



100 years of automotive insight,  
powered by Polk data.

## Automotive Offerings

Insight, analytics, expertise, and solutions—driving  
better decisions and better business results.





## Welcome to IHS Markit!



Joe LaFeir  
Senior Vice President,  
Automotive  
IHS Markit

The automotive industry is one of the world's largest drivers of economic growth and cultural change and a catalyst for exciting new technologies. For decades, automotive manufacturers, suppliers, and dealers along with their financial and agency partners have relied on IHS Markit as a trusted source of critical information and insight.

This trust is built on a history of providing industry leaders with comprehensive, timely, and actionable insight that has shaped better business decisions and driven better business outcomes.

In an increasingly competitive and interconnected business environment, actionable insight—delivered where and when you need it—can be the difference between market leadership and market parity. Like no other, IHS Markit delivers the breadth and depth of automotive insight that will help you gain and retain the lead in your market.

Today, we are proud to celebrate over 100 years of providing automotive stakeholders with data, analysis, and forecasts to support product strategy, sales and marketing, and the aftermarket.

For more information or to speak to an IHS Markit expert, please contact us at [ihsmarkit.com/automotive](https://ihsmarkit.com/automotive)



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# Car of the Future

**Disruptive trends or future opportunities?**



# Car of the Future

## MobilityInsight

**With the ownership of vehicles shifting from personal to fleet and the number of miles driven per vehicle likely to quintuple, MobilityInsight, from IHS Markit, provides a unique offering—a highly relevant means of tracking mobility developments in the automotive sector. With MobilityInsight, you will be able to access:**

### Headline Analysis

Stay up to date with ongoing developments in this rapidly changing industry with dedicated mobility news coverage.

### Company Profiles

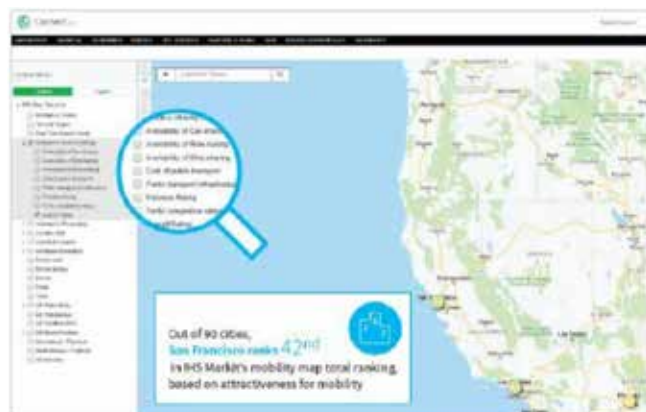
Discover what strategies other companies are adopting through dedicated automaker and mobility company profiles outlining mobility activities.

### Legal Framework

Access a repository of autonomous vehicle legal and regulatory environment for major markets around the world (i.e., China, France, Germany, India, Italy, Spain, the United Kingdom, the United States).

### Mobility City Map

Understand how locations compare. This interactive map features 90 cities rated according to attractiveness for new mobility services. Overall rating is based on seven key criteria: car-sharing, ride-hailing, bike-sharing, cost of public transport, public transport infrastructure, pollution, and traffic congestion.



### Data Browser

Anticipate what the future holds via the IHS Markit mobility data browser. The browser contains five years of historical data and forecasts out twelve years for the United States, Europe, China, and India. Coverage includes autonomous vehicles (L4/L5) and EVs (BEVs/PHEVs), as well as new mobility channels (such as car-sharing and ride-hailing).

### New Light Vehicle Players Tracker

New manufacturers enter and exit the market with astonishing speed. MobilityInsight tracks and evaluates these new players.

### Ride Hailing Fare Tracker

Does the average fee per kilometer traveled vary greatly by city, provider or service offered? The Ride Hailing Fare Tracker provides high-end/low-end average fares by km traveled for major ride-hailing companies in 20 cities around the world.



## Mobility and Energy Future Service

*Provides insight on the future of cars as well as the oil, automotive, chemicals and power industries to help clients effectively develop long-term business strategies.*

Understanding the pulse of change in the short- and long-term are at the heart of this new service. From monthly updates on EV sales, analysis of new policy and business developments to our scenario-based outlooks that span to 2050, Mobility and Energy Future features ground-breaking insights for the 21st century and provides an in-depth look at how automotive fleets will evolve from the personally-owned models of the past century to a multi-dimensional competitive environment where mobility service companies, electric powertrains, and driverless technology alter traditional buying and use patterns.

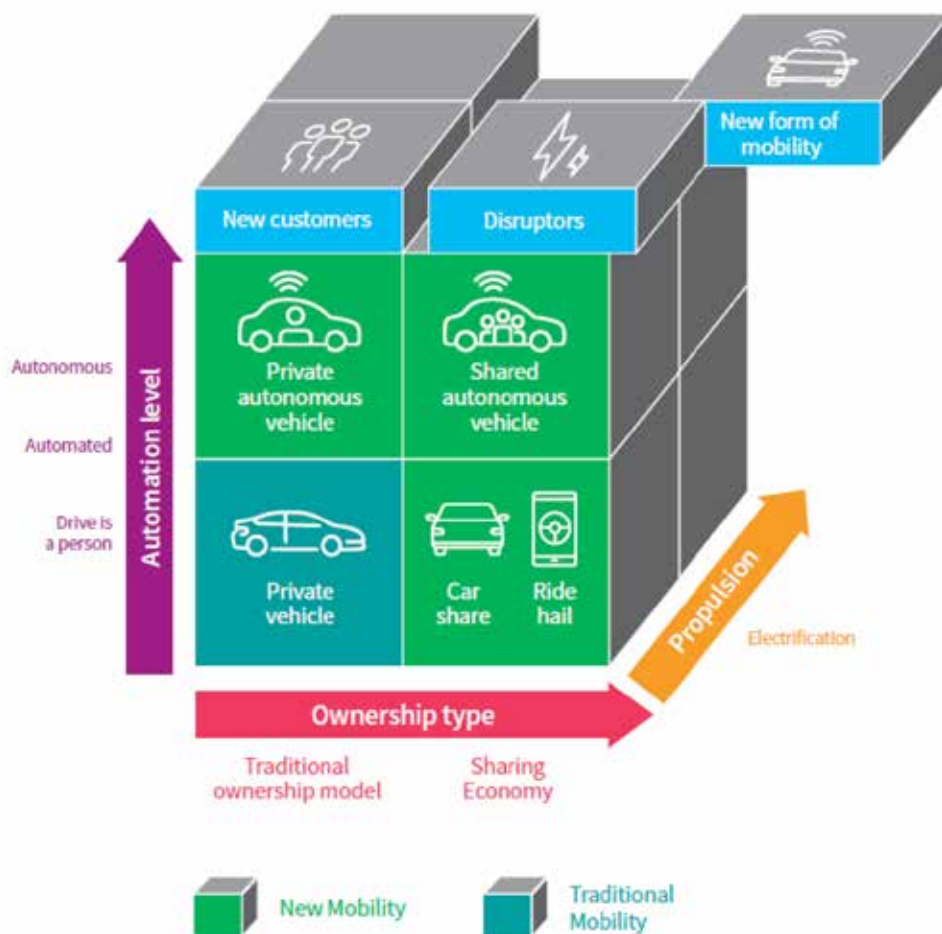
For the automotive industry, understanding the patterns of future car ownership and usage will be vital in preparing for tomorrow's market. The market will become more complex

as ride-sharing platforms and self-driving cars will give consumers an increasing number of options for personal mobility.

Automakers and suppliers will need to adapt their products and business models to ensure they are prepared for greater diversity, the resizing of markets, battery-charging needs, and the related response from electric-power markets.

### With Mobility and Energy Future you can:

- Identify short and long-term opportunities
- Anticipate future changes
- Minimize risk by offering better 'preparedness'
- Explore the validity of commonly held beliefs
- Develop and test business strategies



## Autonomy Forecasts

*Get unprecedented insight into a whole new world of driver(less) technology*

Over the next two decades, fully autonomous vehicles are expected to go from concept to tens of millions sold per year. This seismic shift will not only usher in a new era of in-vehicle user experience but of vehicle ownership as well. It also opens up a whole new industry for technology and associated components. There is profit to be made, but what is the best path forward?

IHS Markit provides insight into OEM autonomy and ADAS applications/features technology strategies. Our new model-level Autonomy Forecasts provide access to detailed technology specifications and clarify how different autonomy levels are delivered from a hardware perspective (sensors). The service also identifies emerging suppliers and OEM sourcing structures.

Get 12-year forecasts and in-depth analytics at the model level for the following:

