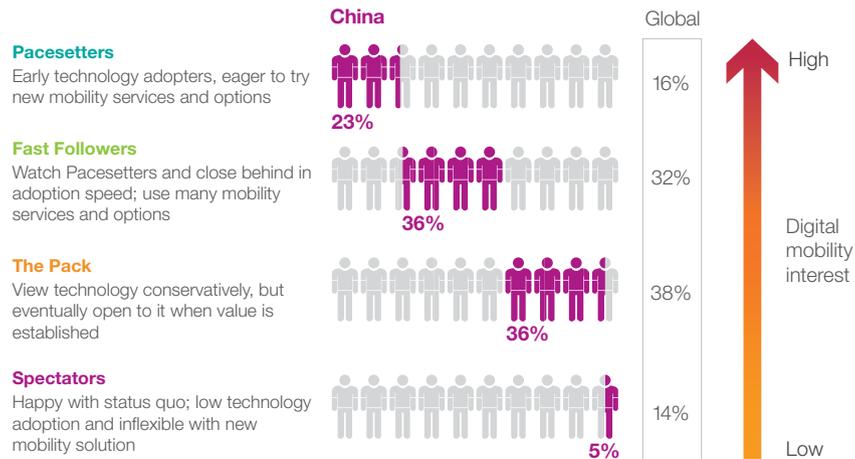
Source: IBM Institute for Business Value analysis.

Consumers from China who ranked themselves higher in digital maturity had greater expectations for the new digital innovations in vehicle and mobility services. The connected capabilities in the vehicle are still underutilized due to complexity and lack of automation. Consumers who have a higher understanding of technology are more likely to use the connected features than those who don't. Having a higher level of digital maturity could drive greater expectations for new digital innovations. Automakers who appreciate this can do a better job of matching consumers to digital technologies — which, in turn, should drive greater satisfaction with the in-vehicle experience.

Four types of consumers groups have emerged based on their digital mobility interest (see Figure 3). The Pacesetter and Fast Follower groups are the most technologically advanced and together represent 59 percent of China study respondents versus 48 percent globally. Surprisingly, of that 59 percent, over two-thirds were from the 25–44 age group rather than from the 18–24 age group as one might expect. The Pack, which is a significant group at 36 percent (versus 38 percent globally) is somewhat hesitant about future mobility capabilities and services. But this group has the potential to be influenced once they have a better understanding of the value they will receive.

Figure 3

Cluster analysis shows four distinct consumer groups based on their degree of digital mobility interest



Source: IBM Institute for Business Value analysis.

Understanding Chinese consumers through clustering based on their levels of digital mobility interest gives automakers a better chance of aligning consumer abilities with vehicle capabilities — starting from the initial steps of the sales process and continuing through vehicle usage. These clusters exist across all of the demographic and geographic groups in the survey, and are unbiased with regard to specific age or economic segments.

Recommendations: Consumer requirements

Deliver solutions to meet future vehicle usage shifts

- *Develop new ownership models that meet Chinese consumer expectations and create alternative revenue streams.* Explore similar models seen in other industries. Use partnerships and technologies to acquire enabling capabilities, as needed.
- *Create a flexible, innovative brand experience.* Develop a mobility platform to integrate the use of the car with other transportation options. Create an open platform through which mobility partners can include their offerings.
- *Enable prescriptive decision making to optimize transportation choices.* Leverage deep analytics and cognitive capabilities to present recommended options. Integrate the Chinese consumer's "mobility persona" to create a more personalized experience.

Appeal to Chinese consumers through their levels of digital mobility interest

- *Segment the digital experience.* Create consumer profiling scenarios and digital segmentation models as sophisticated as traditional physical segmentation models. Identify consumers based on their levels of digital mobility interest and use this understanding to better match them to the appropriate levels of technology in a vehicle, as well as other suitable mobility solutions.
- *Focus on those who are "digitally interested."* Target the Pacesetters and Fast Followers when introducing digital innovation. Approach these groups for initial responses and then refine new offerings. Build advocates and use them to influence others.
- *Convince the others.* Influence The Pack and even The Spectators with additional information, experiences and demonstrated proven value. Continue to simplify, automate and personalize the digital experience to gain trust and acceptance.

