

2023

Harris Poll AutoTECHCAST

Executive Summary

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Methodology

Harris Poll AutoTECHCAST is an annual multi-client study platform to collect and analyze consumer insights on advanced automotive technologies and features. The 2023 full study includes 40 technologies.



10,421 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 2017 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 3, 2023 and May 10, 2023.

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 over 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





2023 AutoTECHCAST Technology List

COMFORT & CONVENIENCE



COMFORT

- Active Noise Cancellation
- Advanced Cabin Air Filter
- Automatic Window Tinting
- Interior/Exterior Air Quality Display
- **Noise Canceling Tires** ★

CONNECTIVITY

- Front Passenger Screen
- In-Car Payment System
- Interactive Gaming
- Over-the-Air Updates
- Smartphone As Key
- Smartphone Linked Media/Navigation
- Streaming Media
- Vehicle Internet Connectivity

CONVENIENCE

- Auxiliary Power Generator
- Driver Recognition System
- EV/Fuel Route Planning Systems
- Smart Home Ecosystem Integration
- Touchless Door Opening/Closing
- Wireless Mobile Device Charging System

SAFETY



DRIVE MONITORING & ALERTS

- Driver Monitoring System
- Vehicle-to-Vehicle Communication
- **Health Monitoring Sensor** ★

DRIVER ASSISTANCE

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

VEHICLE MONITORING & SECURITY

- Remote Camera Monitoring
- Remote Vehicle Diagnostics
- Vehicle Cybersecurity Solution

VISIBILITY

- Augmented Reality Head-Up Display
- Camera Monitoring System (E-Outside Mirror)
- Full Digital Display Rear View Mirror
- Safe Exit
- Surround View Camera System

FUEL EFFICIENCY



FUEL SAVING & ALTERNATE FUEL

- Battery Electric Engine
- Fuel Cell Engine
- Hybrid Electric Engine

AUTONOMOUS VEHICLES



AUTONOMOUS & SEMI-AUTONOMOUS

- Automatic Parking System
- 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:

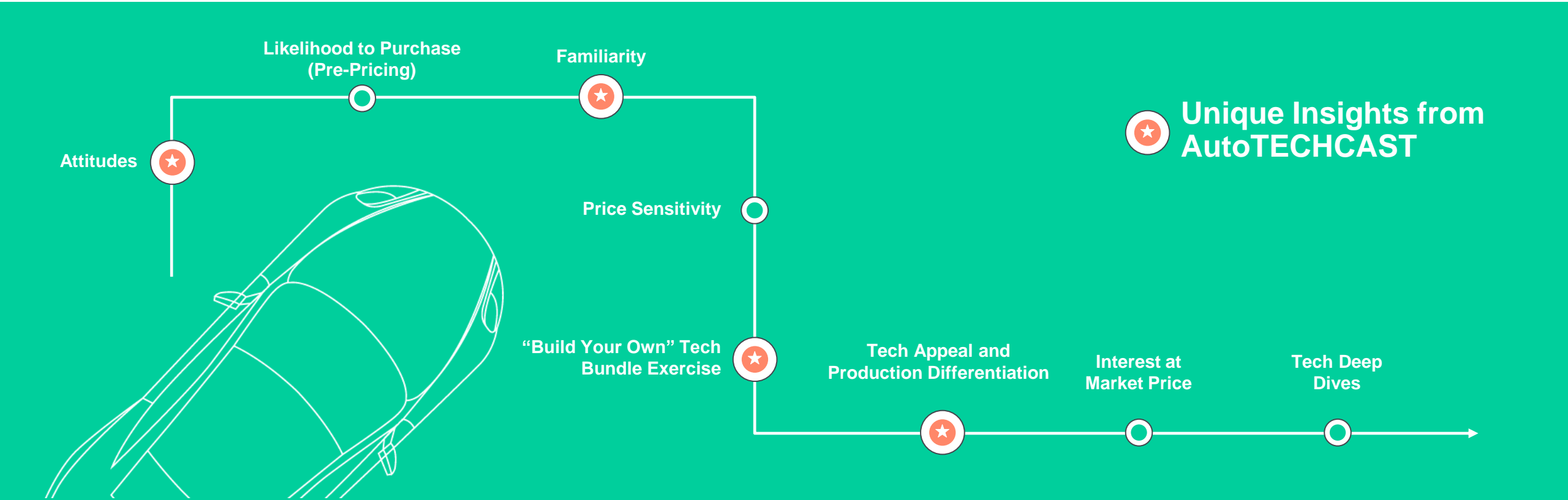
- Autonomous Vehicles
- Connected Car
- Electric Vehicles