### Sensor Technology and Supply Chain

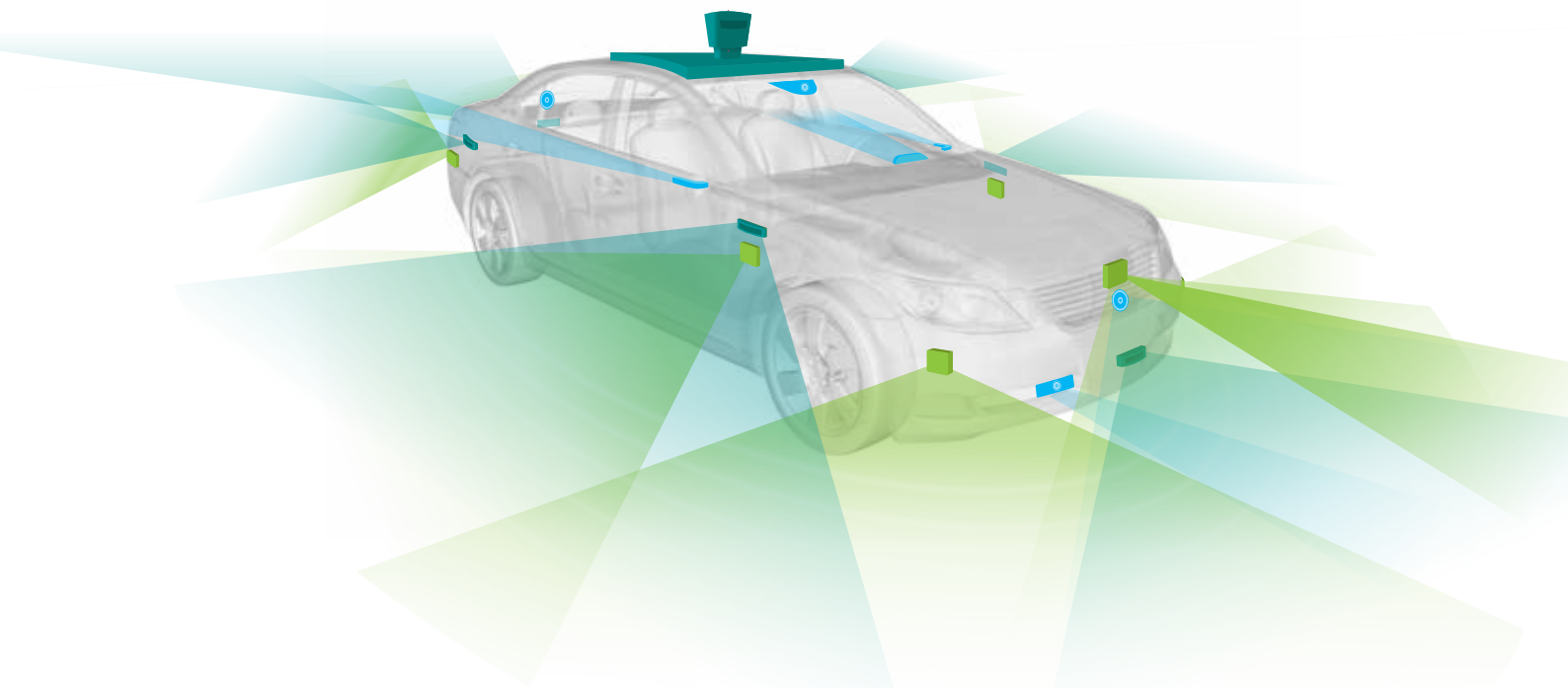
- Lidar
- Radar
- Camera

### Autonomy Features

- 12 application families
- 46 vehicle features

### Autonomy Levels

- SAE Level 0 – no automation
- SAE Level 1 – driver assistance
- SAE Level 2 – partial automation
- SAE Level 3 – conditional automation
- SAE Level 4 – high automation
- SAE Level 5 – full autonomy



## AutoTechInsight Services



### Autonomous Driving Service

Automated driving and advanced driver assistance systems (ADAS) are making vehicles safer and more convenient to drive. Furthermore, they are ushering in a disruptive era in mobility where vehicles are actively aware of the world around them, are able to drive themselves, and can even replace the need for a driver and vehicle ownership.

The IHS Markit Autonomous Driving Service provides insight, context, data and analytics for the ADAS market right through to the cutting edge of mobility, autonomous driving. Users can quickly access key insights from market developments, put context around events and technology trends, dive into deep data and forecasts, and seamlessly drive analytics to support their most challenging decisions.



### Connected Car Service

Connected car technology has grown within the auto industry for the past 20 years. Telematics and infotainment display audio systems are now commonplace. So are technologies such as Apple CarPlay, Android Auto, and even Android based operating systems for infotainment. These advancements further blur the line between traditional in-car human-machine interface and functionality and those often seen on a smartphone or tablet.

Today's high-tech car needs additional capabilities such as over-the-air (OTA) software and cybersecurity to fix bugs and add new functionality on a regular basis. These new capabilities also give suppliers and automakers an opportunity for white-space mapping in data monetization solutions which are critical to future profitability.

The IHS Markit Connected Car service provides insight, context, data and analytics that allow our clients to make informed and strategic business decisions.

Users can quickly access key insights from market developments, put context around events and technological trends, dive into deep data and forecasts, and seamlessly drive analytics to support their most challenging decisions.



### E-Mobility Service

Vehicle electrification is one of the most impactful and long-term trends in the automotive industry. For OEMs to comply with impending carbon dioxide legislation and regional emissions targets, alternative propulsion vehicles are entering product portfolios.

The IHS Markit E-Mobility Service provides insight, context, data, and analytics to help navigate the transition to an electrified powertrain and associated infrastructure. Users can quickly access key insights from market developments, put context around events and technological trends, dive into detailed data and forecasts, and seamlessly drive analytics to support their most challenging decisions.





# News and Analysis

**Track automotive industry developments around the world**

atest news

at has laid out details of an economic plan  
page 2

money owed to them

& Doors factory remained camped out  
the Goose ... page 6

estors

est weekly investment

## AutoIntelligence Suite

AutoIntelligence delivers comprehensive industry analysis and monitoring for more than 96% of global vehicle sales and 99% of global vehicle production.

AutoIntelligence is comprised of two services:

### AutoIntelligence Daily

Daily updates of automotive developments including the significance and outlook of automotive news, events and trends.

AutoIntelligence Daily is like having a team of industry, economic, and business analysts working directly for your organization. Every business day, headlines customized to your interests and needs arrive in your inbox with links directly to our site, where we curate what you need to know and what it means for your business. No other information service provides this level of timely, meaningful, and customized analysis.

### AutoIntelligence Monitor

A one-stop research hub with access to deep-dive reports, brand-level forecasts, and country and competitor intelligence.

Get insight on all the major automotive manufacturers and tier-one suppliers, analyze key markets, access in-depth analysis on topical events and trends, and get deep-dive analysis of segmentation splits, best sellers, and key trends and drivers.

**[ihsmarkit.com/autointelligence](https://ihsmarkit.com/autointelligence)**



Access AutoIntelligence  
Daily on your mobile device

## AutoTechInsight

### News and Insights

AutoTechInsight daily news & insights provides a fresh, succinct yet insightful IHS Markit spin on the latest news and trends as they emerge. IHS Markit not only sources and aggregates the latest relevant news on technology, supply chain, and OEM strategy but also analyzes their significance and contextualizes them with the help of our original research and forecasts.

News is categorized in different domains (list below) and is tagged against many criteria to allow for easy filtering. A customizable feed tracker, powerful search engine and the in-built RSS feed creation capability streamline the ability to consume the wealth of analysis provided.

- Autonomy
- Chassis
- Connected Car
- E-Mobility
- Electrics/Electronics and Semiconductors
- Interior Comfort and Passive Safety
- Lighting
- Materials and Lightweighting
- OEM Strategy
- Powertrain
- Thermal
- User Interface/User Experience (UI/UX)

**[ihsmarkit.com/autotechinsight](https://ihsmarkit.com/autotechinsight)**

## MobilityInsight

### Headline Analysis

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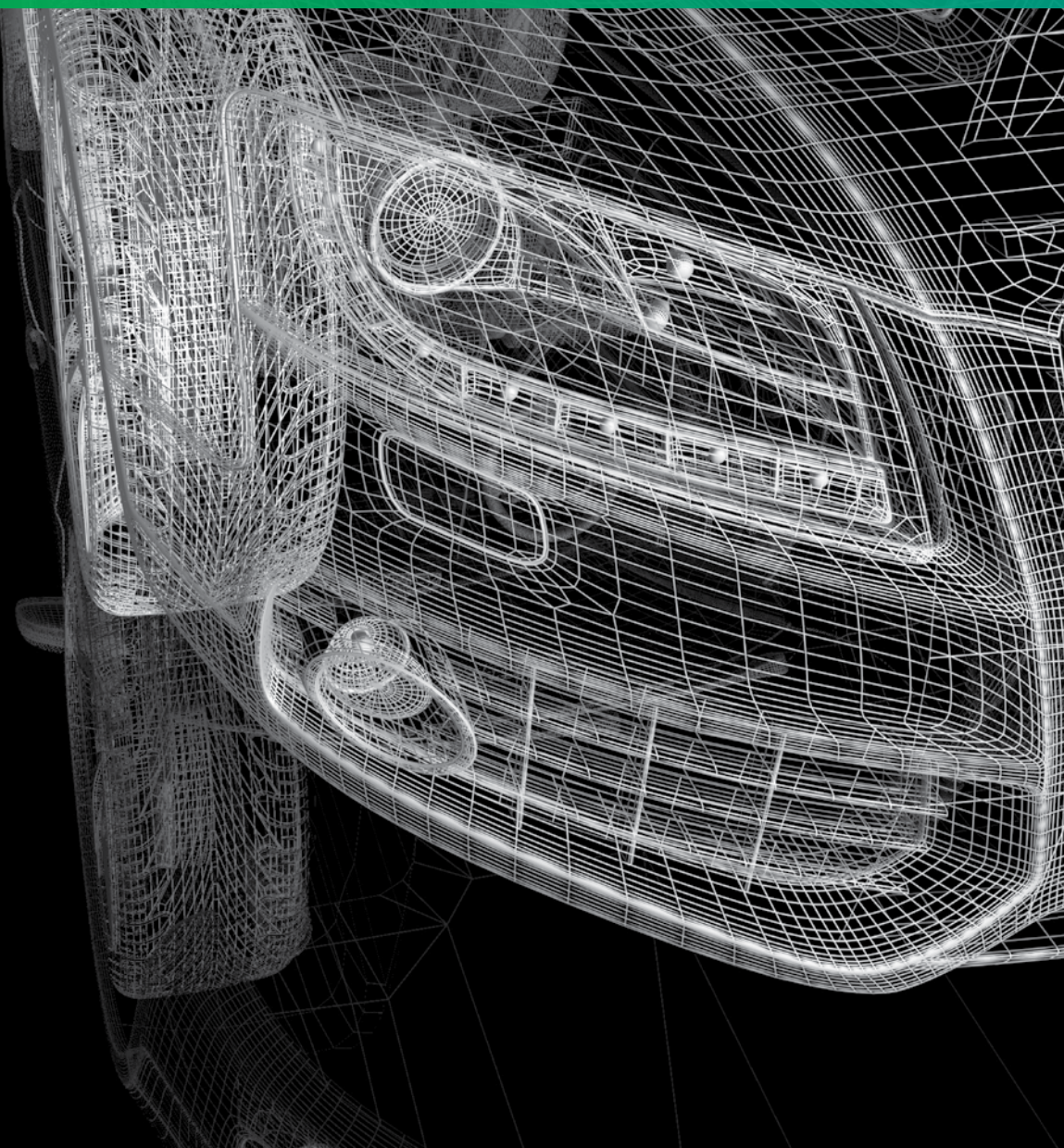
**[ihsmarkit.com/mobilityinsight](https://ihsmarkit.com/mobilityinsight)**





# Light Vehicle Forecasts

**Evaluate options, mitigate risk, optimize investments,  
and improve performance, today and tomorrow**





## Light Vehicle Sales Forecasts

The Light Vehicle Sales Forecast delivers insight on market demand, segment growth, and competitive dynamics.

### Light Vehicle Sales - Base Forecast (7-Year)

Updated twice per quarter and backed by 10 years of historical data, our Light Vehicle Sales Forecast provides an in-depth, rolling 7-year view for 145+ countries across 11 regions representing more than 97% of global light vehicle sales.

