



# A new relationship—people and cars in the United States

*How U.S. consumers want cars to fit their lives*

## 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 help enable stronger brand loyalty and increased customer satisfaction. Please visit [ibm.com/industries/automotive](http://ibm.com/industries/automotive).

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## Driving in the next decade

*Conventional automotive industry wisdom warns executives that people are losing interest in cars. However, results from our recent survey of over 16,000 consumers indicates that people will engage with cars – and cars with people – in new ways. The car will remain a key fixture in personal transportation. For U.S. consumers, owning a car remains important; however, they don't necessarily need to own one in the traditional sense. Like consumers in the rest of the world, they are ready for industry innovation that deepens their connections with cars and the expanding Internet of Things (IoT). New mobility options are already beginning to transform U.S. consumers' lives and expectations.*

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## Executive summary

Digital technologies, lifestyle expectations and personal mobility options are changing how U.S. 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, automotive (auto) industry executives have a tremendous stake in understanding current and future U.S. consumers’ mobility-related behaviors and preferences.

For the second part of our “Auto 2025” series, we surveyed 16,469 consumers equally distributed across 16 countries, including the United States, to develop an informed view of how they will own and use vehicles over the next decade. This report reveals important U.S. 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. U.S. consumers also expressed a greater desire to both co-create mobility solutions and buy vehicles through preferred channels and ecosystem participants.

We noted one recurring difference of opinion: Consumers in the United States and other mature markets are consistently more conservative when it comes to trying vehicle and mobility innovations. They tend to base their decisions on proven value, while growth market consumers make more aggressive decisions based on perceived value. The more conservative reactions of consumers in the United States and other mature markets to new technology reflect the question, “Why do I need it?” The mentality of the less hesitant growth market consumers can be summed up by the question, “When can I have it?”



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



U.S. respondents 35 and older **expect their use of personal cars as their primary mode of transportation to drop 10%** by 2025, but anticipate their use of car- and ride-sharing will double.



**33%** of U.S. respondents are **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 (28 percent from the United States) including OEMs and suppliers.<sup>1</sup> It suggested three disruptors to the industry over the next decade: empowered consumers, changing mobility models and a transforming industry ecosystem.<sup>2</sup>

This new report details our analysis of what U.S. 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 changes. In the future, the car will know who the occupants are, advise them on decisions and may even be a trusted companion. Consumers in the United States welcome the car as another smart device – albeit one weighing 3,000 pounds – that is embedded in the IoT.

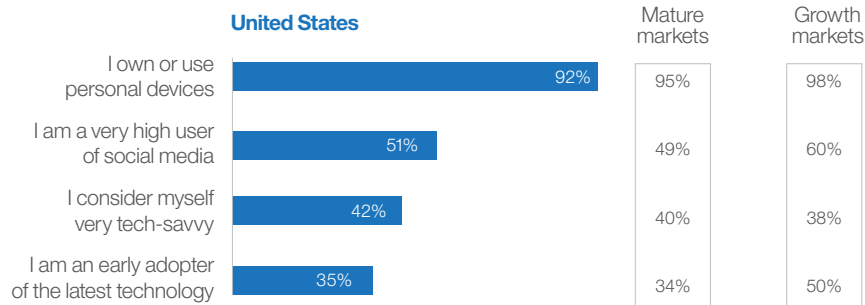
## U.S. consumers reveal their changing requirements

### Digital maturity of U.S. 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. Forty-two percent of U.S. consumers we surveyed consider themselves tech-savvy, a percentage slightly above the global averages (40 percent of mature market and 38 percent of growth market respondents), and 92 percent own or use personal devices (compared to 95 percent in mature and 98 percent in growth markets). When comparing the United States and other mature markets to growth markets, the most striking digital maturity differences are 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 U.S. males consider themselves early adopters than females (38 versus 33 percent), while females are significantly higher users of social media (59 versus 43 percent). This suggests females may be greater influencers via social media – an insight auto companies should consider leveraging.