Mobility experiences

Clamoring for self-enabling vehicles (SEVs)

Consumers from China show a high level of interest in the intelligent, intuitive, self-enabling innovation that 71 percent of Chinese industry executives (80 percent globally) said would be a key differentiator by 2025.³ We surveyed consumers on their SEV preferences (see sidebar, “Six SEV groups”). These cars can “take care of” their occupants and themselves, and work with other vehicles and IoT components.

SEV innovations include a range of enhanced car functionality. Leading automakers and suppliers are already developing innovative offerings:

- A major Japanese automaker’s self-healing cars will repair small paint scratches within an hour and deeper scratches within a week.
- A major European automaker’s self-socializing car communicates its positions to traffic lights. The traffic management system then suggests the optimal speed to reach the light when it is green — which saves gas and lessens environmental impact.
- A major Chinese automaker and internet company’s self-learning cars learn habits of its driver and offer recommendations to optimize the use of the car.
- A major U.S. supplier provides self-integrating capabilities to enable drivers to control aspects of their homes, such as opening security gates and garage doors, illuminating exterior and interior lighting, activating appliances and disarming home security systems.

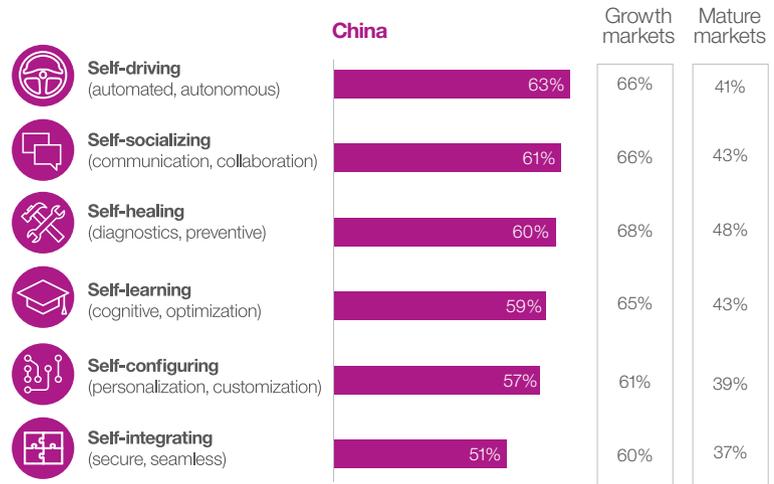
Six SEV groups:

- *Self-healing.* Vehicles fix and optimize themselves without human intervention based on certain events or situations.
- *Self-socializing.* Vehicles connect with other vehicles and the infrastructure around them to share information and solutions.
- *Self-learning.* Vehicles use cognitive capabilities to learn behaviors — of driver, occupants, the vehicle itself and the surrounding environment — to continually optimize and advise.
- *Self-driving.* Vehicles will become highly automated, with some areas of limited autonomous function in controlled environments.
- *Self-configuring.* Individual mobility personas contain necessary (and occupant-authorized) digital information about individuals to provide the desired, personalized vehicle experience.
- *Self-integrating.* Like other smart devices, the vehicle will be an integrated component in the IoT.

Chinese consumers were very interested in all aspects of SEVs, selecting self-driving capabilities most often (cited by 63 percent). Females were even more interested in self-driving at 67 percent versus males at 60 percent. But even the least-selected SEV capability, self-integrating, was named by 51 percent of consumers (see Figure 4). Interestingly, while 10 of 16 countries placed highest priority on self-healing, the surveyed Asian countries ranked self-driving either first or second.

Figure 4

Growth market consumers consistently ranked self-enabling vehicle capabilities higher than respondents in mature markets



Source: Percentage of respondents who said they are “very interested.” Q7: What self-enabling vehicle capabilities would interest you in the future?

Mobility gets personal

Chinese consumer enthusiasm for mobility services supports the industry growth strategy that executives described in part one of our “Auto 2025” series: creating new services-based offerings.⁴ Information services (like those for weather and traffic), as well as entertainment services (such as those for music or video streaming) had the highest consumer interest at 54 percent, while education services (like those for education videos and materials) were the least desired at 43 percent.