#### ADD-ON MODULES

- **Contingency Forecasts**  
Provides two alternative model-level forecasts with the same detailed fields as our base sales forecast.
- **Import Sourcing**  
Delivers additional depth and breadth for strategic sourcing & procurement.
- **Cycle Plans**  
Provides start/end-of-sales date fields for each vehicle/body type combination per sales country for 70+ countries.
- **Body Type**  
Extends vehicle-level forecasts and analysis to include vehicle body type, regional subsegment, and regional price class.
- **Vehicle List Price Forecast**  
Enhances the Body Type module with a seven-year view of future passenger car list prices to the model level.
- **12-Year Extension**  
Extends our 7-year forecast volumes to include years 8–12.
- **Monthly Volumes**  
Reveals Sales and Body Type Forecasts in monthly data buckets for the current year plus two forecast years.
- **Forecast Simulation (NewFor)**  
Our Forecast Simulation tool brings a powerful planning and decision-making capability that enables OEMs and National Sales Companies (NSCs) to build, run, and evaluate “What if?” scenarios based on a variety of forecast assumptions.

### Light Vehicle Sales: Sub-Saharan Africa Forecast

The Sub-Saharan Africa Light Vehicle Sales Forecast provides market demand for 50 countries. Only IHS Markit is able to provide this holistic view, combining intelligence feeds of its market-leading economic and consumer data forecast services into a single vehicle demand forecast.

### US Retail Fleet Forecast

With fleet registrations accounting for a significant percentage of light vehicle sales, forecasting this channel has never been more important. Automakers rely on fleet sales to generate volume. In addition, the brand exposure presents a unique opportunity to get in front of potential customers. The IHS Markit US Retail Fleet Forecast offers unique insight into the different sales channels within the US market.

### Sales, Volume and Market Planning Advisory Services

#### *In-depth market, vehicle launch, and supplier component entry strategies*

Global automakers are shifting unprecedented levels of capital and resources towards the development of autonomy, connectivity, electrification and shared mobility capabilities. It's more than the components that make up the car that's changed – entire business models may be evolving as we move from an ownership to a service-based model. To spur an alternative perspective, several automakers and suppliers have also taken the next step of establishing new capital structures and organizations.

IHS Markit helps automakers and suppliers plan for the future with customized scenarios and strategic plans. Leveraging our industry leading vehicle forecast models and planning solutions, we can address your unique challenges and pave the way for greater future success.

# Light Vehicle Forecasts

## Light Vehicle Production Forecasts

### Light Vehicle Production Base Forecast (7 year)

Light Vehicle Production Forecasts offer an in-depth view across 50+ countries, 900+ plants, and 8,000+ models, giving OEMs and suppliers the ability to identify new opportunities, defend against competitors, and optimize current programs, capacity, and business performance.

Updated monthly and backed by 10 years of historical data, our Light Vehicle Production Forecast provides detailed analysis on regional economics, sales, production, competitive segmentation, product cycles, and manufacturing strategies. Geographic coverage of 50+ production countries across seven regions represents 99% of global light vehicle production.

Field coverage of 30+ attributes are reported consistently for all light vehicles produced.

Full subscribers also have access to detailed cycle timing information including product actions and system redesigns (facelifts) for chassis, engine, exterior, interior, suspension, and transmission.

#### ADD-ON MODULES

##### – Contingency Forecasts

Provides two alternative model-level forecasts using the same 30+ detailed fields as the base production forecast.

##### – Plant Capacity Utilization

Provides analysis for each light vehicle assembly facility (plant) including production structure setup, and global analysis for total capacity/utilization by OEM and region.

##### – Export Destination

Provided for each vehicle and plant, this module covers sales regions, markets, and countries; currencies of both production countries and sales countries; and sales nameplate.

##### – 12-Year Extension

Extends our 7-year forecast volumes to include years 8–12.

##### – Body Style

Extends forecast coverage to 30 body styles. Includes vehicle silhouette and the number of apertures/doors.

## Vehicles-in-Operation Aftermarket Forecast

### WorldView

Building from the most credible, VIN-based historical registration data available, IHS Markit offers a 5-year VIO forecast across the United States and a 15-year forecast for the rest of the world.

You will no longer struggle to develop a VIO forecast internally. You can rely on our forecasting experience and expertise to guide your product lifecycle planning and provide accurate insights into strategic market shifts. The VIO Forecast includes both vehicles currently on the road and those set to launch within the forecast horizon. With WorldView, you can plan for future vehicle populations, build a detailed part-level forecast, and predict vehicle replacement parts.





# Commercial Vehicles

**Get the world's best insight into light, medium and heavy commercial vehicles**





## Medium & Heavy Commercial Vehicle Forecasts – Global/Regional

**Covering more than 95% of the global truck market, our Medium & Heavy Commercial Vehicle forecast subscriptions provide sales and production insight by region, country, manufacturer, segment, and plant. Our MHCV subscriptions include:**

### Medium & Heavy Commercial Vehicle Industry Forecast

Providing production and new registration truck sales in more than 75 countries, the MHCV Industry Forecast offers a consistent 12-year view to the brand level by weight segment that can be tailored by country, manufacturer, and medium and heavy gross vehicle weight segments for rigid and articulated trucks greater than six tons.

### Medium & Heavy Commercial Vehicle Model Production Forecast

Provides model and platform-level production forecasts (assembly plant and capacity), analysis, and cycle plans of medium- and heavy-duty trucks and buses globally.

The forecasts leverage 10 years of historical data to present a 7-year (current plus 6 years) view of uniformed and consistent weight segmentation for vehicles over six tons.

### Medium & Heavy Commercial Vehicle Engine Production Forecast

Providing the most comprehensive technical and geographic coverage of current and future medium/heavy engines, the MHCV Engine Production Forecast is based on 10 years of historical data covering 20+ technical engine attributes for vehicles greater than six tons. It provides a 7-year view (current plus 6 years) into engine production by platform, model, plant, and engine installation.

### Medium & Heavy Commercial Vehicle Model Family Sales Forecast

Provides 7-year model-level forecasts for key commercial vehicle markets around the world. Covering vehicles greater than six tons, the forecast details body type, weight class, program and platform codes, and start and end of production.

### Reinventing the Truck

Major shifts loom in the medium and heavy-duty trucking industry. Alternative powertrain options, driverless technology, and increased logistical efficiency are just some of the themes around which there is major uncertainty.

IHS Markit is uniquely positioned to look within and across these inter-related industries and offer insights into the changing landscape. In Reinventing the Truck (RTT), we brought together supply chain, automotive, and energy expertise to identify and address the major unknowns facing the industry. This one-time purchase of a market update refreshes our scenarios for the future of trucking and extends our forecasts to 2050.

## North American Commercial Vehicles

### Understand commercial vehicle registrations and vehicles in operation and identify your best fleet prospects

#### Commercial Vehicles in Operation and Registration Data for the United States and Canada (TIPNet)

To truly understand how you're doing against your competition, you need to have a clear view of the market. TIPNet is a web-based interactive system designed to give insight into the entire commercial vehicle industry.

The system provides VIO (vehicles in operation) and New Truck Registration information on light/medium/heavy commercial trucks and new commercial trailers. TIPNet assists in identifying the best areas of opportunity and provides actionable information to help drive your business.

#### Commercial Aftermarket Parts Demand

IHS Markit is your source to find new sales and service opportunities. Our fact-based parts consumption models offer a more accurate picture of overall demand by location and specific categories of parts to help you know what is selling and where, who is buying, and how large the demand is in the United States.

#### Return-to-Market Commercial Vehicle Predictor

IHS Markit assists dealers and vehicle manufacturers competing in the commercial vehicle space to better target prospects that are most likely to be in the market for a new vehicle during a specific time period. The service was specifically developed to identify businesses with fleets of 1–250 units of gross vehicle weight (GVW) 1–8 vehicles in the United States.

#### Commercial Vehicle Direct Marketing List

The fleet market undeniably yields greater sales and service opportunities per lead than the automotive retail market.

A single business can mean more to your potential bottom line than an entire group of consumers. The IHS Markit exclusive Commercial Account File enables you to effectively reach the hottest fleet prospects within the United States.

The Commercial Account File is an impressive accumulation of a rolling 18 months worth of fleet vehicle data from all nonrestricted states.

This fact-based, current commercial vehicle data is used in conjunction with industry-leading business data to generate the strongest commercial fleet lists in the industry—enabling you to target commercial prospects that currently own and/or operate specific vehicles within their fleet.

#### Commercial Vehicle Loyalty and Competitive Threat Alert

IHS Markit offers the industry's only fact-based measurement of loyalty in the commercial vehicle marketplace designed specifically for medium- and heavy-duty vehicle and engine original equipment manufacturers. Across the industry, down to the manufacturer, make, model and engine, these insights provide detailed loyalty, conquest and defection information about all customers, not just the largest fleets, with 5-year trending.

#### Change of Ownership Reporting and Analysis

Make the most of the opportunities that exist in the used commercial vehicle market. IHS Markit Change of Ownership reporting provides the industry's leading view into the used commercial vehicle market to help you drive the performance of your business.