Study Scope And Flow

Technology attributes included in AutoTECHCAST

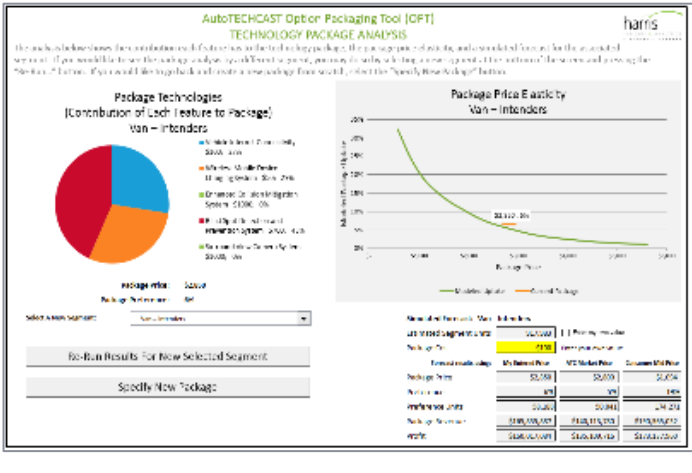
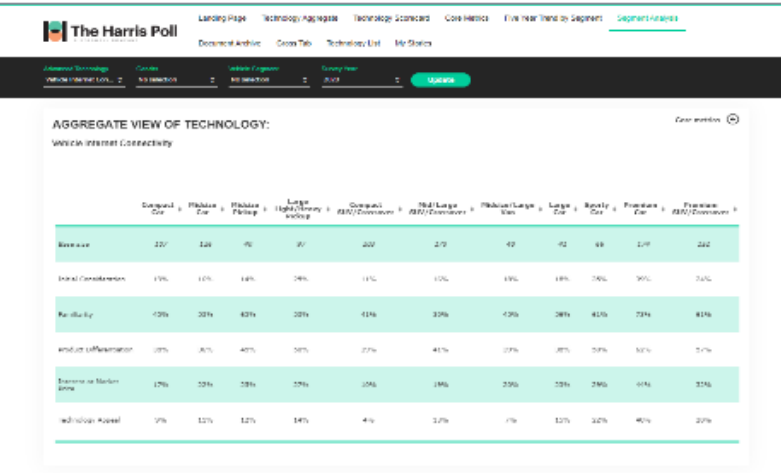
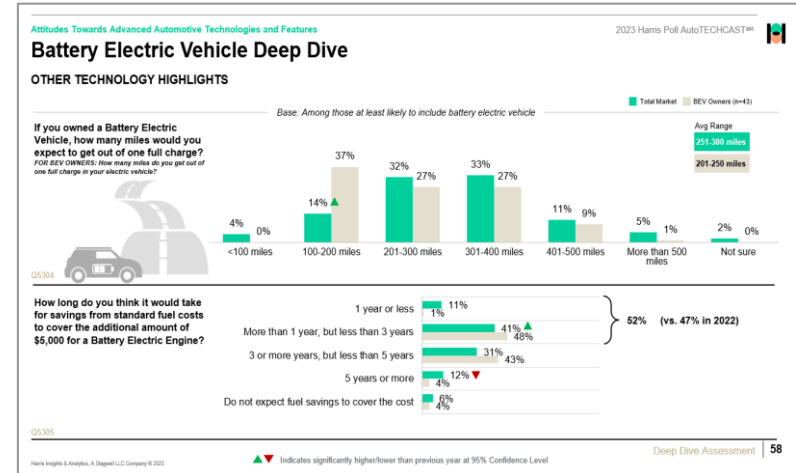
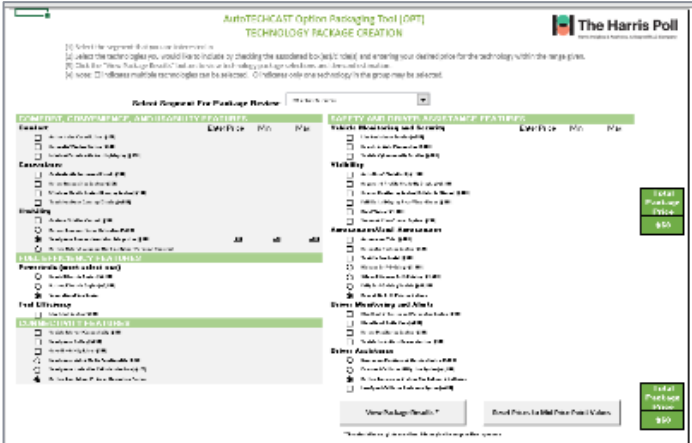
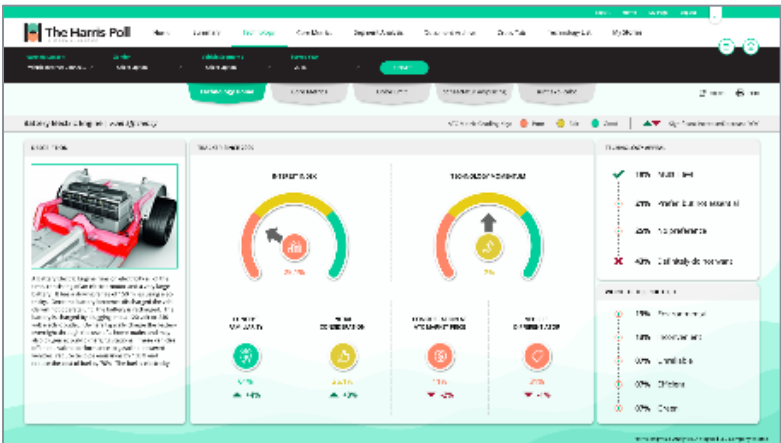


