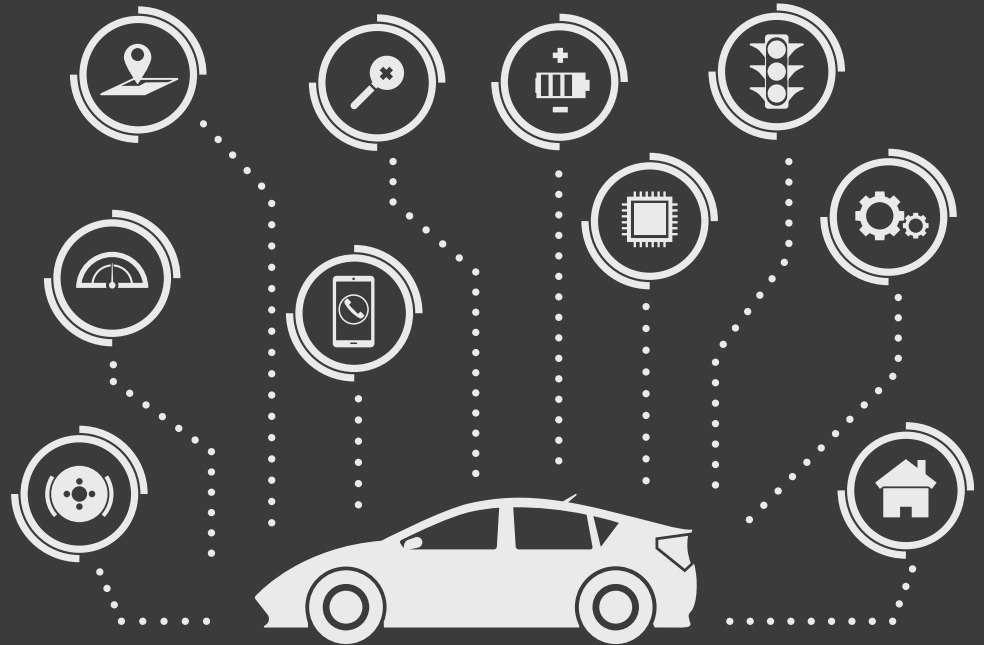


2021

# Harris Poll AutoTECHCAST

## Introduction and Study Highlights





# AutoTECHCAST Introduction

- Harris Poll AutoTECHCAST is an annual multi-client study platform that collects and analyzes consumer insights on advanced automotive technologies and features in the US.
- OEM market planners utilize this data for product content and differentiation analysis. Suppliers also depend on this data to develop product demand forecasts, price point margin analysis and technology validation on highly attractive emerging technologies.
- The study features 40 technologies provided to Harris from OEMs and other subscribers. Each technology is evaluated on core metrics, including willingness to pay along with several deep dive questions. Other areas of in-depth questioning include Connected Car, Future Mobility, and Autonomous Vehicles.
- The research has been conducted annually since 2006 providing an enormous normative database against which technologies are evaluated.
- Nearly 10,000 consumer interviews are collected to provide robust and reliable analysis of vehicle segments by owners and intenders.



# Overview of Methodology



**9,616** US Consumers      **30** Minutes (average survey length)

In order to qualify for the survey, respondents met the following criteria

- US resident
- Ages 18-80 years old
- Have a valid driver's license
- Have at least one household vehicle
- The vehicle is among the pre-determined list of North American models with model year of 2015 or newer
- Must be at least 50% involved in the decision to buy the next vehicle
- Intends to purchase or lease a new vehicle in the future



Data collected between April 13, 2021 and May 25, 2021.

Data weighted by demographics and a propensity score to ensure that respondents are representative of the total in-market vehicle buying population.



Standard set of metrics on each of the 40 techs, plus customized "deep dive" questions specific to the individual techs to provide info on preferred functionality, reasons for interest/non-interest, etc.



# What AutoTECHCAST Covers

Automotive manufacturers and suppliers need to innovate and differentiate to capture new business and build brand equity. Selecting and integrating the right advanced technologies—those that ***drive business performance, product differentiation and customer loyalty***—is essential.