# Electrification, Powertrain & Compliance

**The most comprehensive coverage of current and  
future propulsion systems**

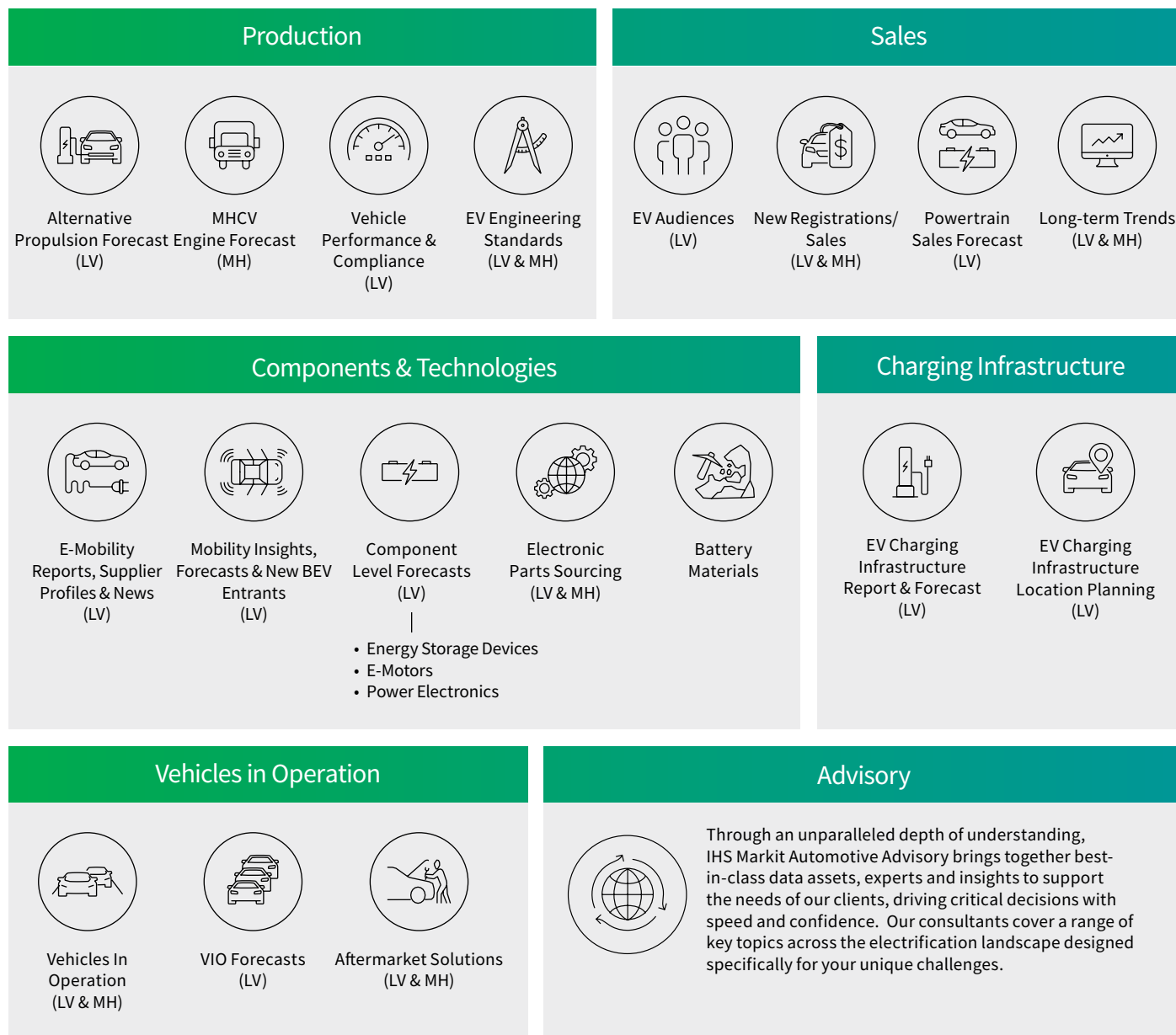




## Electrification

**Electric vehicle (EV) technology is on the cusp of a steep deployment growth stage that will greatly impact the automotive and transportation industries. In a decade or less, the BEV will meet the four criteria that make it competitive or better than the internal combustion engine (ICE) vehicle—purchase price, variety of models for most use cases, public charging infrastructure approaching gas station coverage, and much lower operating costs than ICEs. IHS Markit helps automakers and suppliers navigate this seismic change for how vehicles are powered.**

### IHS Markit Electrification Capabilities



## Powertrain Forecasts

**Our solutions deliver industry-leading analysis for currently available powertrains and future propulsion technologies. Armed with these insights, business, product, and marketing strategists can make better planning and investment decisions.**

### Transmission Forecast

Providing complete technical and geographic coverage, the Light Vehicle Transmission Forecast provides a seven year view enabling greater insight into production by platform, model, plant, and vehicle installation.

#### ADD-ON MODULES

- **Driveline**  
Includes standard forecast spanning an 8-year horizon (current year plus 7) across 50+ countries, with detailed installation forecasts by vehicle, engine, and transmission.
- **Alternative Propulsion**  
(also available as a “Stand Alone”)  
Covers 30+ attributes across all alternative-propulsion-powered light vehicles produced.
- **12-Year Extension**  
Provides calendar-year forecast volumes for years 8–12.

### Engine Forecast

Providing complete technical and geographic coverage, the Light Vehicle Engine Forecast provides a seven year view enabling greater insight into production by platform, model, plant, and vehicle installation.

#### ADD-ON MODULES

- **Alternative Propulsion**  
(also available as a “Stand Alone”)  
Covers 30+ attributes across all alternative-propulsion-powered light vehicles produced.
- **12-Year Extension**  
Provides calendar-year forecast volumes for years 8–12.

### Alternative Propulsion Forecast

Evolving government regulations and growing consumer demand for increased fuel efficiency are driving massive investment and technological innovation in OEMs’ alternative propulsion strategies. Successful powertrain electrification programs require a thorough understanding of all the factors involved in replacing current systems—technologies, timing, model cycles, competitive strategies, supply-chain implications, and more. The Alternative Propulsion Forecast provides a seven year forecast covering 30-plus attributes consistently across all alternative propulsion-powered light vehicles produced.

#### ADD-ON MODULES

- **12-Year Extension**  
Provides calendar-year forecast volumes for years 8–12.

### Powertrain Sales Forecast

What is your strategy for achieving CO<sub>2</sub> compliance? What electrification or fuel types have the greatest growth potential? How will the state of individual market’s charging infrastructures and legislative policy effect powertrain sales? IHS Markit is providing detailed Powertrain Sales Forecasts for the United States, Europe, Brazil and India, which enable a more thorough market insight based on client’s segmentation. We can also help with the identification of relevant legislative drivers—e.g. stricter emission requirements, urban access regulations etc.—and assess their effect of sales volumes and model choice.

### US State EV Density Forecast

Navigating the US automotive market is becoming increasingly complex. State-level forces, and their responses, are impacting local vehicle markets in a unique way that cannot be observed through a national forecast. Automotive stakeholders need support interpreting how these factors impact state-level automotive markets and drive state vehicle and powertrain forecasts. IHS Markit provides detailed forecasts for each state individually, driven by a robust and repeatable methodology.

## Vehicle Performance and Compliance (VPaC)

**VPaC provides critical insight into the single greatest area of research and development (R&D) in automotive. Starting with a view into OEM fleets and competitive CO<sub>2</sub> performance, VPaC identifies who will strike the best balance between performance and emissions (by brand, segment, or model line) and which OEM may face financial penalties. VPaC offers a one-stop shop for vehicle performance and compliance insight. The base forecast and three ADD-ON MODULES include:**

### CO<sub>2</sub>/Fuel Economy (Base forecast)

Integrates sales-based powertrain forecasts with fuel consumption and fuel economy & CO<sub>2</sub> regulation parameters

#### ADD-ON MODULES

##### – **Vehicle Performance:**

Enables insight into competitive position on the important trade-offs between vehicle performance and efficiency.

##### – **Vehicle Compliance:**

Provides an unbiased, physics-based independent outlook on potential OEM compliance gaps.

##### – **12-Year Extension:**

Adds 5 additional years to the forecast horizon.

## Compliance Suite

53% of automakers are expected to miss compliance targets in the US, EU, and China by 2020. The Compliance Suite will provide comprehensive data and analytics illustrating technology pathways along with their associated investments in meeting fuel economy regulation.

### (EU) COMPLIANCE+

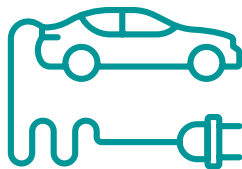


#### **How far is a fleet from compliance? How much are the associated fines?**

Identify the gap between the current fleet mix and compliance regulations. Gauge current and future fleet-average position and assess the fines associated for non-compliance.

For the United States and China, this functionality is included in Compliance Tech

### COMPLIANCE TECH



#### **What technologies can help close the compliance gap?**

Apply various “force compliance” options based on IHS Markit pre-defined pathways and see the likely outcomes. Pathways to compliance include:

- Mechanical
- Electrification
- Fleet mix & credits

### COMPLIANCE COST



#### **How much will pathways to compliance cost?**

Enables financial planners to understand the overall investment of the technology required for achieving compliance based on the three specified routes outlined in the Compliance Tech module.





# Components and Technologies

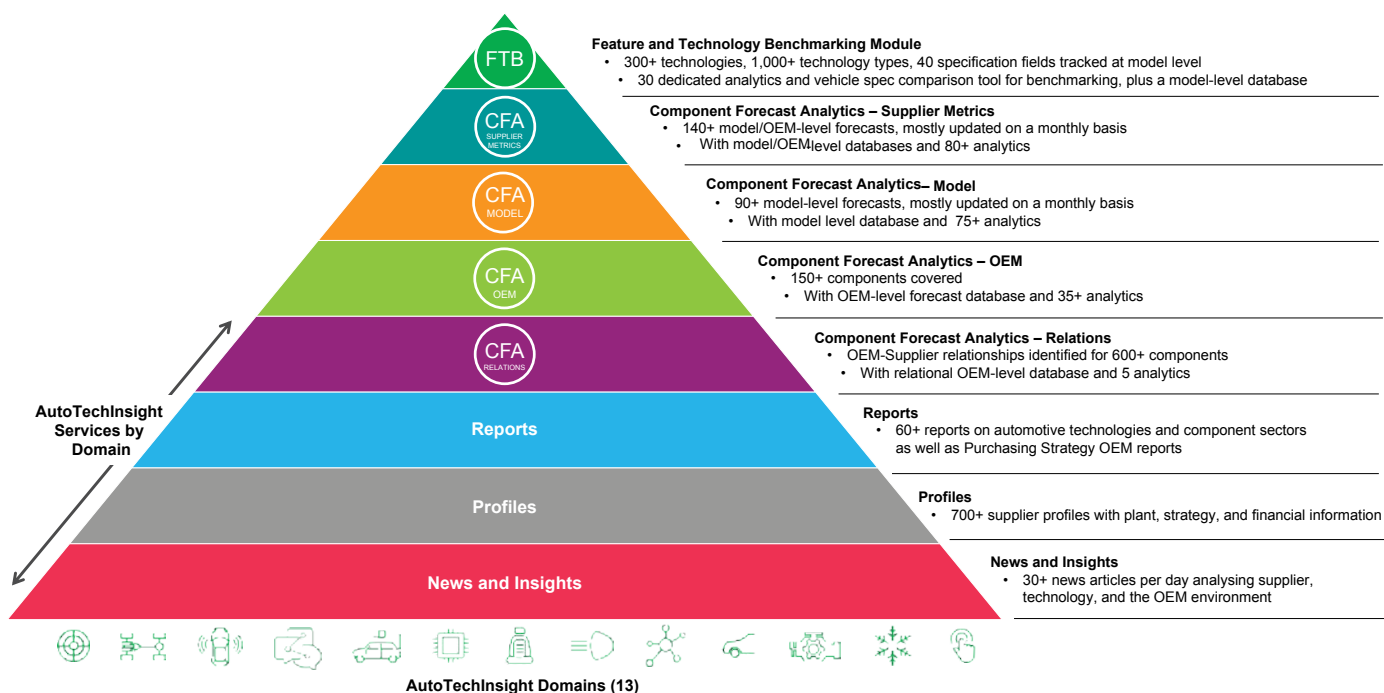
**A wealth of original thought leadership, data, and analysis for components, technologies and the vehicle ecosystem**



## AutoTechInsight is the gateway to IHS Markit's component and technology research, thought leadership and analysis.

AutoTechInsight from IHS Markit is a business intelligence platform providing access to a wealth of original research, analysis, forecasting and thought the leadership on automotive technology, the vehicle eco-system, and the supporting supply chain. The platform has the widest and deepest coverage on vehicle technology, ranging from e-mobility hardware and autonomy-enabling hardware to traditional domains such as chassis and interior which are being impacted by the automotive industry's megatrends.