AutoTECHCAST Deliverables

Summary Report

Online Interactive Dashboard

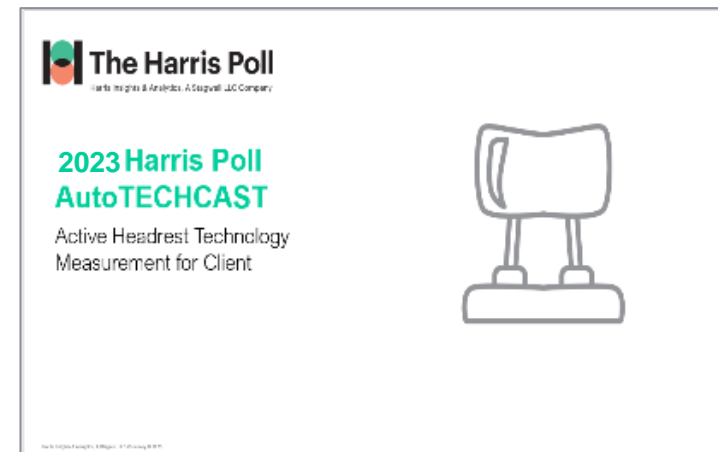
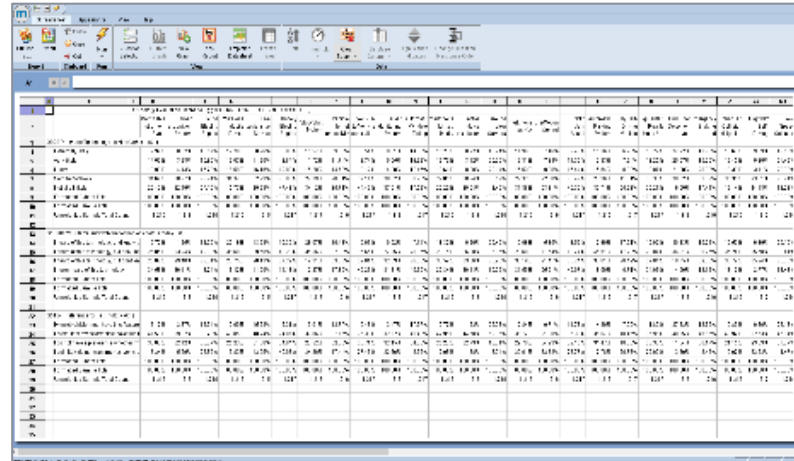
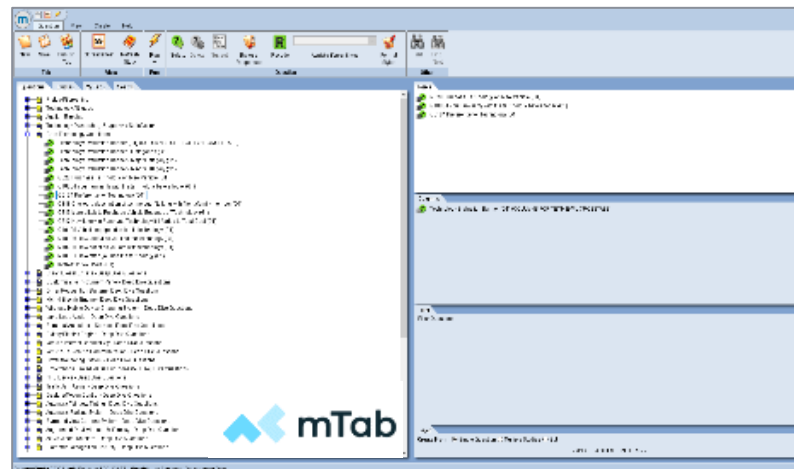
Option Packaging Tool





KANO Analysis

Optional AutoTECHCAST Feature Optimization Platform





Example Questions the Study Helps Answer

- How are attitudes toward in-vehicle technology changing?
- Which features are gaining/losing momentum in terms of interest?
- How much are consumers willing to pay for a feature?
- What are the price/volume trade-offs of a feature?
- Which features are most important to attracting Millennials?
- How does interest in a technology or package of features vary by segment?
- What features do my brand owners/intenders prefer?
- Which features are most used, seldom used?
- Which features of a package drive the most interest?
- What is the optimal price point to generate the maximum demand?
- How much autonomy is the consumer willing to accept?
- What will convert drivers with gas engines to electric vehicles?

Example Analysis




Accident Avoidance, Smartphone Integration, and Visibility Techs Continue To Provide Broad Appeal

In-vehicle entertainment and payment systems along with fuel cell engine and full driving automation have the least appeal to consumers.

The annual AutoTECHCASTSM measured consumer interest in 40 advanced technologies.