The annual Harris Poll US AutoTECHCAST (ATC) reflects the perspectives of nearly 10,000 current vehicle owners and provides an in-depth assessment of a wide assortment of emerging automotive technologies in the areas of:

## Tech Categories





# 2021 AutoTECHCAST Technology List

## COMFORT & CONVENIENCE



### COMFORT

- Active Noise Cancellation
- Automatic Window Tinting
- Interior/Exterior Air Quality

### CONNECTIVITY

- Smartphone As Key
- Smartphone Linked Media/Navigation
- Vehicle Internet Connectivity
- **In-Car Payment System** ★

### CONVENIENCE

- Customizable Instrument Panel
- Driver Recognition System
- Touchless Door Opening/Closing
- Wireless Mobile Device Charging System
- **Auxiliary Power Generator** ★
- **Smart Home Ecosystem Integration** ★

### USABILITY

- Natural Language Voice-Activation
- Smartphone Personal Assistant Integration

★ **New Technologies Measured in 2021**

## SAFETY



### DRIVE MONITORING & ALERTS

- Blind Spot Detection and Prevention
- Directional Audio Cues
- Driver Monitoring System
- Vehicle-to-Vehicle Communication

### DRIVER ASSISTANCE

- Enhanced Collision Mitigation System
- Low-Speed Collision Avoidance system

### VEHICLE MONITORING & SECURITY

- Live Assistance Service
- Remote Vehicle Diagnostics and Updates
- Vehicle Cybersecurity Solution
- **Remote Camera Monitoring** ★

### DRIVER ASSISTANCE

- Anti-Glare Windshield
- Augmented Reality Head-Up Display
- Camera Monitoring System (E-Outside Mirror)
- Full Digital Display Rear View Mirror
- Night Vision
- Surround View Camera System
- **Safe Exit** ★

## FUEL EFFICIENCY



### FUEL SAVING & ALTERNATE FUEL

- Battery Electric Engine
- Hybrid Electric Engine

## AUTONOMOUS VEHICLES



### AUTONOMOUS & SEMI-AUTONOMOUS

- Automatic Parking System
- Autonomous Valet
- Traffic Jam Assist
- Fully Self-Driving
- City and Highway Assisted Self-Driving
- Highway Assisted Self-Driving

Levels of  
Autonomy  
Explored

### PLUS DEEP DIVE SECTIONS ON:

- Autonomous Vehicles
- Connected Car





# SAMPLE OF 2021 STUDY HIGHLIGHTS

# Vehicle Technology Familiarity Is Mixed, But Rising For Most

The most familiar technologies span several different categories including safety, comfort and convenience, fuel efficiency, and autonomous.

Visibility technologies including Night Vision and Full Digital Display Rear-View Mirror are among the techs with the biggest gains in familiarity.

Softening familiarity is seen among Vehicle Monitoring & Security technologies such as Live Assistance Service and Remote Vehicle Diagnostics & Updates

Familiarity with Blind Spot Detection and Prevention Systems remains high but is down slightly since 2020.

## AVERAGE TECH FAMILIARITY

2021 Harris Poll AutoTECHCAST<sup>SM</sup>

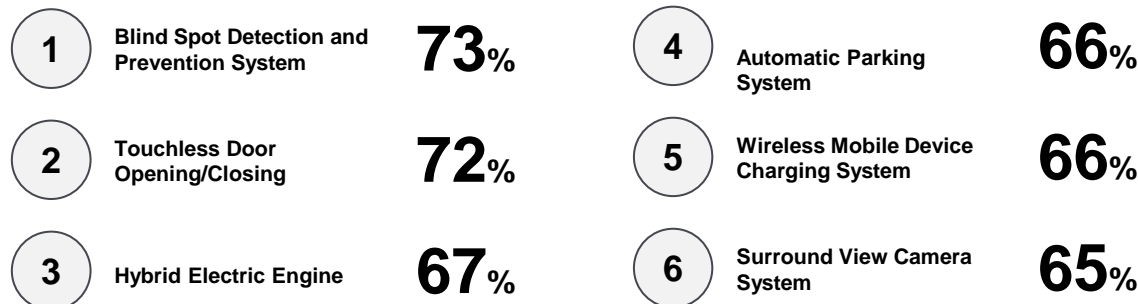


2018  
**22** Techs With Familiarity <50%

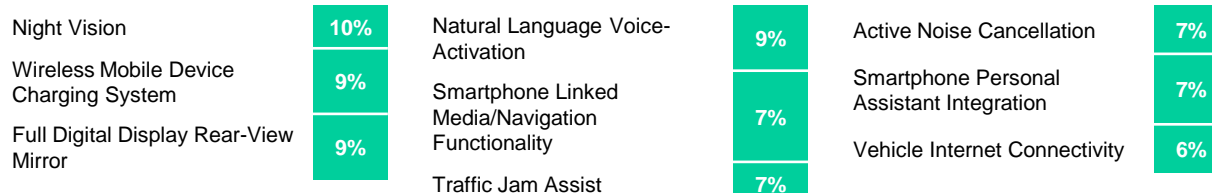
2020  
**25** Techs With Familiarity <50%