### **I want new ways to own my car**

U.S. consumers want the convenience of cars but are looking for new options beyond the traditional ownership model. Eighty-eight percent of U.S. consumers surveyed expect to own a car sometime during the next ten years – this includes some of the 18 percent who indicated they can't afford to buy a car today. Another 4 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 in the United States, as 34 percent are very interested in subscription pricing and 21 percent even said they are very interested in fractional ownership of vehicles. Alternative ownership options will be especially important as first-time buyers start considering the purchase of a second car and seniors re-evaluate their need for a second car.

### **I can get around in new ways**

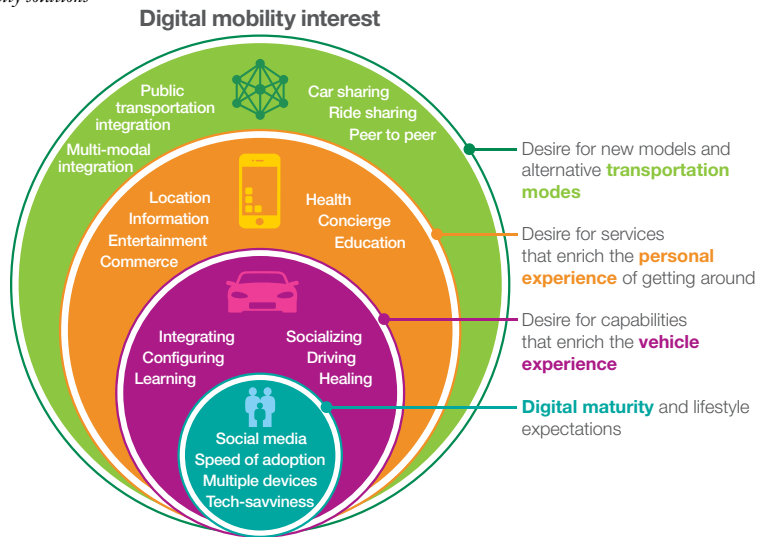
The personal car as the primary mode of transportation will continue as a key fixture in personal mobility, but its priority will change based on lifestyle preferences. Among respondents ages 18 to 24, 68 percent use a personal car today as their primary transportation mode (69 percent for males, 67 percent for females), versus about 84 percent in other age groups. In the coming decade, there will be a 15 percent increase in the use of the personal car as the primary mode of transportation for young drivers (75 percent for males, 82 percent for females), compared to a decline of 12 percent for U.S. consumers over 35 years old. For this older age group, the shift to car- and ride-sharing services will increase by 200 percent by 2025.

## Match the “bells and whistles” with my interests

In-vehicle digital technology is still complicated and not easy for all to use. Examining U.S. 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 consumers’ attitudes and expectations regarding future mobility solutions*



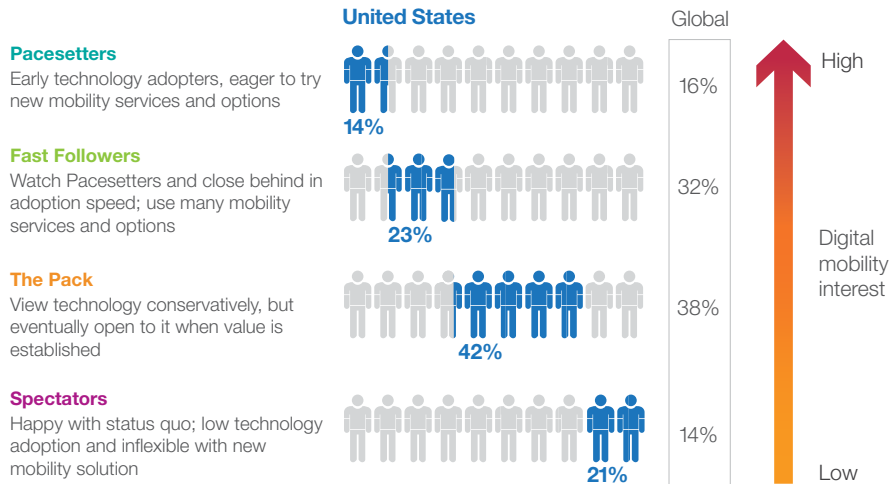
Consumers from the United States who ranked themselves higher in digital maturity have greater expectations for the new digital innovations in vehicle and mobility services. The connected capabilities in the vehicle are still underutilized due to complexity and lack of automation. Consumers who have 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 matching consumers to digital technologies – which, in turn, should drive greater satisfaction with the in-vehicle experience.