AutoTechInsight serves this wealth of intelligence through a variety of asset types, from daily news and insights to granular data sets and insightful analytics. A variety of automotive stakeholders use AutoTechInsight for making critical business decision on an ongoing basis.

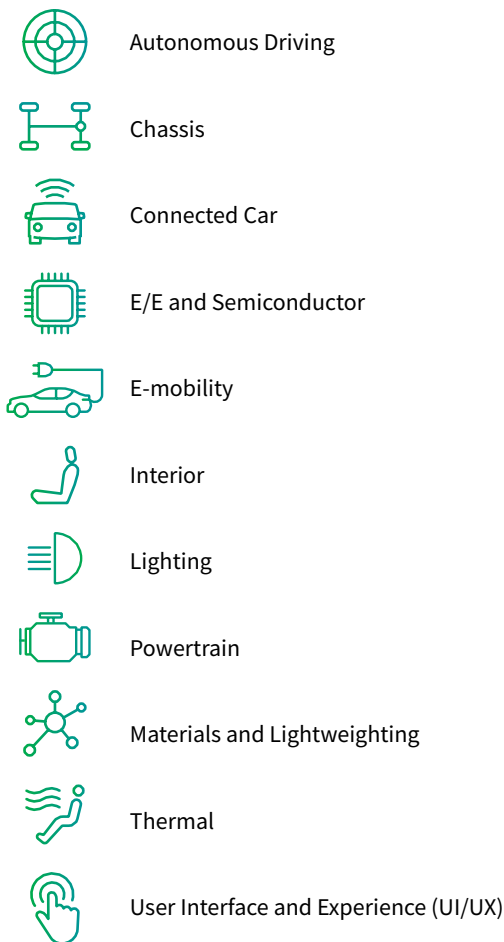


# Vehicle Components and Technologies

## AutoTechInsight Services

*Offering a lens into a dozen vehicle component categories featuring news & insights, reports, profiles, and more.*

Each of the 13 services provide the insight you need to anticipate future demand, access competitive intelligence, and stay abreast of changing dynamics.



## Component Forecast Analytics

*Providing timely, reliable, and comprehensive automotive component forecasts.*

Component Forecast Analytics (CFA) provides current and prospective granular data on components and subsystems to address specific workflows and questions that are common to those wanting to understand more about the auto supplier sector.

**Four levels of granularity are available:**





## Features & Technology Benchmarking

### *Unprecedented ability to compare automotive technologies and specifications side-by-side.*

Features and Technology Benchmarking (FTB) provides automotive stakeholders with visibility into current and future OEM technology and feature strategies backed by granular data on over 300 technologies based off IHS Markit's vehicle and powertrain forecasts.

On top of a granular data at the model level, the tool also provides intuitive analytics to help benchmark individual models and brands, understand their strengths and weaknesses, identify gaps in a carmakers' feature offering and future must-have technologies.

- 300+ technologies
- 1000+ technology types
- 40+ specification fields
- 5000+ vehicles
- 250+ brands
- 30+ analytics and a vehicle spec comparison tool
- 6 year forecasts

## Materials & Lightweighting

Lightweighting and Material section is one of the biggest challenges automotive manufacturers face today. Material and manufacturing process selection is critical to achieve Lightweighting targets and vehicle sustainability targets. The Materials and Lightweighting domain at IHS Markit aims to quantify demand and provide visibility into the material trends in the light vehicle market.

Materials and Lightweighting from IHS Markit provides OEMs and suppliers comprehensive data and analytics to better understand the materials and manufacturing processes used in different vehicle domains (Body-in-White, Chassis and Powertrain).

## Consumer Surveys

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 8,000 vehicle owners intending to purchase a new vehicle within the next 36 months, across eight key automotive markets—the United States, China, Germany, the United Kingdom, Japan, India (new), Brazil (new) and South Korea (new).

Surveys are available for:

- Connected Car
- E-Mobility
- User Experience

## Technology & Mobility Advisory Services

Launching new automotive technologies is challenging for even the most experienced firms. At a time when the automobile is moving from personally-owned transportation to become a shared, self-driving “fully-connected moving computer,” launching new technologies brings even more levels of complexity.

IHS Markit helps you to drive innovation and strategic investment with advisory services that deep dive into technology readiness, costs, consumer adoption curves, and recommendations for strategic corporate investments.

Leveraging our off-the-shelf solutions, including Connected Car Service, Autonomy Forecasting, MobilityInsight and UX/UI Service, we can customize answers for your most challenging questions.



# New Registrations and Vehicles-in-Operation

**Analyze new registrations and vehicles that are on the road**



# Registrations and Vehicles-in-Operation (VIO) Solutions

## Global Registration and Sales Analysis by Model

### MarketInsight

MarketInsight is an intuitive web-based system that provides immediate access to the most comprehensive source of vehicle sales and registration data at a national and regional level.

Combined with IHS Markit accredited forecasting methodologies, analytics (modeling) and expertise, you are able to better identify customer profiles and predict demand across geographies, markets, segments and dealer networks—globally and consistently.

#### New vehicle registrations

National monthly new registration data for 80 countries covering 97% of global vehicles sales.

Data cover make, model, and technical details, pricing and specification data, sales channel and emissions details to help product and sales managers.

#### Used vehicle registrations

As vehicles return from rental companies and the fleet sector, they need to be remarketed. MarketInsight enables automotive manufacturers, NSCs, and dealers to understand used vehicle trends and shift inventories to countries and regions where they are in demand.

#### Vehicles-in-operation (VIO)

Detailed analysis and forecasts in more than 45 countries, covering 90% of global VIOs.



### Global Auto Demand Tracker

The impact of COVID-19 on automotive demand is significant. The IHS Markit Global Auto Demand Tracker helps to understand the pace of recovery. We leverage the most up-to-date data for the last concluded calendar month for 150+ countries.

Immediately upon arrival, data for the last concluded calendar month is turned around on a rolling basis. When actual data are not yet publicly available, the tracker is enhanced with estimates from the IHS Markit Sales Operations Forecast to provide immediate insights.

The Global Auto Demand Tracker is available at both a brand- and model-level. Data include:

- 150+ countries
- 350+ makes/brands
- Fuel-type (BEV, FCV, HEV, ICE, MEV, Plug-in)
- Registration-type (Passenger Cars, Light Commercial Vehicles)
- Body-type level (Car, MPV, Pickup, Sport, SUV, Van, Others)
- Seasonally adjusted (SA) and seasonally adjusted annualized rate (SAAR)
- Views include year-over-year and month-over-month to track emergence of countries from the state of crisis
- OPTIONAL: Make-model (Audi: A1, A3, A4 ..., BMW: 1-Series, 2-Series, ...)





# Registrations and Vehicles-in-Operation (VIO) Solutions

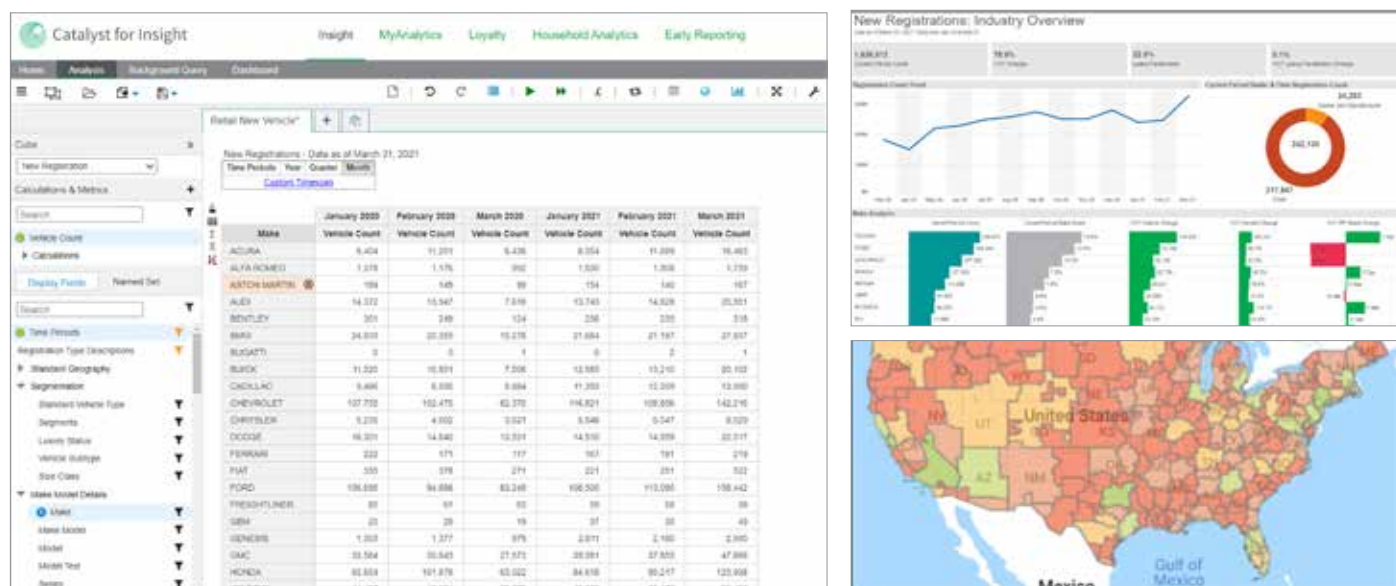
## North American Registration and Sales Analysis

### Catalyst for Insight

Catalyst for Insight is a web-based automotive decision-making platform that allows access to new registrations, used registrations, sales, and vehicles in operation (VIO). Canadian data is also available.

