FROST & SULLIVAN

Strategic Shift from Traditional Insurance to Digital Insurance: The Rise of Automotive Insurtech

October 2025

SCOPE OF ANALYSIS

Scope	
Geographic Coverage	Global
Study Period	2024-2031
Base Year	2024
Forecast Period	2025–2031
Monetary Unit	US dollar

- Initially, automotive insurtech leveraged basic vehicle diagnostics and telematics for usage tracking, but today it integrates AI, IoT, ML, blockchain, APIs, and cloud computing for real-time risk assessment and digital engagement.
- The surge in connected vehicles, ADAS, and software-defined vehicle architecture has significantly improved data granularity, enabling more personalized, behavior-based, and flexible insurance offerings.
- Embedded insurance, real-time first notice of loss (FNOL), AI-assisted claims processing, and partnerships with OEMs, TSPs, and fintech are reshaping distribution models and customer journeys.
- This study explores global insurtech trends in automotive insurance, identifying future growth opportunities, regulatory shifts, and strategic imperatives for insurers, start-ups, OEMs, and platform providers.

- What is automotive insurtech, and how is it transforming traditional insurance models through digital tools such as UBI, embedded insurance, and automated claims?
- What are the main drivers and barriers influencing the adoption of insurtech in auto insurance, including consumer behavior, regulations, and evolving mobility trends?
- How are traditional insurers and new-age start-ups adapting to this shift—what are their strategies, digital offerings, and technology partnerships?
- Who are the key technology enablers, and how are they powering this transformation in auto insurance?
- What are the growth opportunities in insurtech, and how will they shape the future of the industry by 2031?

HISTORICAL OVERVIEW: TRADITIONAL AUTOMOTIVE INSURANCE MODEL

Traditional automotive insurance is a **vehicle-centric and demographic-based policy** model where **premiums are calculated** based on **historical data and broad risk categories** rather than real-time driving behavior.

1900s-1950s
Birth of Automotive Insurance

- First auto policy sold in 1897 (UK); early 1900s in the US
- Flat-rate premium based on vehicle value, age, and basic demographics
- Manual underwriting, paper-based processing

1960s-1980s
Standardization and Regulation

- Rise of regulatory bodies and mandated auto insurance in many regions
- Use of driver history, claims records, and geography in pricing
- Shift to standardized policy forms and agent-based distribution

1990s-2000s
Digitalization Begins

- Introduction of insurance software and desktop underwriting tools
- Rise of aggregators and online comparison portals
- Basic digitalization of customer service and policy management

Key Points

Static Risk Assessment

Annual Premiums

Manual Underwriting & Claims

Low Personalization

Agent/Broker Distribution Model

Delayed Feedback Loop

THE TRANSITION: FROM RISK POOLING TO PERSONALIZED, DATA-DRIVEN MODELS

Auto insurance is undergoing a paradigm shift—**from broad-based risk pooling to hyper-personalized, real-time models powered by data and connectivity.**

2010s
The Connected Pivot

- Advent of telematics and UBI
- OEM partnerships and black-box data experimentation
- Mobile apps for policy access and claims initiation

2020s Onward
Rise of Insurtech and Automation

- Shift to behavior-based, real-time risk scoring
- Use of AI, ML, and IoT for pricing and fraud detection
- Embedded insurance and OTA policy updates

Shift Enabled by

Telematics (OBD-II, embedded sensors)

Smartphones and mobile apps

AI and big data analytics

IoT and connected car platforms

Key Points

Dynamic Pricing based on driving behavior, time, and distance

Higher Customization pay-as-you-drive/ pay-how-you-drive

Real-time Feedback for safer driving and lower premiums

Digital-first Onboarding and instant claims through apps

RISE OF DIGITAL NATIVES AND NEW BUSINESS MODELS

The rise of digital natives is driving new auto insurtech models that offer on-demand, personalized, and seamless insurance experiences to meet their expectations.

Digital-first expectations

- Consumers now demand instant quotes, self-service claims, and app-based policy management.

UBI

- Pay-per-mile
- Pay-how-you-drive/ behavior-based pricing models
- Pay-as-you-drive

AI and Automation

- Chatbots
- Automated FNOL and digital accident detection
- Instant claim approvals are becoming the norm.