RANK 1-14		Index Score
1	Low-Speed Collision Avoidance System	55.2
2	Surround View Camera System	54.1
3	Wireless Mobile Device Charging System	52.9
4	Enhanced Collision Mitigation System	51.5
5	Smartphone Linked Media/Navigation Functionality	51.0
6	Remote Vehicle Diagnostics	49.1
7	Hybrid Electric Engine	48.5
8	Advanced Cabin Air Filter System	47.2
9	Active Noise Cancellation	46.4
10	Full Digital Display Rear-View Mirror	46.0
11	Driver Recognition System	45.9
12	Automatic Parking System	45.4
13	Automatic Window Tinting	45.1
14	Vehicle Internet Connectivity	45.1
RANK 15-28		Index Score
15	Remote Camera Monitoring	44.9
16	Touchless Door Opening/Closing	43.1
17	Fuel/EV Route Planning Systems	40.8
18	Camera Monitoring System (E-Outside Mirror)	40.8
19	Traffic Jam Assist	40.7
20	Driver Monitoring System	39.7
21	Streaming Media	39.7
22	Safe Exit	39.4
23	Vehicle Cybersecurity Solution	39.1
24	Over-the-Air Updates (OTA Updates)	39.1
25	Highway Assisted Self-Driving	39.1
26	Noise Canceling Tire	38.0
27	Smartphone as Key	37.2
28	Auxiliary Power Generator	36.7
RANK 29-40		Index Score
29	Health Monitoring Sensor	35.7
30	Interior/Exterior Air Quality Display	35.6
31	City and Highway Assisted Self-Driving	34.7
32	Augmented Reality Head-Up Display	34.5
33	Battery Electric Engine	33.6
34	Front Passenger Screen	33.2
35	Smart Home Ecosystem Integration	32.5
36	Vehicle-to-Vehicle Communication	32.3
37	Fuel Cell Engine	30.3
38	In-Car Payment System	29.9
39	Fully Self-Driving Vehicle	29.0
40	Interactive Gaming	20.8

 In-Car Payment leads all features in momentum since last year (25.9 in 2022)

Example Analysis

Momentum Just “Fair” For Most Features in 2023

Stable year-over-year momentum is an indication that consumers are more discerning.

Only Streaming Media has ‘good’ consideration and “good” momentum.

Five features had poor momentum in 2023 relative to AutoTECHCAST norms; Automatic Window Tinting, Driver Monitoring System, Vehicle Cybersecurity Solution, Smartphone as Key, and Augmented Reality Head-up Display.

MOMENTUM VS. INTEREST

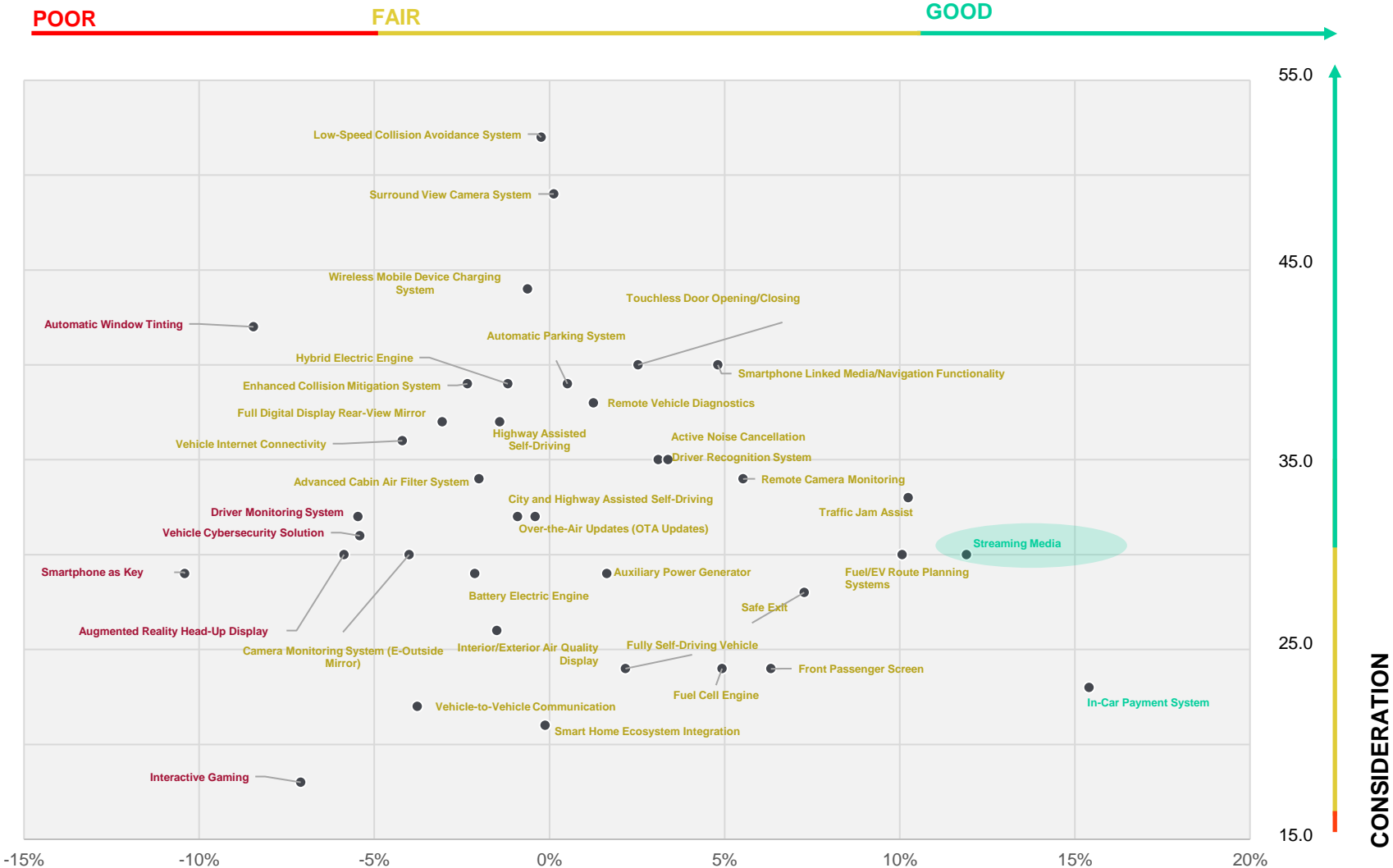
(Circles reflect each of the technologies)

