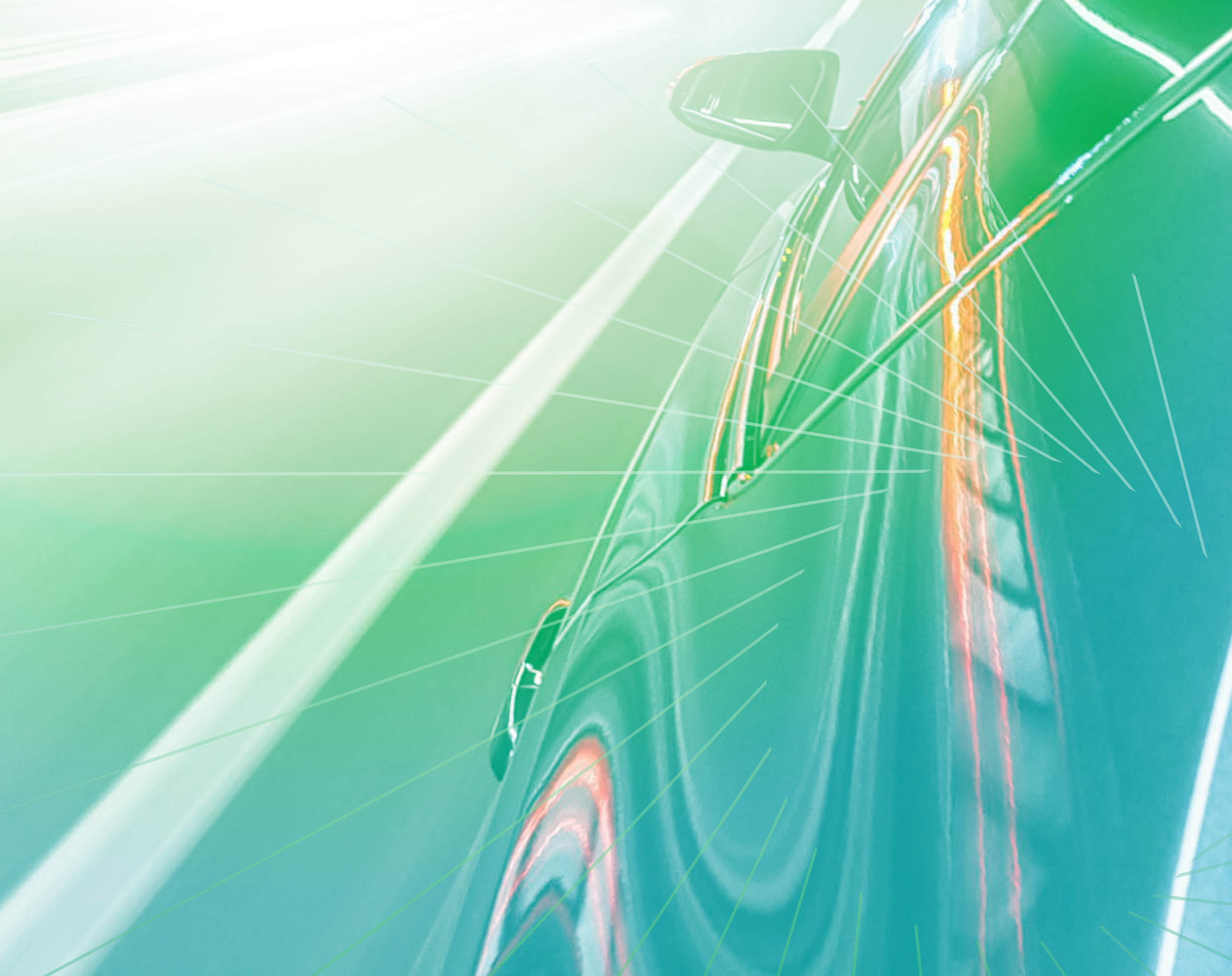
IHS Markit™

Consumer Surveys

Track the changing automotive lifestyles of today's "connected" consumer



IHS Markit Consumer Survey reports and companion databases indicate that innovative technologies, new services, and increased connectivity are key deciding factors when considering a new vehicle purchase. The surveys take input from more than 5,000 vehicle owners intending to purchase a new vehicle within the next 36 months, across five key automotive markets—the United States, China, Germany, the United Kingdom, and Japan (new).

Updated annually since 2013, IHS Markit Consumer Surveys offer three surveys on new car intenders:

- Automotive Connected Services Consumer Analysis
- Automotive User Experience Consumer Analysis
- Automotive Premium Audio Consumer Analysis

These surveys enable you to:

- Identify which services and features are must-haves for consumers intending to purchase a new vehicle for personal use in the next three years
- Understand the propensity of consumers who would be willing to pay for these advanced technologies and assess how much they would be willing to spend
- Anticipate market needs for new solutions

Deliverables include written reports in PDF format based on PowerPoints and datasets formatted in Excel and SPSS.