Information and health services (such as monitoring heart or blood pressure) ranked high across all age groups in growth markets. Information, entertainment (such as music, video and social media production) and commerce services (such as paying for tolls, parking and retail) held highest interest for mature markets. Location-based and education services had the lowest priority for consumers across all countries.

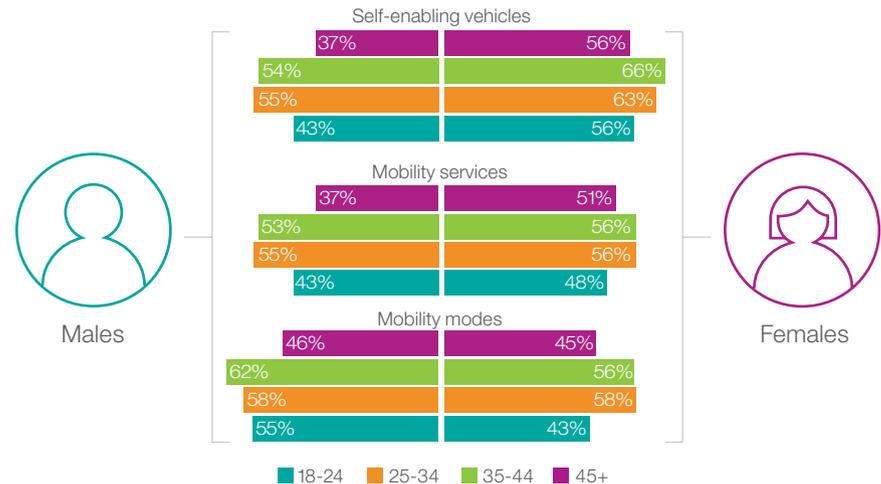
Alternatives alter driver lifestyles

The personal convenience of cars remains highly attractive to Chinese consumers. Forty-eight percent said car sharing is a very important option and 45 percent like the on-demand ride-sharing model. Even peer-to-peer car renting was a viable option, with 45 percent saying they were very interested. Options for car sharing, on-demand ride sharing and peer-to-peer rental not only give consumers the convenience of using a car without owning, but they also give the owners of those cars the opportunity to get a return on their underutilized-auto investment. For Chinese industry executives, this underscores the need to find ways to help provide these and other new mobility solutions.

Comparing the three types of mobility solutions — self-enabling vehicles, mobility services and multiple mobility modes — females tend to show a slightly higher interest than males. In terms of age groups, Chinese consumers ages 25–44 have the highest interest between both genders (see Figure 5).

Figure 5

The 25-44 age group shows the highest level of interest in mobility solutions. Females show slightly higher interest than males



Sources: Percentage of respondents who said they are “very interested.” Q7: What self-enabling vehicle capabilities would interest you in the future? Q9: What mobility services would interest you in the future? Q10: What alternative transportation modes would interest you in the future?

Recommendations: Mobility experiences

Create personalized, in-vehicle services

- *Assure greater consumer adoption.* Develop digital experience configurators to align Chinese consumer interest with the desired in-vehicle digital capability. Actively promote and develop the full spectrum of self-enabling vehicle innovations that appeal to priorities of multiple consumer and geographic segments.
- *Assist consumers to explore more.* Provide in-vehicle cognitive discovery capabilities to recommend additional digital functionality that can enhance their digital experiences based on personal vehicle usage and mobility preferences. Develop multiple channels to deliver the recommendations and test consumers' interest.
- *Help those who need it.* Provide a "buddy in the dashboard" by using sensors and cognitive capabilities to understand when someone is having trouble, and then offer help. Leverage natural language capabilities to dialogue directly with the person.