Four types of consumer groups emerged based on their digital mobility interest (see Figure 3). The Pacesetter and Fast Follower groups are the most technologically advanced and together represent 37 percent of U.S. study respondents versus 48 percent globally. Surprisingly, of that 37 percent, over two-thirds are from the 25–44 age group rather than the 18–24 age group as one might expect. The Pack, which is the largest group at 42 percent (versus 38 percent globally), is somewhat hesitant about future mobility capabilities and services. But as the value of digital mobility solutions becomes clearer, this group has the potential to be influenced.



**Figure 3**

Cluster analysis shows four distinct U.S. consumer groups based on degree of digital mobility interest



Source: IBM Institute for Business Value analysis.

Categorizing U.S. 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 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 U.S. 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 U.S. consumer's "mobility persona" to create a more personalized experience.

*Appeal to U.S. 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 information 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.

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## Mobility experiences

### Clamoring for self-enabling vehicles (SEVs)

Consumers from the United States show a high level of interest in the intelligent, intuitive, self-enabling innovation that 83 percent of U.S. industry executives (80 percent globally) said would be a key differentiator by 2025.<sup>3</sup> 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 car learns the habits of its driver and offers recommendations to optimize the use of the car.
- A major U.S. supplier provides self-integrating capabilities that 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.

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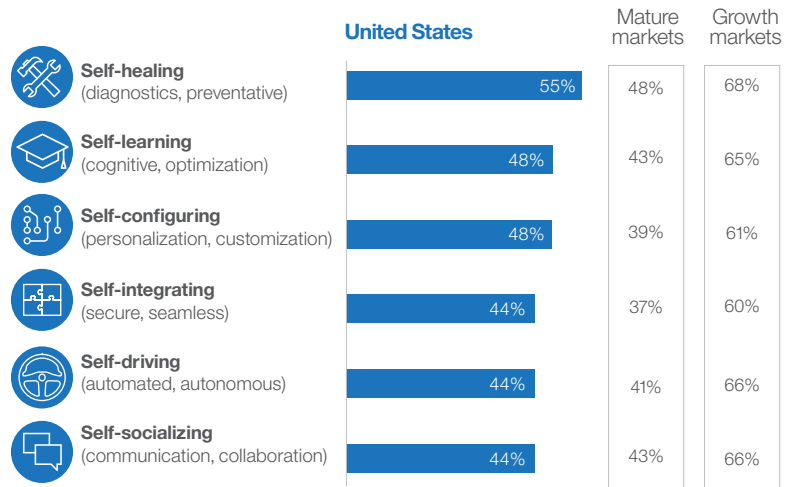
### Six SEV groups:

- *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.

U.S. consumers are very interested in all aspects of SEVs, selecting self-healing capabilities most often (cited by 55 percent). For males, the interest in self-healing is highest among those 25 to 34 years old (61 percent), while female interest is highest among those 35 to 44 years old (63 percent). Even the least-selected SEV capabilities – self-socializing, self-driving and self-integrating – are appealing to 44 percent of consumers (see Figure 4). Interestingly, while 10 of 16 countries placed the highest priority on self-healing, surveyed Asian countries ranked self-driving either first or second.