Our powerful online system blends the most timely, consistent, and comprehensive registration and sales data to give users the most complete view of their local and national markets. Catalyst for Insight enables users to easily and effectively analyze and interpret the automotive industry.

Data is “brought to life” through advanced business intelligence, intuitive dashboards, mapping and reporting capabilities that are tailored to meet the needs of diverse users, functional departments and agencies to make critical decisions.



### AutoCreditInsight – for lending institutions

IHS Markit, in partnership with TransUnion, offers current plus five years of new and used vehicle registration counts by month with depersonalized loan and credit information.



# Registrations and Vehicles-in-Operation (VIO) Solutions

## Auto Market Investment Insights for Investors

Packaged to easily integrate into big data platforms, this data feed provides clients with monthly registration data by make and model with the ability to drill into regional trends, all the way down to ZIP code (where available) to better enable investment strategies.

## Loyalty Analytics Services

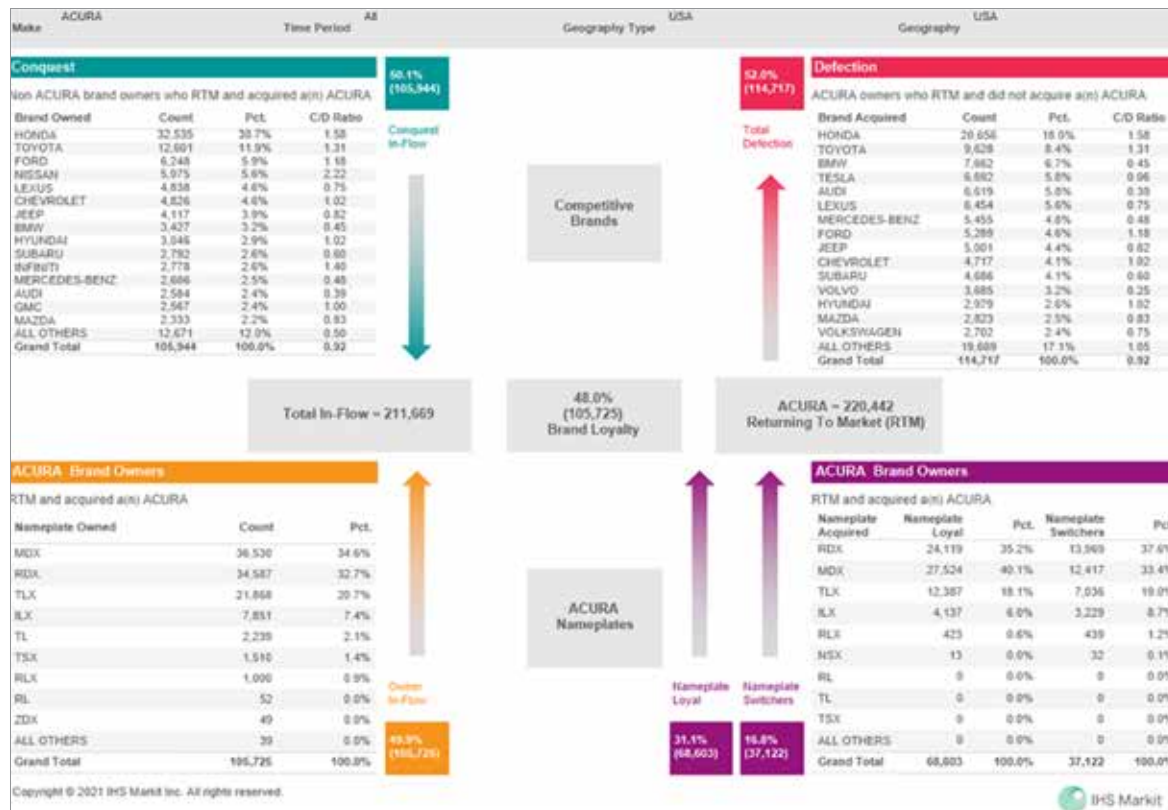
The Loyalty Analytics Tool houses a vast array of data tracking consumer buying behavior from a loyalty, conquest, and defection perspective. Offering various methodologies (household, disposal, dealer, used-to-new with CPO indicator) and a multitude of customizable features, the Loyalty Analytics Tool is a powerful source for better understanding the automotive industry.

## Diversity Market Data

Our data enable you to target growing, lucrative ethnic and gender markets for new/used vehicles, parts and service, and other automotive-related promotions.

## Household Analytics

Household Analytics can identify unique insights like concentrations of recent college graduate or households with five or more cars. These characteristics or triggers can indicate when someone may be in the market for a new car and could indicate what they are likely to buy.



# Registrations and Vehicles-in-Operation (VIO) Solutions

## Early Reporting Suite

Early Reporting provides the most current and accurate insight on vehicles sales, enabling automakers to plan for incentives, meet objectives, and better manage inventories. Early Reporting includes:

**Month-End Forecast:** provides a volume and share forecast of the current and the next month.



**Daily Sales:** daily reporting of cumulative sales, plus a comparison over prior periods (volumes and shares).



**Transaction Analysis:** provides insight into key retail automotive revenue drivers along with five years of transaction data.

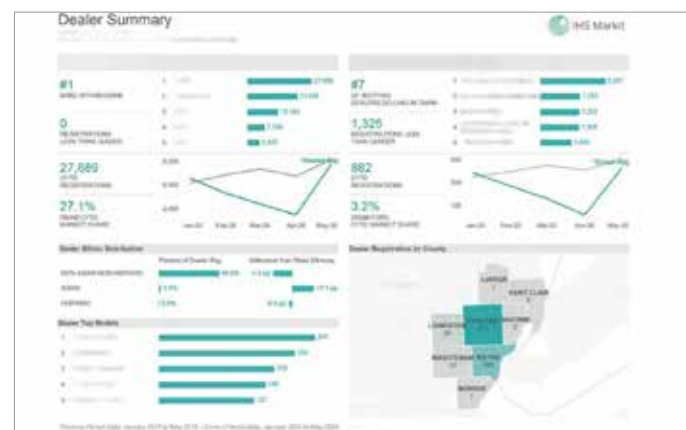
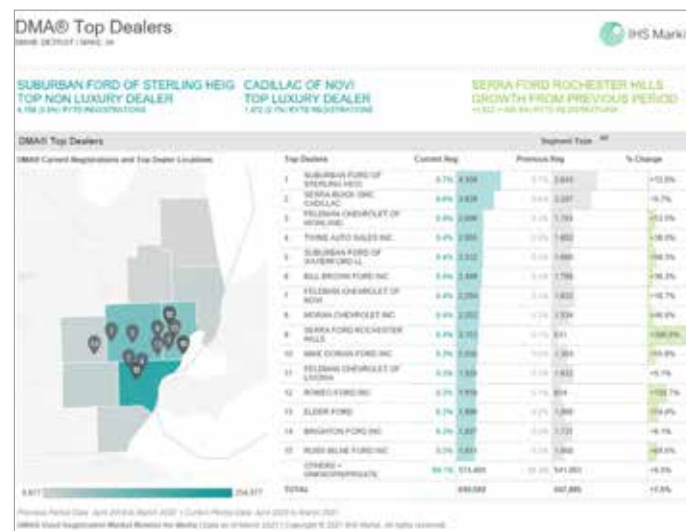


## Auto Market Now (Media)

Auto Market Now is a dynamic data set giving customers the power to make accurate decisions in the new-vehicle market quicker than ever before. Auto Market Now features weekly data aligning to media planning schedules and offers faster insights into dealer performance while providing the ideal balance between accuracy and market coverage.

## Market Monitor (Media)

Market Monitor delivers dynamic DMA® and Dealer-level insights for the New and Used registration markets. These reports enable users to quickly and easily leverage the true dealer opportunity within the New and Used markets, empowering data analytics and sales departments to achieve new levels of success with your media offerings.





# Registrations and Vehicles-in-Operation (VIO) Solutions

## Aftermarket Planning & Cataloging

For more than 30 years, the automotive aftermarket industry has considered IHS Markit the leading provider of automotive forecast data and VIO information. WorldView is a “one-stop solution” for aftermarket professionals looking for credible, third-party data to guide product planning, production, distribution, inventory management, cataloging, and other critical business decisions.

### **Vehicles-in-operation data**

Access current and historical VIO data for over 70 countries. Accurate VIO data help you build, order, and stock appropriate parts to meet customer demand.

### **OE parts research**

Access our extensive research (OE part numbers, specifications, and vehicle fitment details) for 31 European markets mapped to TecDoc codes, and VIO population counts.

### **VIO trends & forecast**

Understand projected US and global vehicle counts for a five-year time period to make solid production planning, inventory management, and investment decisions based on knowledge of future demand for your parts. Includes ACES and TecDoc coding for precise data on market demand for specific parts.

### **Global vehicle equivalent identification**

Gain insights into parts compatibility on vehicles in disparate global markets. This innovative feature, not available elsewhere, helps bridge ACES to TecDoc codes as a starting point for determining the common parts needed on vehicles produced and sold in markets around the world.



# VIN Decoding

**Track down information about specific vehicles**



## VIN Decoding & Information

Need to certify VIN and interpret the information? IHS Markit VIN services help vehicle manufacturers, insurance companies and the government to properly verify vehicles and drivers.

### **Vehicle Verification and Trace Services**

Real-time portal or batch file services to verify vehicle ownership and understand manufacturer model, year, and engine details to decrease fraud and generally improve business results.

### **VIN Decoding**

Quickly decodes VINs to understand manufacturer, model, year, engine details, and other vehicle characteristics.

### **VIN Pattern Data**

Includes all VIN pattern data for all VIN patterns under the jurisdiction of NHTSA and Transport Canada, primarily, North America (US, Canada, Puerto Rico) and VIN patterns for vehicles manufactured in Mexico intended to be sold in the US or Canada.

### **Incentive Verification**

Stop dealer fraud with incentive and owner eligibility verification.

### **Branded Title**

A comprehensive branded title database is critical for dealerships and automotive service centers to determine if a serviced vehicle is branded. Branded Title codes the following: Dismantled, Flood, Junk, Rebuilt, Reconstructed and Salvage.