Accelerate the development of mobility services

- *Concentrate beyond your traditional borders.* Create an innovation discovery process that reaches into other industries. Break down traditional barriers and seek non-traditional partners and disruptive business models for untapped opportunities. Be willing to share.
- *Make partnering an enterprise competency.* Implement a partner/alliance management capability that is institutionalized globally. Create a collaborative environment with shared value propositions. Simplify the process to engage both large and small partners.
- *Create a platform for success.* Embrace the open API economy to encourage new innovation. Provide multiple channels for both business partners and consumers to engage. Develop a strong ecosystem to assemble a full spectrum of mobility solutions.

Deploy to regional expectations

- *Understand the different viewpoints of “When can I have it?” versus “Why do I need it?”*
Leverage consumer acceptance based on “perceived value” versus “proven value.” Pilot new mobility solutions where the needs and expectations are higher.
- *Customize solutions since one size does not fit all.* Develop go-to-market strategies based on consumer priorities among different markets in China. Identify regional successes and proven value for faster expansion across all regions.
- *Uncover Chinese consumer expectation shifts.* Make the most of analytics to gain insights into changes in how people get around. Identify new mobility expectations. Share with your partners to proactively respond.

The ecosystem

“Invented here” takes a new direction

Creative deployment of digital and social technologies is compelling Chinese consumers to participate more directly in the creation of new mobility solutions. Fifty-three percent (compared to 39 percent globally) said they have participated in some sort of new product input with other industries, usually in the form of consumer panels or surveys.

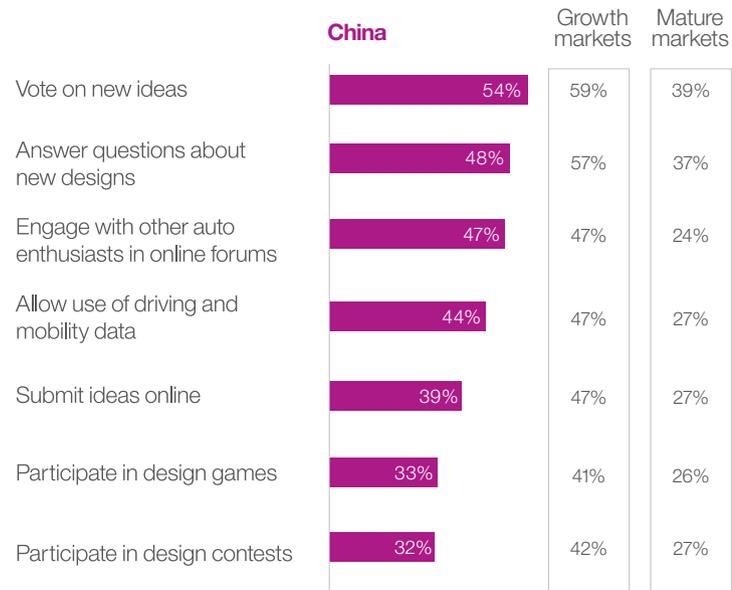
But deeper than those traditional types of engagement is the growing trend of involving consumers in co-creation of services and products (known as “crowd-sourcing”). Our respondents showed the highest interest in traditional engagement methods, such as voting on new ideas and answering questions about new designs (see Figure 6). But many Chinese consumers also want greater involvement through submitting ideas online and participating in design games and contests. Surprisingly, up to 44 percent (compared to 37 percent globally) of surveyed consumers from China said they would even be very likely to allow their driving and mobility data to be a source of design input.

Changing the retail paradigm

Shifts in Chinese consumer expectations will cause disruption in the retail process, both in how consumers are influenced and who they prefer to have assist them with purchases. Consumers rely on multiple channels to influence their buying decisions, but trust most those channels with a personal connection, such as word-of-mouth. This channel was cited by 75 percent of Chinese respondents as very influential, which was significantly higher than the global average of 45 percent.

Figure 6

Between one-third and one-half of surveyed Chinese consumers said they would be very likely to participate in co-creation activities to design new products, marketing/sales campaigns and mobility services



Source: Percentage of respondents who said they are “very likely to participate.” Q13, Q14 and Q15: How likely are you to participate in the following ways to co-create new products, marketing campaigns and mobility services?