2021  
**23** Techs With Familiarity <50%

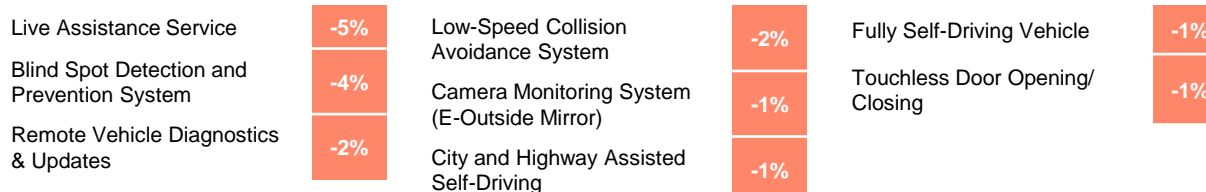
### HIGHEST FAMILIARITY



### LARGEST INCREASES IN FAMILIARITY



### LARGEST DECREASES IN FAMILIARITY





# Accident Prevention And Smartphone Integration Techs Continue To Show Highest Interest. However, Interest In Visibility Techs Is Increasing

Consumers are more open this year to automotive technologies. Of the 40 techs measured, 12 classify as having "good" levels of interest (up from 5 in 2020).

The annual AutoTECHCAST<sup>SM</sup> measured consumer interest in 40 advanced technologies.

RANK 1-14		Index Score
1	Blind Spot Detection and Prevention System	64.6
2	Low-Speed Collision Avoidance System	51.5
3	Surround View Camera System	51.4
4	Wireless Mobile Device Charging System	49.9
5	Automatic Window Tinting	49.1
6	Enhanced Collision Mitigation System	48.7
7	Anti-Glare Windshield	47.6
8	Smartphone Linked Media/Navigation	47.4
9	Full Digital Display Rear-View Mirror	46.9
10	Smartphone Personal Assistant Integration	46.9
11	Active Noise Cancellation	46.4
12	Hybrid Electric Engine	46.1
13	Night Vision	43.1
14	Remote Vehicle Diagnostics & Updates	43.1

RANK 15-28		Index Score
15	Vehicle Internet Connectivity	43.1
16	Driver Recognition System	42.1
17	Live Assistance Service	42.0
18	Customizable Instrument Panel	40.9
19	Directional Audio Cues	40.1
20	Touchless Door Opening/Closing	39.9
21	Automatic Parking System	39.8
22	Driver Monitoring System	39.7
23	Smartphone as Key	37.7
24	Traffic Jam Assist	37.4
25	Augmented Reality Head-Up Display	36.9
26	Highway Assisted Self-Driving	36.2
27	Safe Exit	35.2
28	Camera Monitoring System (E-Outside Mirror)	34.8

RANK 29-40		Index Score
29	Remote Camera Monitoring	34.8
30	Vehicle Cybersecurity Solution	34.7
31	Interior/Exterior Air Quality Display	34.5
32	City and Highway Assisted Self-Driving	32.8
33	Natural Language Voice-Activation	32.4
34	Battery Electric Engine	31.9
35	Vehicle-to-Vehicle Communication	30.7
36	Auxiliary Power Generator	29.4
37	Autonomous Valet	28.6
38	Smart Home Ecosystem Integration	26.5
39	In-Car Payment System	23.6
40	Fully Self-Driving Vehicle	23.0

ATC Metric Grading Key: ● Poor ● Fair ● Good



# Desired Tech Outcomes Often Vary By Generation And Gender, But Safety Is Universally Important

Millennials are more interested in tech that makes driving fun, improves styling, and is environmentally friendly.

Baby Boomers desire techs that prevent accidents, increase visibility, increase reliability, and make driving more comfortable.

Females continue to have the highest interest of all in safety and lean into techs that increase visibility and make a vehicle more environmentally friendly.

Males seek tech that makes driving fun, and improves vehicle styling and comfort.