Embedded Insurance

- Coverage integrated seamlessly at the point of vehicle sale, lease, or through apps

Modular Products

- Flexibility to add/remove coverage based on lifestyle or seasonal needs
- Instant claim handling/ processing

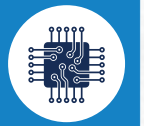
EV and Shared Mobility

- New vehicle ownership models push insurers to rethink product structures.

Source: Frost & Sullivan

MAJOR TRENDS IMPACTING THE AUTOMOTIVE INSURTECH SPACE

Technology Advancements



- **Innovations in AI, IoT, and telematics** integrate advanced data aggregation techniques into insurtech.
- These technologies are **disrupting traditional automotive insurance models with more personalized and efficient solutions.**
- This integration is driving **significant advancements and competitive shifts** in the auto insurance industry.

Increasing Vehicle Connectivity and Digitalization

- **Connected cars** create new data sources that influence UBI premiums.
- The automotive industry's **shift from hardware to software** is generating vast amounts of vehicle data.
- **Data-driven strategies** are becoming crucial for market dominance in the automotive sector.
- Leveraging customer data effectively can drive a competitive advantage in the industry.

Social Shift/ Sharing Economy

- **Shared mobility solutions and connected devices** that measure mileage are influencing automotive UBI.
- Insurtech providers are reshaping the UBI landscape.
- Offering insurance as part of **leasing and mobility solutions** is affecting UBI dynamics.

Ownership Versus Usership

- **The increase of alternative mobility solutions, such as rentals and rideshares**, as well as reduced usage post-pandemic, has increased the demand for mileage-based automotive insurance.
- The **shift in vehicle usage patterns** because of the pandemic has led to a growing need for retail automotive insurance.

STRATEGIC OPPORTUNITIES IN AUTOMOTIVE INSURTECH, BY REGION

Key Opportunities

Europe

- **Tackle fraud and theft** (especially in South Italy and Eastern Europe) through telematics and AI
- **Collaborate with OEMs** to offer embedded insurance through connected car platforms

North America

- **Leverage EV/connected car growth** for real-time UBI
- Use **AI** for automated claims and fraud analytics
- Enter data-sharing partnerships with OEMs (Tesla, GM, Ford)

South America

- Use smartphone-based telematics for **urban theft protection** (e.g., Brazil, Mexico)
- Expand to **underserved populations** with app-based microinsurance

APAC (India, SEA)

- **Low-cost, flexible UBI** models for young drivers
- **Real-time claims** triage through WhatsApp or local apps
- Government partnerships for **road safety-linked insurance**

China

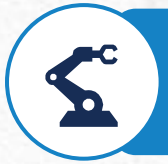
- AI and facial recognition for **fraud prevention**
- Connected mobility data from **smart city networks**
- Local OEM-insurtech integrations (e.g., NIO + Ping An)

STRATEGIC OPPORTUNITIES, BY CONSUMER SEGMENT

Segment	Opportunity
Urban Drivers	• On-demand insurance tied to mobility usage (e.g., per hour/mile) • Smartphone-based crash detection and claims reporting
Young/ New Drivers	• Gamified coaching with rewards-based UBI plans • Digital-first onboarding and flexible premiums
EV Owners	• Dynamic pricing based on charging behavior and battery health • Integration with EV navigation for charging and insurance bundles
Rideshare	• Real-time monitoring and commercial UBI • AI to optimize claims and improve driver safety scores

Source: Frost & Sullivan

STRATEGIC OPPORTUNITIES, BY COLLABORATION MODEL

Stakeholders	Actionable Opportunities
 **Insurers + OEMs**	• Co-develop embedded insurance offers at vehicle point-of-sale • Share telematics data securely for real-time pricing and claims
Insurtechs + Telcos	• Partner to enable connectivity-based services such as eCall, theft tracking, and claims automation
Insurers + Government	• Promote pay-as-you-drive for safer roads and fewer emissions • Fraud prevention through centralized driving and claims databases
Technology Providers + Regulators	• Co-create frameworks for ethical data use, transparency, and interoperability standards