# Performance Marketing

**Enhance your marketing campaigns and increase customer loyalty**



# Performance Marketing - Polk Automotive Solutions

## Polk Audiences - targeting

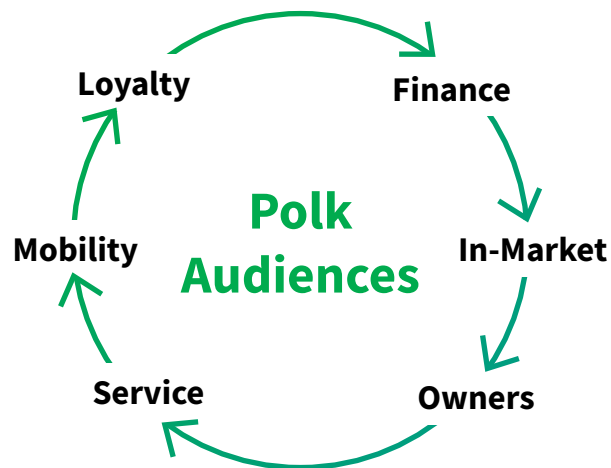
### Built to drive sales, not just traffic

Capitalize on marketplace insights with the confidence and strategic flexibility provided by Polk Audiences. Built on analytics of every new and used vehicle transaction across the United States for each make and model over the past 30+ years, Polk Audiences leverage the deepest and most robust automotive data in the industry to ensure you are activating audiences that deliver on your marketing strategy.

### Polk Audiences predict current & future behaviors throughout automotive lifecycle







Quality audiences start with the best analytics, proprietary modeling predicts likely historic and current household ownership Expertise built from years of refinement. Polk Audiences answers the questions most relevant to automotive buying behavior:

- What vehicles do they own?
- Are they loyal to a brand?
- What will they buy next?
- When is their lease ending?
- When will they be in-market?
- What is their current monthly payment?



### Polk Audience types

700+ data sources, 2,000+ audience segments, 125 MM+ Households, outperforms general market by more than 10x


Owner Audiences			In-Market Audiences		
					
Vehicle Segments	Loyalty Segments	Financial Segments <small>Powered by TransUnion</small>	Sales Segments	Service Segments	Financial Segments <small>Powered by TransUnion</small>
- All Makes & Models	- Brand	- Credit Profile	- All Makes & Models	- Tires	- Lease Expiration
- Current & Previous	- Segment	- Monthly Payment	- Now & Future	- Vehicle Age	- Auto Loan

# Performance Marketing - Polk Automotive Solutions

## Polk Demand Signals – campaign measurement

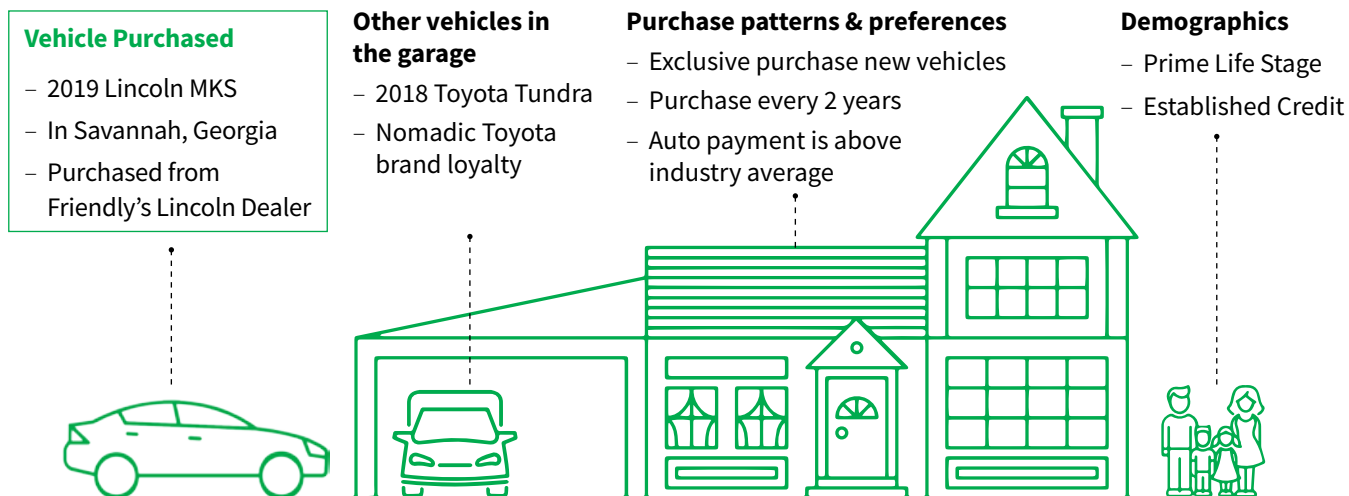
### The source of truth for automotive marketing insights

Daily updates of offline transactions provide “cookie-less” insights into campaign performance across all media channels. Polk Demand Signals provides a holistic automotive profile of the audience strategies powering your marketing investments.

Do they buy vehicles new or used?	What is their future buying potential?	How often are they buying?	Does their garage have your brand or your competitor?	Who is loyal to your brand?	What is their credit history?	What is their average monthly payment?	If they bought, what did they buy?
							
Purchase Type	Life Stage	Frequency	Garage	Loyalty	Credit	Budget	Sales

Households yet to buy | Buying Households

### Measuring total campaign value



### Activation for any channel





# Performance Marketing - Polk Automotive Solutions

## Polk Data Services

Our breadth and depth of data, in conjunction with our state-of-the-art technology, enable us to enrich your owner database to improve your marketing and sales efforts. In addition, you can gain deep insights about your owners by appending your data with demographic, lifestyle, loyalty behavior, purchase triggers and garage composition information. Our owner database services help you uncover opportunities within your own customer base.

### Uncover new opportunities

- Competitive vehicles in the garage
- Credit Profile & Automotive Payment
- Winback & Used owners
- Demographic, ethnicity, & lifestyle

### Analyze historic purchase behaviors

- Competitive trends for upsell and cross sell opportunities
- Loyalty behaviors

### Your Data Made Stronger

### Provide the cleanest, most accurate, & timely data

- Flexible & systematic architecture
- Hygiene & standardization
- National change of address services
- Enhanced contact reverse appends

### Predict future purchase behaviors

- In-market timing
- Vehicle preferences
- Lease term expiring in the household

## PolkDealerMarketing.com – online dealer audience & attribution platform

PolkDealerMarketing.com is a powerful online audience management and attribution tool that allows dealers to create the best audience marketing strategy utilizing Polk Audiences. The website puts you in control of your favorite marketing channels with direct integrations to Facebook, Instagram and on-demand direct mail audiences.

## Capabilities

- Complete access to Polk Audiences
- Audience Selections made easy
- Direct Integration with marketing channels
- Simplified pricing and flat fee packages
- Weekly sales measurement included
- Available 24/7 via mobile or desktop

## Benefits



Reach top prospects for your dealerships with Polk Audiences



Onboard audiences directly to your Facebook, Instagram, & direct mail audiences



Performance tracked at your fingertips - Including new, used, and competitive sales



# Sales and Network Operation Solutions

**Measure performance and find the optimal locations  
for showrooms**



# Sales and Network Operation Solutions

## Dealer Network Solutions

Our Dealer Network Solutions enable national sales companies and automotive service providers to determine the best location and configuration of their retail networks. From adjusting the size and shape of dealers' territories, to determining the best location for a new dealership, we are here to help. IHS Markit can help you optimize the market performance of your retail network with critical insight into market volume, customer drive time, and dealer distribution, location, and density.

### Our Dealer Network Solutions include:

#### Dealer Network Development (DND) studies

IHS Markit customized DND studies help determine network gaps and evaluate existing dealerships regarding location and potential. The analysis provides:

- Ideal network simulation
- Network/dealer gap assessments—providing insight into your network's "distance" from the "ideal"
- The impact of "bridging the gap"—moving from status quo to the ideal

#### NetworkInsight

NetworkInsight is a web-based simulation tool that complements and drives DND analysis and updates. NetworkInsight offers users the ability to:

- Interact with DND analysis via a mapping tool
- Perform "what if" analysis and measure the impact of different scenarios (add, close, relocate)
- Calculate new potential for all points including cannibalization impact
- Perform site potential simulations
- Access monthly reporting data and dealer performance reports

#### New Retail

As disruptive megatrends—digitization, electrification and shared mobility—become a reality, IHS Markit helps automakers understand how they will impact dealer networks in the future. Our New Retail advisory service considers:

- Special treatment of battery electric vehicle potential
- How shared mobility services might replace a significant share of private retail sales
- The onset of diverse dealer types
- The digitization of customer journey and impact on capacity planning needs

## Additional sales and network operations solutions

### Post-Sales Marketing Solutions

In the aftersales world, existing customers are your best source for future business, and your service departments play a major role in customer retention. In fact, there's a direct correlation between service loyalty and future vehicle sales, which lead to long-term loyalty to the dealer, the brand, and the manufacturer.

The Catalyst for Aftersales solution uses key customer and prospect data, as well as relevant market intelligence to provide insights to maintain customer retention and loyalty, to avoid customer defections, to grow parts and service revenue, and to increase overall profitability.

Catalyst of Aftersales helps meet your overall business goals by managing key touchpoints during the vehicle ownership life cycle.

### Sales Operation Forecast

How are the latest monthly registrations impacting this year's volume planning? What effect will this have in coming years and future vehicle generations?

The Sales Operations Forecast provides answers and an independent third-party view to these critical inputs.

Published within days following the release of latest actuals and updated monthly, the Light Vehicle Sales Operations Forecast greatly enhances your short- to mid-term planning.





# Recall

**Get a complete view of current vehicle ownership**



## Recall

Automakers must have an efficient and tested method when a notification to owners is necessary. The key to providing recall services is having the most comprehensive methodology for collecting, compiling and updating the data. Our recall solution incorporates many of our proprietary IHS Markit processes to give you a complete view of current vehicle ownership.

**In addition to standard recall campaign processing, we also offer additional processing:**

- National Change of Address (NCOA) processing
- Branded Title Codes
- Lease Data
- California Air Resources Board Reporting
- In-Use Vehicle Program and Zero Emission Vehicle Support
- Regional Field Actions and Special Coverage Recall
- Telephone numbers
- Class Action Lawsuit Support
- Litigation Support Email Address Appends
- Digital Recall

## Full Service Recall

IHS Markit can manage data and fulfillment for all of your recall programs and service campaigns from start to finish. We partner with trusted fulfillment vendors to bring high-volume, quality, accuracy and speed to our full-service offering. In addition, we are able to leverage industry-wide buying power to pass on cost efficiencies to you.

**Our full-service offering can be customized to the needs of the project and include the following options:**

- automated phone calls
- undeliverable and return mail processing
- multi-wave and follow-up mailings

Our full-service offering provides dashboard reporting and metrics (e.g. completion rates, vehicles with Branded Titles, transactions dates associated with each vehicle). Reporting can also support detailed communications with regulatory agencies (e.g. NHTSA).