MOMENTUM

2022 Harris Poll AutoTECHCASTSM



Tech with above average Momentum and Interest



Safety Technologies Remain Top Differentiators For Vehicles

Consumers are more likely than not to purchase a vehicle that offered Surround View Camera System, Low-Speed Collision Avoidance System, and Enhanced Collision Mitigation System.

Automatic Parking System now ranks among the top 10 differentiators – up 4 points since 2022 and 8 points since 2018.

Differentiation definition:

How likely am I to purchase a vehicle with this technology versus one without it? (Extremely Likely and Very Likely)

DIFFERENTIATION

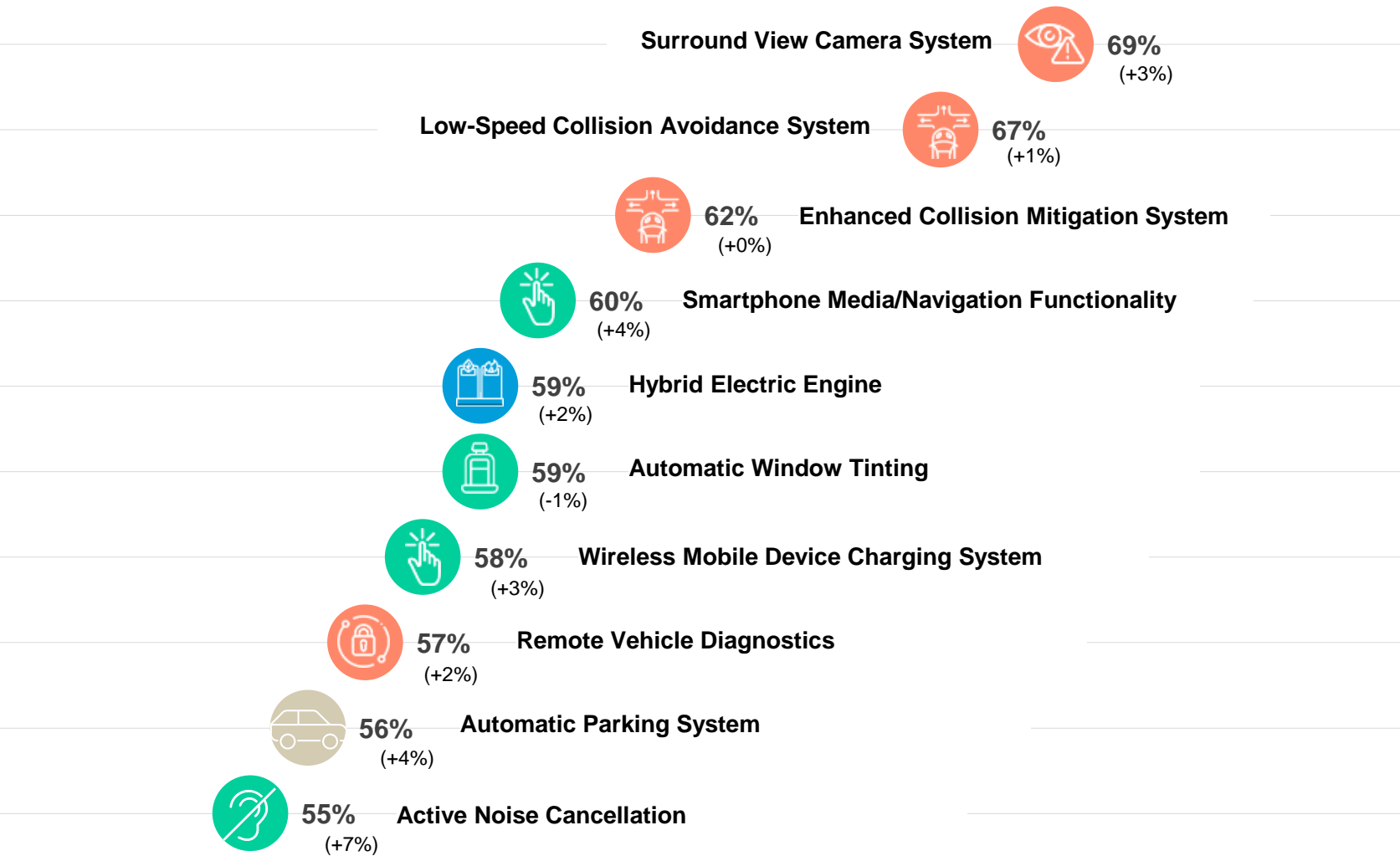
Top 10 Technologies by Category
% Extremely/Very Likely (YOY)