Benefit from the opinions of more than 5,000 vehicle owners across five countries for:

Connected services and apps

User experience

Premium audio

Connected services and apps

Today's consumers demand that their infotainment system have connected features, such as emergency response notification, remote vehicle controls, turn-by-turn navigation, Wi-Fi, telemetry services, and more. IHS Markit estimates that some 158 million total vehicles are connected today and that 438 million will be connected by 2023. Today's consumers expect a fresh software experience throughout the duration of ownership and for performance lag and bugs to be resolved through speedy over-the-air updates and ongoing software enhancements. Today, this is an engrained customer expectation largely driven by their experiences within the mobile space. This means automotive-centric apps and connected solutions that mimic what the consumer is used to in the mobile-, smart home-, wearable technology-, and PC- space is paramount to automakers facing a growing threat from IT companies who are entering the automotive space, like Google and Apple.

The Automotive Connected Services Consumer Analysis survey will identify:

Connected hardware

Consumer sentiments, purchasing intent, and subscription intent for the following:

- Navigation systems
- Remote start
- Infotainment systems
- Telematics
- In-car Wi-Fi
- Key-as-a-service
- Over-the-air updates
- In-car payments
- In-car commerce/apps store
- Usage-based insurance

Apps in the car

Consumer behavior and attitudinal positions for the following:

- Smartphone brand ownership
- Smartphone OS type
- Mobile carrier information
- Types of apps used on a tethered smartphone in the car
- Frequency of usage of smartphone-based navigation apps
- Embedded apps in the car
- Security and privacy concerns

Platform information

Consumer sentiments and purchasing intent around the following platforms:

- Android Auto
- Apple CarPlay
- MirrorLink
- SYNC AppLink
- Baidu CarLife

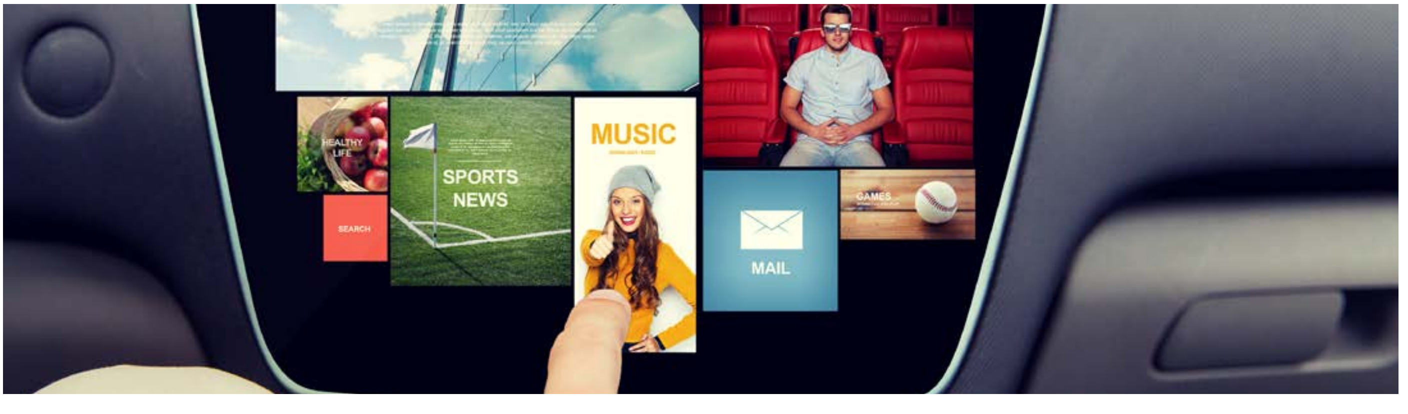
Services

Willingness to pay and desirability related to:

- Tolls and parking
- Drive-thru purchases
- Car payments from the vehicle
- Usage-based insurance
- Telematics service renewal
- Paid OTA updates
- Satellite radio/DAB radio
- Subscriptions

Autonomy and urban mobility

- Self-driving car desirability and purchase intent
- Attitudes toward self-driving cars
- Trust in automakers versus technology companies for autonomous development
- Urban mobility driver behavior and intent



User experience

Vehicles are increasingly defined not only by the technology and features enabled, but by the underlying UX connecting them all together. In the next five years, it is estimated that the automotive industry will add more than 44 million new display systems, enabling all-new content flexibility for automakers to attract new consumers. At the same time, rapid advancements in speech recognition and driver monitoring capabilities will offer an even more intuitive and rich in-vehicle experience for the next generation of vehicle interiors.