Next most influential were online reviews by family, friends and other consumers (56 percent), followed by general online search, online opinions and OEMs, all at 45 percent. It is surprising that Chinese consumers put this much trust in OEMs, as other countries rate OEM influence lower at 31 percent. At the bottom of the list, even behind traditional media (40 percent), were dealers, named very influential by just 39 percent. Overall Chinese consumers are much more strongly influenced by all channels compared to the global average.

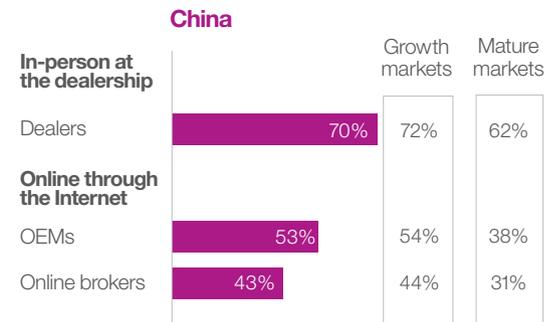
While the dealer will continue to play a key role in the purchase of the vehicle, OEMs and online brokers are emerging as increasingly important participants (see Figure 7). In China, 53 percent of consumers said they would be willing to purchase online from OEMs (see sidebar, “OEM sells cars directly online”) and 43 percent would consider purchasing online from third-party brokers. Even though these non-traditional channels garnered a high degree of interest, 70 percent of Chinese consumers still said it was important to buy in person from a dealership.

OEM sells cars directly online

A major Chinese OEM established a comprehensive e-business platform for selling cars directly to consumers. Through this channel, a consumer can specify and order a car directly from the OEM and have it delivered to the home or through a dealer of choice. Consumers can also purchase other products and services offered by the OEM through this platform. This service is currently available in over 70 cities across China.

Figure 7

While many consumers still show interest in the traditional buying model through the dealership, a large portion also would be interested in buying cars online directly from the OEM or online brokers



*Source: Percentage of respondents who said they are “very important.”
Q2: How important are each of these ways to buy a car, to you in the future?*

Recommendations: The ecosystem

Exploit your crowd to gain new wisdom and innovation

- *Create great Chinese consumer experiences.* Learn from other industries. Examine similar processes and technologies associated with consumers to incorporate and optimize for automotive.
- *Listen widely, analyze extensively and engage quickly.* Use technologies that are device- and time-independent. Apply engagement models that fit each targeted crowd's preferences. Follow up on Chinese consumer input and recognize people for their contributions and ideas that you use.
- *Deliver intuitive, meaningful and consistent digital experiences.* Work with partners to assure consistency across all touchpoints — regardless of who the consumer chooses to engage with.

Continue to transform the retail experience

- *Influence the influencers that matter most.* Improve your ability to influence through your own channels, but also explore other ways, through social media and analytics, to identify and then influence the influencers that Chinese consumers' trust most.
- *Provide omni-channel vehicle purchasing options.* Make pervasive use of deep data analytics to empower the sales force to deliver personalized experiences.
- *Create seamless access to your vehicle and mobility portfolio.* Actively work with dealers and non-traditional participants to adopt systems of engagement for Chinese consumer segments.

Are you ready to offer digital experiences and services that Chinese consumers desire?

- How will your organization apply analytics and cognitive capabilities to offer new transportation options?
- What is your plan to assess the digital mobility interest of different Chinese consumer groups you want to target? How will you use that information to customize valuable digital experiences?
- How will you identify and use the right channels to deliver recommendations to Chinese consumers, so you can test their interest in additional digital functionality?
- In what ways can you improve your innovation discovery process and strengthen your partnering competency to better serve the drivers and riders of tomorrow?
- How can your organization get more engaged in the borderless automotive ecosystem, and how can you better leverage the ecosystem to learn from other industries?
- Which social media and analytics tools can you use to reach more Chinese consumers and more influencers as you help transform the retail automotive experience?

For more information

To learn more about this IBM Institute for Business Value study, please contact us at iibv@us.ibm.com. Follow @IBMIBV on Twitter, and for a full catalog of our research or to subscribe to our monthly newsletter, visit: ibm.com/iibv.