2023 Harris Poll AutoTECHCASTSM



FAIR

GOOD



COMFORT & CONVENIENCE

SAFETY

FUEL EFFICIENCY

AUTONOMOUS



Key Study Deliverables

KANO Analysis

Technology Classification

Attractive
Techs

These technologies will increase a vehicle’s competitive edge and go above and beyond expectations. Consumers would be excited when these technologies are included but not dissatisfied if not included.

Performance
Techs

The technologies don’t necessarily come with the expected offering but rather add appeal (e.g., gas mileage, audio sound quality).

Indifferent
Techs

These technologies do not have a strong effect on satisfaction or dissatisfaction. This does not necessarily mean that consumers don’t care about them; rather it means that consumers do not necessarily need them.

Must-Be
Techs

These technologies are necessary. Consumers expect vehicles to offer these technologies. These technologies don’t impress consumers but can cause dissatisfaction if they’re not provided (e.g., air conditioning, power steering).

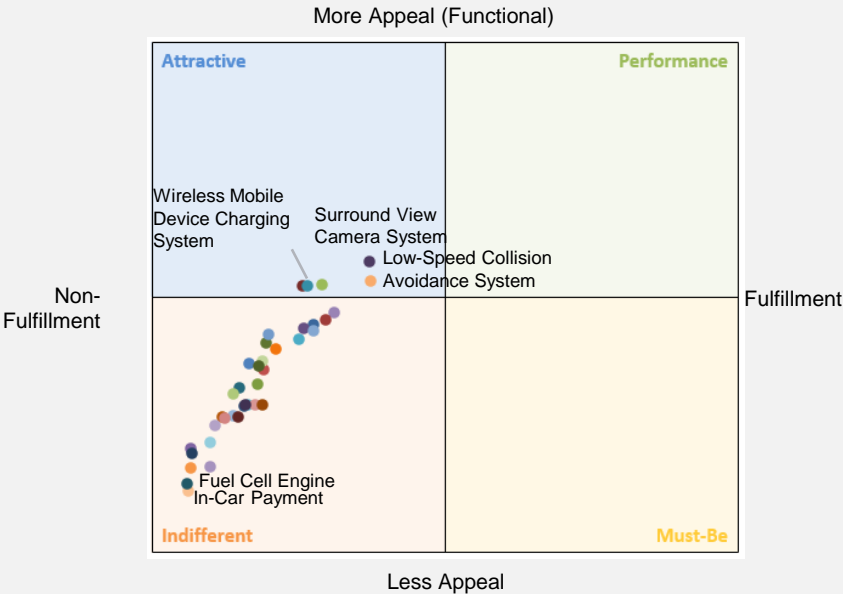


Included in AutoTECHCAST for the first time in 2021, KANO analysis further guides prioritization of advanced automotive features based on their likelihood to satisfy customers.

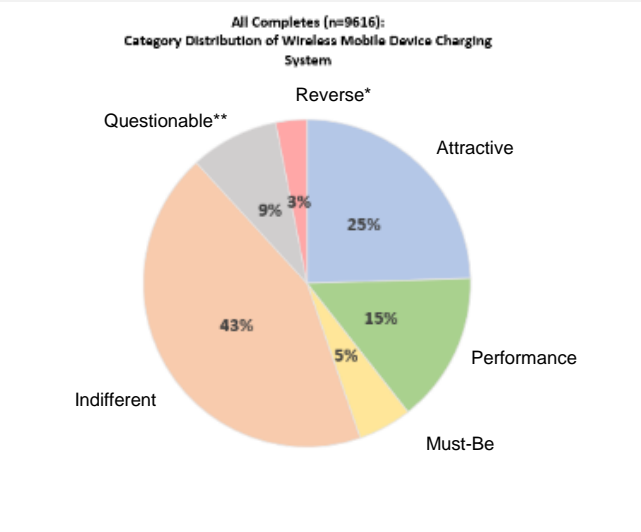
KANO Analysis Output Provides Two Different Approaches To Analyze Results

Analysis Available By Key Vehicle Segments

Continuous Analysis:
(Combined Overview of Technology Classification)



Discrete Analysis:
Individual Technology Classification
(% of Consumers By Category)



*Reverse Technologies – These are technologies that Consumers dislike for their vehicle.

**Questionable Technologies – Responses with conflicting answers.



Build your own technology bundle with the Option Packaging Tool

AutoTECHCAST includes a 'Build Your Own Technology Bundle' exercise aimed at providing deeper insights into price sensitivity for desired technologies.

Through advanced modeling, we are able to provide an interactive tool - the Option Packaging Tool or OPT - that allows a user to estimate predicted share of preference (or demand) at various price points for each technology or technology bundle.