**Figure 4**

*Self-healing, -learning and -configuring top the list of self-enabling capabilities for U.S. consumers*



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

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### **Mobility gets personal**

U.S. 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.<sup>4</sup> Information services (like those for weather and traffic) rate the highest at 53 percent, while entertainment services (such as those for music or video streaming) are second at 45 percent. Education services (like those for education videos and materials) are the least desired at 30 percent.

Information, entertainment and commerce services (such as paying for tolls, parking and retail) hold the highest interest for mature markets. Information and health services (such as monitoring heart or blood pressure) rank high across all age groups in growth markets. Location-based and education services have the lowest priority for consumers across all countries.

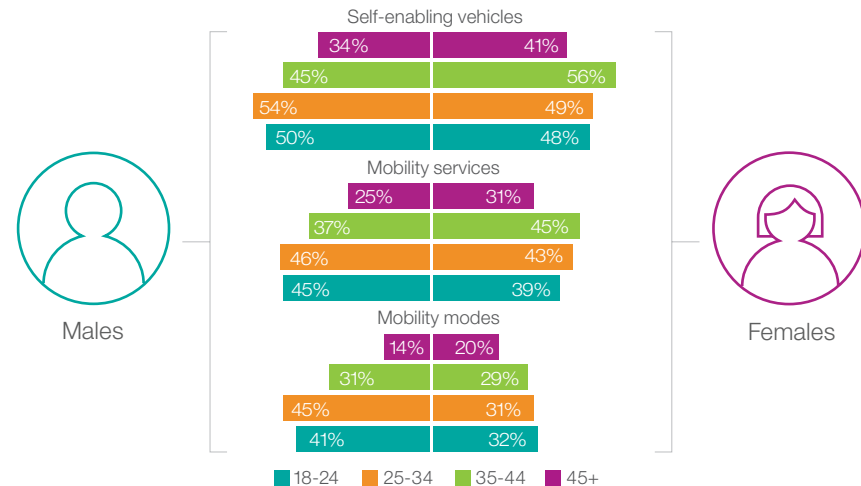
### **Alternatives alter driver lifestyles**

The personal convenience of cars remains highly attractive to U.S. consumers. Thirty-two percent said car sharing is a very important option, and 29 percent like the on-demand ride-sharing model. Even peer-to-peer car renting is a viable option, with 29 percent saying they are very interested. Options for car sharing, on-demand ride sharing and peer-to-peer rental not only provide consumers the convenience of using a car without owning, but also give the owners of those cars the opportunity to get a return on their underutilized auto investment. For U.S. 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, females tend to show a slightly higher interest in self-enabling vehicle capabilities and mobility services than males, who show a higher interest in different mobility modes. On average, U.S. male consumers ages 18-34 and female consumers 25-44 have the highest interest across the three types of mobility solutions (see Figure 5).

**Figure 5**

*The 25-44 age group shows the highest level of interest in mobility solutions. Females show slightly higher interest in self-enabling vehicles and mobility services; males show more interest in mobility modes*



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?

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## **Recommendations: Mobility experiences**

### *Create personalized, in-vehicle services*

- *Assure greater consumer adoption.* Develop digital experience configurators to align U.S. consumer interest with the desired in-vehicle digital capabilities. Actively promote and develop the full spectrum of self-enabling vehicle innovations that appeal to priorities of multiple consumer and geographic segments.
- *Assist U.S. 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 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 “Why do I need it?” versus “When can I have it?”*  
Leverage consumer acceptance based on “proven value” versus “perceived 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 the United States. Identify regional successes and proven value for faster expansion across all regions.
- *Uncover U.S. 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.



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## The ecosystem

### **“Invented here” takes a new direction**

Creative deployment of digital and social technologies is compelling U.S. consumers to participate more directly in the creation of new mobility solutions. Thirty-five 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 U.S. consumers also want greater involvement through submitting ideas online and participating in design games and contests. Surprisingly, up to 31 percent of surveyed consumers from the United States (compared to 37 percent globally) said they would even be very likely to allow their driving and mobility data to be a source of design input.