## Automotive Class Action and Litigation Service

When a class action lawsuit arises, it is paramount that the defendants and plaintiffs have access to accurate, comprehensive vehicle and owner data to properly analyze and define the size and value of the class to assist in supporting the litigation process. Once the class action settles, it is important to be able to identify the current and historical owners included in the class to support quick, accurate notification. Leveraging a database with over eleven billion US vehicle records of owner information by VIN, IHS Markit enables attorneys and settlement administrators to quickly define, analyze and facilitate successful class action lawsuits and settlements

- Identify the number of vehicles and owners in a class action
- Analyze the class and define the value of the settlement
- Identify current owner name, address and contact information
- Ensure execution of class action notification and reporting



# Advisory Services

**Solutions scaled towards your specific needs**



## Automotive Advisory Services - Transforming data into knowledge

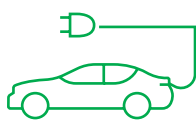
**Deep expertise, coupled with the largest commercial repository of automotive intelligence, can help you tackle your greatest strategic and operational challenges**

IHS Markit is a world leader in critical automotive information, analytics, and expertise. We deliver next-generation insights and solutions to help customers with their greatest strategic and operational challenges. Now, as the automotive ecosystem moves from an Internal Combustion Engine (ICE) single-owner vehicle to a connected, autonomous, shared, and electrified (CASE) computer on wheels, it has never been more important to have a window into the future and understand what it means for century-old business models. IHS Markit can help you determine your strategic vision and test future scenarios for vehicle demand, use cases, and the viability of new technologies.



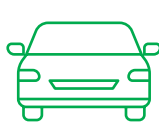
### Sales & market planning

Vet and support market strategies with in-depth, custom scenario planning and insights from a proven business partner.



### EV planning services

Identify the business challenges and opportunities to thrive in an electrified automotive environment including; component and vehicle level product and launch planning, sales and marketing support, future retail network optimization.



### OEM sales & marketing

Identify actions that drive ROI on sales and marketing expense including increasing loyalty and conquest effectiveness, customer targeting, competitive positioning and insights as well as product strategy support.



### Dealer network planning

Optimize retail networks, design the retail sales approach of the future including physical, digital, with deep customer insights, dealer model and profitability considerations including format and resource optimization leveraging industry leading datasets and methodologies.



### Technology & mobility

Plan for tomorrow, leveraging industry-leading strategic insights into the dramatically changing mobility landscape and the enabling technologies and solutions.

## Our approach

**Our unparalleled expertise, best-in-class data assets, and deep industry insights drive critical decisions with speed and confidence. From single projects to ongoing support, we offer a variety of solutions that can be scaled toward your specific needs.**



Market sizing and forecasting



Market entry and development

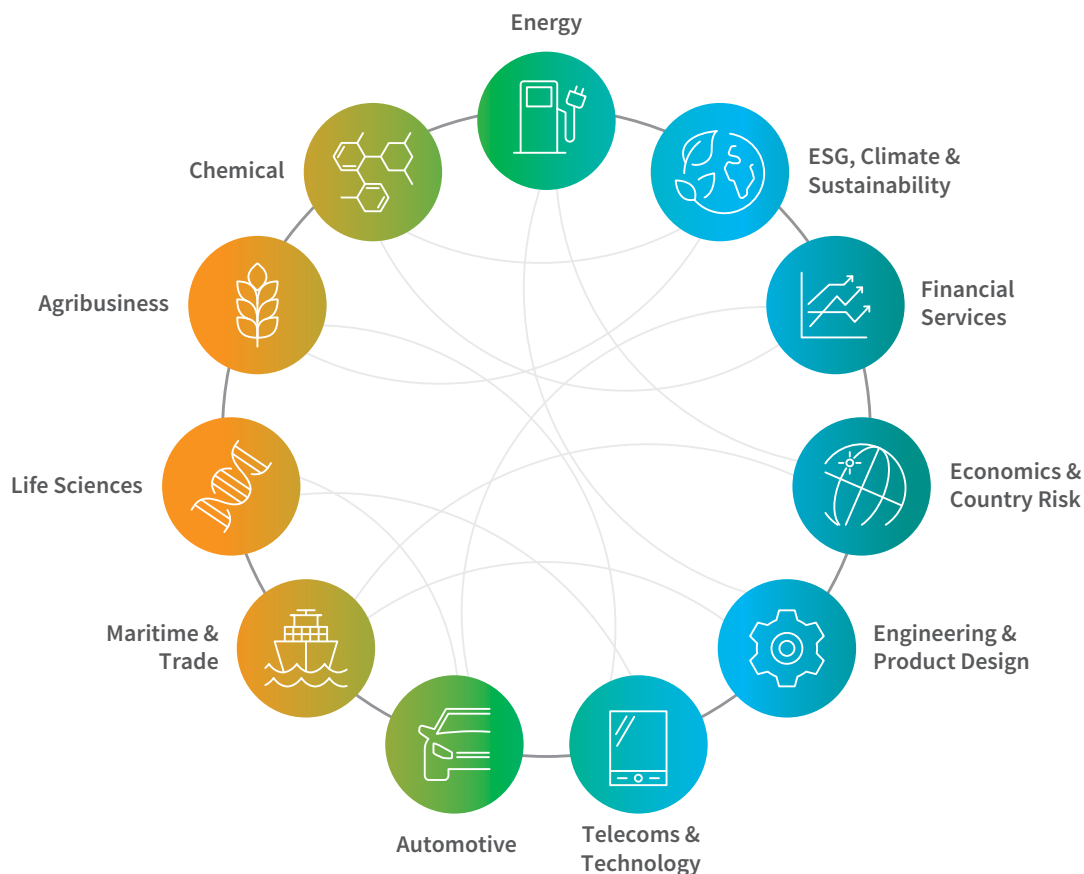


Strategic support services



Executive advisory services

**IHS Markit is harnessing the deepest sources of information, analytics and expertise to forge solutions for the industries and markets that drive economies worldwide. Leaders in business, finance and government rely on us to help them see the big picture and interconnected factors that impact their organizations. This knowledge allows them to understand why things happen and focus on what really matters.**



## **IHS Markit Experts**

**Access 750+ industry-leading subject-matter experts 1-on-1**

Get a deeper understanding on the specific topics you need across a vast array of interconnected industries. Schedule a session today with our easy-to-use online booking tool, or through our premium concierge service.

[ihsmarkit.com/experts](https://ihsmarkit.com/experts)

## **IHS Markit Data Lake**

**Explore, access and coalesce our data, your data and third-party data on a single, cloud-based platform**

Populated with over 1,000 of our datasets from multiple industries, including financial services, automotive, maritime, energy & natural resources, data have been curated into more than 350 packages to expedite time-to-value.

[ihsmarkit.com/datalake](https://ihsmarkit.com/datalake)

## **Climate and Sustainability Hub**

**Learn about the global drivers of climate change affecting the automotive industry**

Gain insights into energy and climate policies and regulations, batteries and energy storage reports and scenarios, climate and cleantech trends, and more from our Climate and Sustainability research.

[ihsmarkit.com/CSGHub](https://ihsmarkit.com/CSGHub)

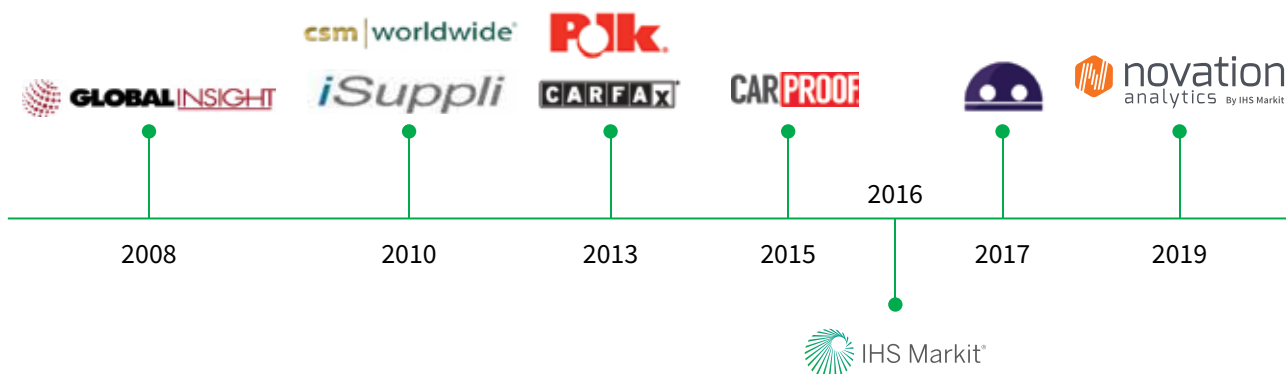




## Automotive from IHS Markit

IHS Markit provides market-wide insight, expertise, and advanced planning solutions for the automotive industry. With a legacy dating back to the 1920s when R. L. Polk published the first vehicle registration reports, we now deliver next-generation insights and solutions to help customers improve operational efficiency and inform confident strategic decisions. Our expertise spans every major market and the entire automotive value chain—from product planning to marketing, sales and the aftermarket. With a reputation of enabling better decisions and better results, the world's leading automakers, suppliers, and their stakeholders rely on IHS Markit to power growth, improve efficiency, and drive a sustainable competitive advantage.

### An ongoing commitment to expand our automotive offerings



## Sustainability

Contributing to a better world is a core value at IHS Markit, and our commitment to sustainability is a key part of our company DNA. The year 2016 was transformational for our company and for the global community of organizations committed to corporate sustainability.

We merged two proven leaders, IHS and Markit, to form a new information powerhouse capable of providing even greater value to our customers and the industries and markets that drive global economies. IHS Markit immediately adopted sustainability as one of our five corporate goals. We also emerged as a frontrunner in addressing sustainability issues from a new perspective. Our unique ability to look at business information in a holistic way provided us with a natural advantage when tackling economic, environmental and social sustainability challenges through a new global framework – the United Nations Sustainable Development Goals (SDGs).

For more information [www.ihsmarkit.com/automotive](http://www.ihsmarkit.com/automotive)

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## About IHS Markit

IHS Markit (NYSE: INFO) is a world leader in critical information, analytics and expertise to forge solutions for the major industries and markets that drive economies worldwide. The company delivers next-generation information, analytics and solutions to customers in business, finance and government, improving their operational efficiency and providing deep insights that lead to well-informed, confident decisions. IHS Markit has more than 50,000 business and government customers, including 80 percent of the Fortune Global 500 and the world's leading financial institutions. Headquartered in London, IHS Markit is committed to sustainable, profitable growth.

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