1 Select segment

2 Select technologies and prices

3 View results

AutoTECHCAST Option Packaging Tool (OPT)
TECHNOLOGY PACKAGE CREATION

(1) Select the segment that you are interested in.
(2) Select the technologies you would like to include by checking the associated box(es)/circle(s) and entering your desired price for the technology within the range given.
(3) Click the "View Package Results" button to view technology package selections and demand estimation.
(4) Note: ☐ indicates multiple technologies can be selected. ☐ indicates only one technology in the group may be selected.

Select Segment For Package Review: All Vehicle Intruders

COMFORT, CONVENIENCE, AND USABILITY FEATURES				SAFETY AND DRIVER ASSISTANCE FEATURES			
	Enter Price	Min	Max		Enter Price	Min	Max
Comfort				Vehicle Monitoring and Security			
<input type="checkbox"/> Active Noise Cancellation (\$150)				<input type="checkbox"/> Lidar Sensor Suite (\$200)			
<input type="checkbox"/> Automatic Window Tinting (\$400)				<input type="checkbox"/> Remote Vehicle Diagnostics (\$300)			
<input type="checkbox"/> Interior/Exterior Air Quality Display (\$150)				<input type="checkbox"/> Vehicle Cybersecurity Solution (\$550)			
Convenience				Visibility			
<input type="checkbox"/> Customizable Instrument Panel (\$550)				<input type="checkbox"/> Anti-Glare Windshield (\$4,500)			
<input type="checkbox"/> Driver Recognition System (\$250)				<input type="checkbox"/> Augmented Reality Head-Up Display (\$5,000)			
<input type="checkbox"/> Wireless Mobile Device Charging System (\$100)				<input type="checkbox"/> Camera Monitoring System (E-Outside Mirror) (\$400)			
<input type="checkbox"/> Touchless Door Opening/Closing (\$500)				<input type="checkbox"/> Full Digital Display Rear View Mirror (\$500)			
Usability				<input type="checkbox"/> Night Vision (\$1,000)			
<input type="checkbox"/> Gesture / Motion Control (\$500)				<input type="checkbox"/> Surround View Camera System (\$700)			
<input type="checkbox"/> Natural Language Voice Activation (\$500)				Autonomous/Semi-Autonomous			
<input checked="" type="radio"/> Smartphone Personal Assistant Integration (\$100)	\$68	\$20	\$200	<input type="checkbox"/> Remoteless Entry (\$500)			
<input type="checkbox"/> Multi-Modal Language For Smartphone Personal Assistant				<input type="checkbox"/> Automatic Parking System (\$500)			
FUEL EFFICIENCY FEATURES				<input type="checkbox"/> Traffic Jam Assist (\$500)			
Powertrain (must select one)				<input type="checkbox"/> Highway Self-Driving (\$2,000)			
<input type="radio"/> Hybrid Electric Engine (\$2,000)				<input type="checkbox"/> City and Highway Self-Driving (\$4,500)			
<input type="radio"/> Battery Electric Engine (\$5,000)				<input type="checkbox"/> Fully Self-Driving Vehicle (\$10,000)			
<input checked="" type="radio"/> Conventional Gas Engine				<input checked="" type="radio"/> None of the Self-Driving Options			
Fuel Efficiency				Driver Monitoring and Alerts			
<input type="checkbox"/> Stop-Start System (\$500)				<input type="checkbox"/> Blind Spot Detection and Prevention System (\$400)			
CONNECTIVITY FEATURES				<input type="checkbox"/> Directional Radio Cues (\$200)			
<input type="checkbox"/> Vehicle Internet Connectivity (\$500)				<input type="checkbox"/> Driver Monitoring System (\$200)			
<input type="checkbox"/> Smartphone App Key (\$250)				<input type="checkbox"/> Vehicle-to-Vehicle Communication (\$500)			
<input type="checkbox"/> Over-the-Air Updates (\$500)				Driver Assistance			
<input type="checkbox"/> Smartphone Linked Music Personalization (\$250)				<input type="checkbox"/> Emergency Braking and Steering System (\$500)			
<input type="checkbox"/> Smartphone Navigation Vehicle Interface (\$100)				<input type="checkbox"/> Enhanced Collision Mitigation System (\$1,000)			
<input checked="" type="radio"/> Multi-Modal Smartphone Media or Navigation Features				<input checked="" type="radio"/> Next-Gen Emergency Braking For Enhanced Collision			
				<input type="checkbox"/> Low-Speed Collision Avoidance System (\$400)			