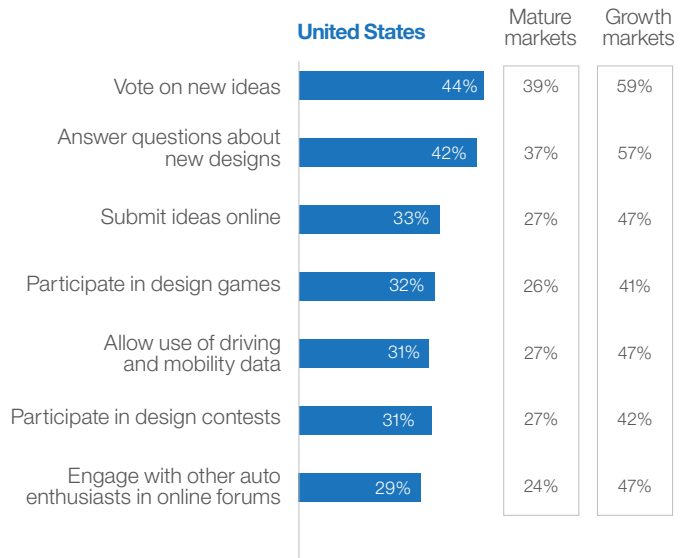
### **Changing the retail paradigm**

Shifts in U.S. 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 they trust most those channels with a personal connection, such as online reviews by family, friends and other consumers. In fact, online reviews were cited by 47 percent of U.S. respondents as very influential, which is significantly higher than the mature market average of 36 percent.

Ranked next most influential is word of mouth (45 percent), followed by general online search (40 percent) and online opinions (31 percent). At the bottom of the list, even behind traditional media (29 percent), are OEMs and dealers, named very influential by just 28 percent and 25 percent, respectively.

**Figure 6**

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

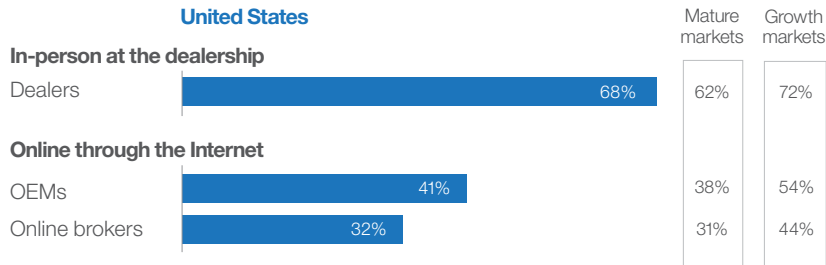


*Source: Percentage of respondents who said they are "very likely to participate." Q13, Q14 and Q15: How likely are you to participate in the following ways to co-create new products, marketing campaigns and mobility services?*

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 the United States, 41 percent of consumers said they would be willing to purchase online from OEMs, and 32 percent would consider purchasing online from third-party brokers. Even though these non-traditional channels garner a high degree of interest, 68 percent of U.S. consumers still said it is important to buy in person from a dealership. This reinforces the desire to have multiple channels to buy new vehicles based on personal preference.

**Figure 7**

*While many consumers still prefer the traditional buying model through the dealership, a large portion also are 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 U.S. 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 U.S. 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 U.S. 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 U.S. consumer segments.

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## Are you ready to offer digital experiences and services that U.S. 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 U.S. 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 U.S. 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 U.S. consumers and more influencers as you help transform the retail automotive experience?

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### For more information

To learn more about this IBM Institute for Business Value study, please contact us at [iibv@us.ibm.com](mailto: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](http://ibm.com/iibv).

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### 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. [ibm.com/business/value/autoconsumer](http://ibm.com/business/value/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. [ibm.com/business/value/auto2025](http://ibm.com/business/value/auto2025)

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### Study approach and methodology

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.



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## 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. [ibm.com/business/value/auto2025](http://ibm.com/business/value/auto2025)
- 2 Ibid.
- 3 Ibid.
- 4 Ibid.

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February 2017

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