Access IBM Institute for Business Value executive reports on your mobile device by downloading the free “IBM IBV” apps for your phone or tablet from your app store.

Related IBM publication

Stanley, Ben and Kal Gyimesi. "A new relationship – people and cars: How consumers around the world want cars to fit their lives." IBM Institute for Business Value. January 2016. <http://www-935.ibm.com/services/us/gbs/thoughtleadership/autoconsumer/>

Stanley, Ben and Kal Gyimesi. "Automotive 2025: Industry without borders — Engage with consumers, embrace mobility and exploit the ecosystem." IBM Institute for Business Value. January 2015. <http://www.ibm.com/services/us/gbs/thoughtleadership/auto2025/>

The right partner for a changing world

At IBM, we collaborate with our clients, bringing together business insight, advanced research and technology to give them a distinct advantage in today's rapidly changing environment.

IBM Institute for Business Value

The IBM Institute for Business Value, part of IBM Global Business Services, develops fact-based strategic insights for senior business executives around critical public and private sector issues.

About our research

We surveyed 16,469 consumers across the top 16 automotive markets: 8,207 (49.8 percent) from mature markets and 8,262 (50.2 percent) from growth markets. In building our sample, we required that at least 80 percent of respondents currently had a driver's license. We did not differentiate between living in cities or rural settings. Our main objective was to find people who use cars and learn how their attitudes may change over the next ten years.



About the authors

Ben Stanley is the Global Automotive Leader for the IBM Institute for Business Value. He is responsible for the development of thought-leadership content and strategic business insights for the IBM automotive industry practice. Ben has over 37 years of experience and has worked with major automotive clients around the world in the areas of business strategy and business model innovation. From 2009 to 2014, Ben lived in Shanghai, China, and led the IBM Automotive Center of Excellence. Ben can be reached at ben.stanley@us.ibm.com and you can follow him on Twitter [@BenTStanley](https://twitter.com/BenTStanley).

Eric Chen is an automotive industry leader in the IBM Greater China Group. He leads the development and deployment of diversified industry solutions for China domestic clients as well as for multinational enterprises in the automotive industry. Eric has over 20 years of experience working in industry and solution strategy and sales. Most recently he has helped top Chinese automotive OEMs transform into the new cognitive/digital world. Eric can be reached at ericchen@cn.ibm.com.

Contributors

April Harris, Visual Designer, IBM Institute for Business Value, IBM Digital Services Group

Kristin Fern Johnson, Writer and Content Strategist, IBM Institute for Business Value, IBM Digital Services Group

Ying Zhan, Managing Consultant, IBM Institute for Business Value, China

© Copyright IBM Corporation 2016

IBM Global Business Services, Route 100, Somers, NY 10589

Produced in the United States of America, November 2016

IBM, the IBM logo and ibm.com are trademarks of International Business Machines Corp., registered in many jurisdictions worldwide. Other product and service names might be trademarks of IBM or other companies. A current list of IBM trademarks is available on the Web at "Copyright and trademark information" at www.ibm.com/legal/copytrade.shtml.

This document is current as of the initial date of publication and may be changed by IBM at any time. Not all offerings are available in every country in which IBM operates.

The information in this document is provided "as is" without any warranty, express or implied, including without any warranties of merchantability, fitness for a particular purpose and any warranty or condition of non-infringement. IBM products are warranted according to the terms and conditions of the agreements under which they are provided.

This report is intended for general guidance only. It is not intended to be a substitute for detailed research or the exercise of professional judgment. IBM shall not be responsible for any loss whatsoever sustained by any organization or person who relies on this publication.

The data used in this report may be derived from third-party sources and IBM does not independently verify, validate or audit such data. The results from the use of such data are provided on an "as is" basis and IBM makes no representations or warranties, express or implied.

Notes and sources

- 1 Stanley, Ben and Kal Gyimesi. "Automotive 2025: Industry without borders – Engage with consumers, embrace mobility and exploit the ecosystem." IBM Institute for Business Value. January 2015. <http://www.ibm.com/services/us/gbs/thoughtleadership/auto2025/>
- 2 Ibid.
- 3 Ibid.
- 4 Ibid.

IBM