## KEY ATTITUDES

Attitudes By Demo



	GENERATION				GENDER	
	YOUNG MILLENNIALS	OLDER MILLENNIALS	GEN X	BOOMERS	MALE	FEMALE
Make Me Feel Safe	26%	34%	35%	34%	29%	38%
Prevents Accidents	24%	28%	28%	34%	29%	31%
Increases Vehicle Reliability	18%	20%	25%	28%	25%	24%
Makes Driving Fun	17%	18%	17%	11%	17%	11%
Improves Styling Of The Vehicle	11%	11%	9%	4%	9%	6%
Make Vehicle More Environmentally Friendly	12%	13%	9%	9%	9%	12%
Increases Visibility	13%	11%	10%	15%	11%	14%
Makes Driving More Comfortable	22%	24%	24%	27%	27%	23%

 Key Difference

# Consumers Are Slowly Coming Around To Electric Vehicles

While current penetration of advanced engines is very low, consideration is increasing, with Hybrid Electric Engine having the highest consideration relative to pure Battery Electric.

Momentum has increased considerably for both engine types since last year.

Inhibiting adoption for electric vehicles are range and re-charging inconveniences (charge times, lack of charge stations, etc).

## ELECTRIC

Consideration & Concerns



### HYBRID ELECTRIC ENGINE

Initial Consideration



Consideration At Price



Momentum



### BATTERY ELECTRIC ENGINE

Initial Consideration



Consideration At Price



Momentum



#### TOP CONCERNS

BATTERY ELECTRIC VEHICLE

- ✓ Distance you can travel on a single charge
- ✓ Frequency of re-charging will be inconvenient
- ✓ Length of time it will take to re-charge
- ✓ Need to install a charging station at home
- ✓ Lack of charging stations
- ✓ Initial cost is too expensive

Note: The 2021 AutoTECHCAST description of Battery Electric Engine increased the typical driving range from 150 miles to 300 miles. This may have contributed to the jump in momentum seen this year.

# Millennials Are Increasingly Receptive To Disruptive Techs

Conversely, interest in advanced technologies among older generations remains less warm.

Manufacturers can leverage the Millennial interest to fine tune how they are promoting and positioning these technologies in targeted messaging to older generations.

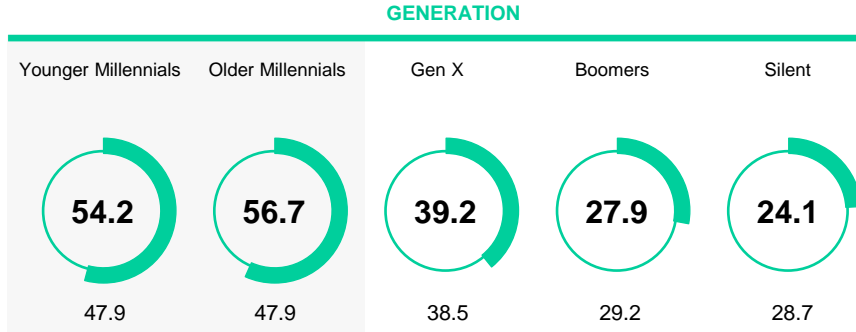
## INTEREST INDEX

By Generation



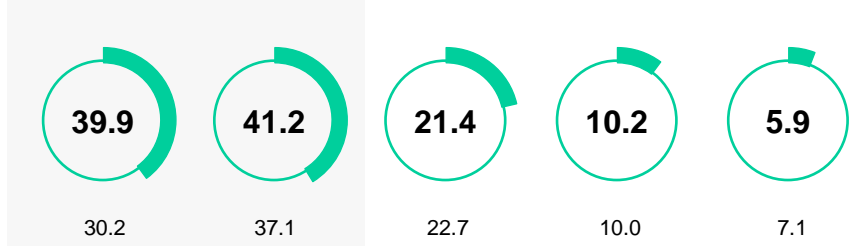
**SEGMENT AVERAGE ACROSS ALL TECHNOLOGIES**

2020



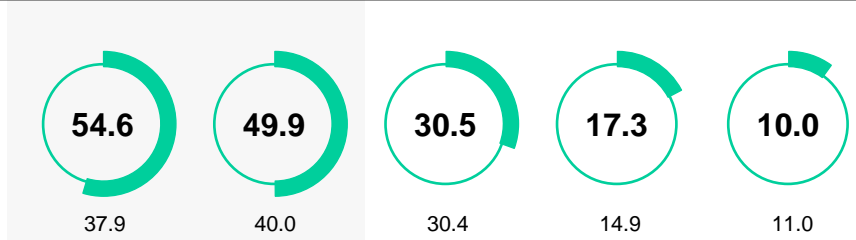
**FULLY SELF DRIVING VEHICLE**

2020



**BATTERY ELECTRIC ENGINE**

2020





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