Total Package Price
\$68

Total Package Price
\$68

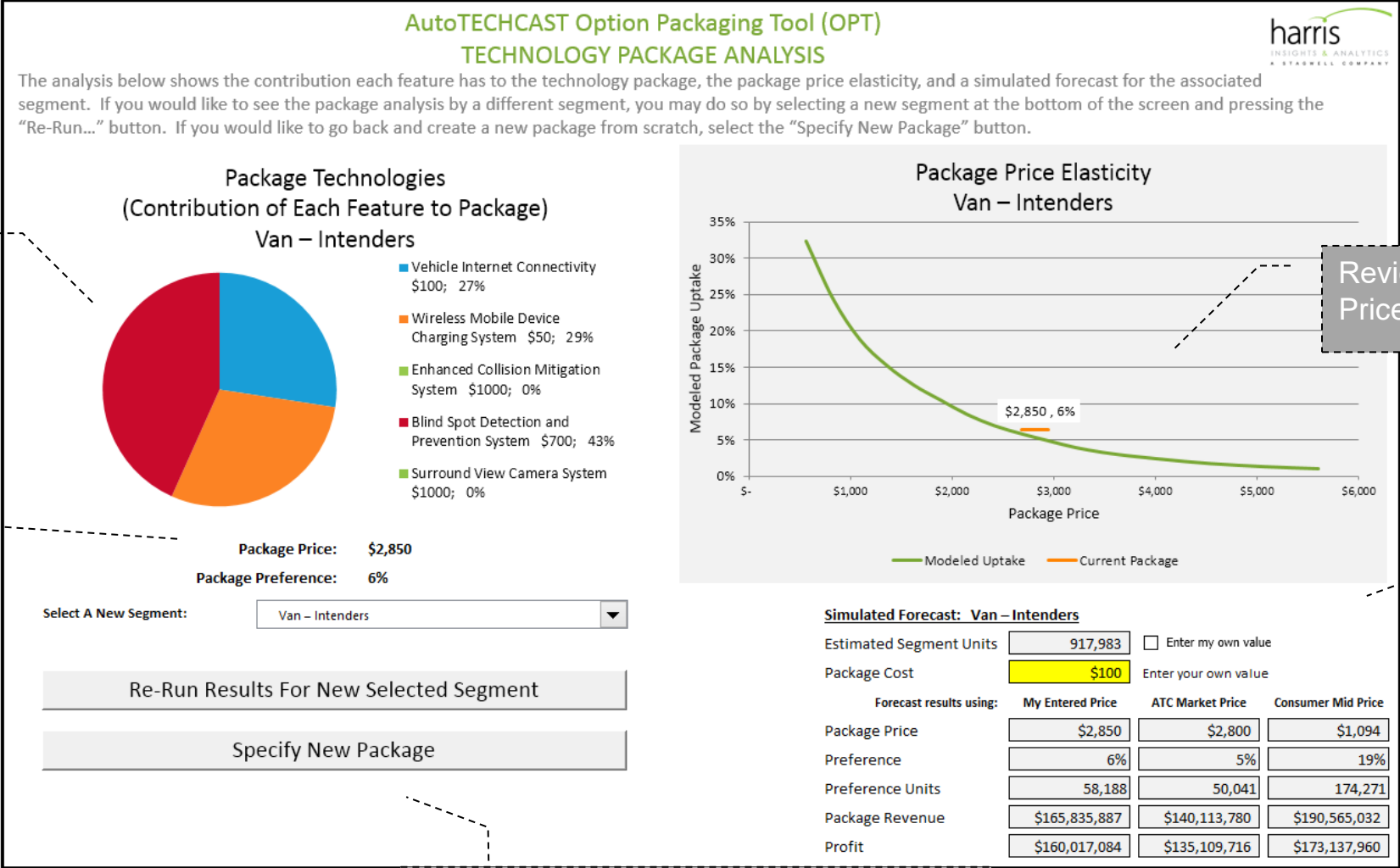
[View Package Results *](#) [Reset Prices to Mid Price Point Values](#)

*The actualities may take some time. Please give the program time to process.



AutoTECHCAST Option Packaging Tool - Output

A variety of analyses are provided for you to review the desired technology package.



See how each technology contributes to the overall preference for the package.

Review package price and market preference.

Review the package's Price Elasticity.

You can create a simulated forecast from the results.

Review package by another segment or reconfigure your package.



Leveraging The AutoTECHCAST Platform To Provide Quick-Turn Insights (Optional)

Harris Insights has designed a custom feature testing platform leveraging AutoTechCast that addresses key feature performance metrics and questions of interest on additional features and technologies in a time-sensitive, agile, and cost-efficient fashion.

Feature



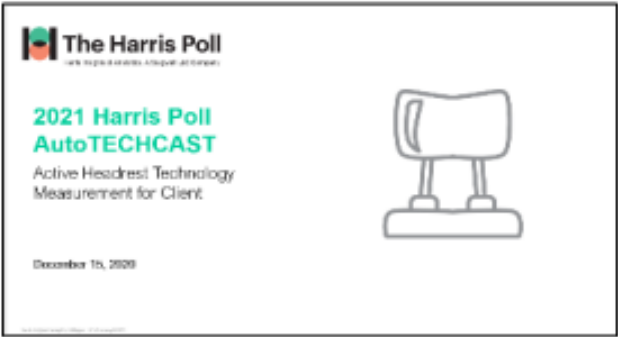
Client provides feature stimuli and price point to Harris

AutoTechCast[®] Platform



Harris tests feature using the AutoTechCast Platform

Quick Dashboard Reporting



Feature results are provided through standardized scorecards for efficiency



Thank you!
For More Information Contact:

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Gregory.Paratore@harrispoll.com