The Automotive User Experience Consumer Analysis survey will identify:

Heads-up display (HUD)

- Awareness of combiner and windscreen HUDs
- Interest and willingness to pay for HUD
- Availability impact on future vehicle purchase decision
- Content preferences
- Importance of instrument cluster display with HUD

Outputs

- Interest in, willingness to pay for display audio
- Opinions toward built-in displays
- Preferred size ranges and orientation for center stack displays
- Interest in, willingness to pay for passenger entertainment
- Interest in, willingness to pay for display mirrors
- Preferred outputs:
  - Center stack display
  - Instrument cluster display
  - Heads-up display
  - Spoken feedback
  - Audible cues
  - Haptic feedback

  By function

  - Radio/media playback
  - Phone calling
  - Text messaging, emailing
  - Smartphone/in-vehicle apps
  - Navigation
  - Vehicle status
  - Driving status
  - Safety systems

Driver monitoring

- Interest in, willingness to pay for facial driver monitoring
- Interest in features enabled by driver monitoring
  - Secure access to vehicle
  - Distraction detection
  - Preloaded preferences
  - Augmented reality HUD
  - ...and more

Inputs

- Familiarity with, favorability of touchscreens
- Touch vs physical button controls
- Transmission shifter HMI
- Preferred inputs:
  - Individual buttons/knobs
  - MFC/touchpad
  - Touchscreen
  - Speech recognition
  - Steering wheel controls
  - Gesture recognition

  By function

  - Radio
  - Media/iPod/CD
  - Phone calling
  - Text messaging, emailing
  - Smartphone/in-vehicle apps
  - Navigation
  - Climate control
  - System settings
- Interest in, willingness to pay for:
  - Steering wheel controls
  - Bluetooth
  - Gesture recognition

Speech & virtual personal assistants(VPA)

- Current usage, opinions on performance
- Interest in, willingness to pay for speech
- Desired speech features in next vehicle
- Familiarity with consumer electronics VPAs
- Interest in CE VPA in the car
- Automaker vs CE speech in the car

VPAs tracked include

- Amazon Alexa
- Siri
- Google Assistant
- AliGenie
- Duer
- iFLYTEK
- Clova
- ...and more


VOL
PUSH
SELECT

Premium audio

Premium audio remains a key feature in the mind of the consumer when purchasing a vehicle or selecting trims and packages. For many, a good audio system is what keeps them entertained and informed while behind the wheel. In the next five years, branded audio production will grow by more than 2 million units while unbranded options will grow by 9 million units. This increase does not represent speakers alone, but also opportunities for sound enhancement software, surround sound, and many more features.

The Automotive Premium Audio Consumer Analysis survey will identify:

How consumers listen to audio

- Type of connection consumers use for audio
- Audio source
- Subscription take rate of audio applications
- Radio/audio application use
- Perceived audio quality of each audio source

Premium audio purchase decision

- When consumers begin considering premium audio systems
- Influence of branded audio when considering packages and trims
- Frequency and impact of dealer demonstration

Audio features

An in-depth analysis of 15 different audio features by importance, including:

- Surround sound
- Design
- Active noise cancellation
- Amplifier
- Speaker quantity
- Digital audio restoration technology
- System wattage
- 360-degree/3D sound
- Sound channels
- Digital signal processing (DSP)
- Tweeters and sub-woofers

Audio brand analysis

Comparison of over 50 brands on:

- Awareness
- Awareness source
- Usage
- Premium perception
- Loyalty
- Willingness to upgrade to audio package
- Willingness to pay for branded audio

Audio brands covered include:

- Alpine
- Beats Audio
- Bang and Olufesen
- Bose
- Bowers and Wilkins
- Fender
- JBL
- Panasonic
- Pioneer
- Sony
- Yamaha
- ...and more

Internet radio apps include:

- Spotify
- iHeartRadio
- Deezer
- JUKE Music
- Baidu Ting
- 9box
- Stitcher
- ...and more

Automotive solutions from IHS Markit

IHS Markit (Nasdaq: INFO) is the automotive industry's leading source for market-wide insight, expertise and advanced planning solutions. With a reputation of enabling better decisions and better results for nearly a century, the world's leading OEMs, suppliers and their transportation partners rely on IHS Markit to power growth, improve efficiency and drive a sustainable competitive advantage.

Automotive offerings and expertise at IHS Markit span every major market and the entire automotive value chain—from product planning to marketing, sales and the aftermarket. Headquartered in London, our automotive team is part of IHS Markit's information and analytics powerhouse that includes more than 12,000 colleagues in 150 countries, covering energy, chemical, aerospace and defense, maritime, financial, technology, media and telecommunications. For additional information, please visit **www.ihsmarkit.com** or email **automotive@ihsmarkit.com**

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