GROWTH DRIVERS

Automotive Insurtech: Growth Drivers, Global, 2025–2031

Driver	1–2 Years	3–4 Years	5–7 Years
Rising Demand for Connected and Software-defined Vehicles Modern connected vehicles generate vast amounts of real-time data from telematics, ADAS, and infotainment systems. This data enables insurers to develop personalized, usage-aware, and behavior-based insurance products.	High	High	Medium
Acceleration of Digital Transformation in Insurance As consumers increasingly rely on digital platforms, insurers are embracing app-based models, embedded insurance APIs, and cloud-based policy management.	High	High	Medium
Evolving Mobility and Ownership Patterns Post-pandemic shifts toward shared mobility, subscription models, and reduced commuting have created a demand for flexible insurance plans.	High	Medium	Medium
New Monetization Models Using Vehicle and Driver Data Insurers increasingly leverage real-time vehicle data to offer bundled services, drive engagement, and enable contextual offerings. Data from OEMs, TSPs, and aftermarket devices is now being monetized for UBI and accident reconstruction, fraud detection, and predictive maintenance.	High	Medium	Medium
Collaborative Ecosystems with OEMs and Technology Providers The rise of API-driven partnerships between insurers, TSPs, OEMs, and mobility platforms is accelerating innovation, enabling faster product development, wider reach, and enhanced customer experience in connected mobility.	High	Medium	Medium

GROWTH RESTRAINTS

Automotive Insurtech: Growth Restraints, Global, 2025–2031

Restraint	1–2 Years	3–4 Years	5–7 Years
Data Privacy and Consent Challenges Many consumers are reluctant to opt for digital insurance programs due to fears around how their data is collected, stored, and shared.	High	High	Medium
Fragmented Global Regulatory Landscape The lack of harmonized data and insurance regulations across countries creates significant operational challenges for insurtech. Insurers must navigate complex frameworks, increasing compliance costs and making it difficult to scale standardized products globally. Regulatory sandbox programs help, but inconsistencies still slow innovation.	High	Medium	Medium
Low Consumer Awareness and Misconceptions Despite advancements in technology, many consumers remain unaware of insurtech offerings and their potential benefits. Misunderstandings about how data impacts pricing or fears of premium hikes based on driving behavior often deter adoption.	High	Medium	Low
Cost and Technology Barriers Deploying telematics or app-based systems can involve upfront investment in hardware, integration, and customer support. In price-sensitive markets, these costs pose a barrier for both insurers and users, especially when compared to familiar, fixed-rate traditional insurance models.	Medium	Medium	Low

REGULATORY SNAPSHOT

Category	Region/Country	Key Regulation/Program*	Focus Area
Insurance Framework	EU, US, UK	MID, IDD, State DoI Rules, FCA Telematics	Insurance eligibility, fair pricing
Data Privacy Laws	EU, US, China, Brazil	GDPR, CCPA, PIPL, LGPD	Consent, data use, cross-border rules
Innovation Sandboxes	India, UK, Brazil, Singapore, Australia	IRDAI, FCA, SUSEP, MAS, ASIC	UBI, embedded insurance, AI/ML pilots

Note*: Motor Insurance Database (MID); Insurance Distribution Directive (IDD); State Department of Insurance Rules (State DoI Rules); Financial Conduct Authority (FCA); General Data Protection Regulation (GDPR); California Consumer Privacy Act (CCPA); Personal Information Protection Law (PIPL); Lei Geral de Proteção de Dados (LGPD); Insurance Regulatory and Development Authority of India (IRDAI); Superintendência de Seguros Privados (SUSEP); Monetary Authority of Singapore (MAS); Australian Securities and Investments Commission (ASIC).

VARIOUS USE CASES AND THE TECHNOLOGY BEHIND THEM

Technology	Function in Vehicle Insurance
Telematics Devices (OBD/Embedded)	Real-time driving behavior, crash detection, vehicle tracking
AI-based Scoring Models	Dynamic risk profiling, segment-based pricing
Computer Vision	Damage detection from photos or videos
Geolocation Services	Theft recovery, usage verification
Data Fusion	Claim validation through multiple data streams (e.g., weather, location, history)

Source: Frost & Sullivan

KEY INSURTECH START-UPS: SNAPSHOT

Attribute	Lemonade	Root	Clearcover	Cuvva	By Miles	Democrance
Auto Insurance Launch	2021 (Lemonade Car)	2017	2016	2017	2018	2018
Primary Auto Product	Usage-based auto with claims automation	App-based UBI	API (Application Programming Interface)-based digital auto insurance	On-demand hourly cover	PAYD with OBD-II	Embedded micro-UBI
Digital Insurance Model	App-driven, AI (Artificial Intelligence) first	Mobile-based UBI	API-integrated platform	Mobile-first	Web/app with device	API-first SaaS
Key Features	Instant policy, AI claims, driving score	Driver scoring, smart pricing	13-min. claim average, fast setup	Instant start/stop coverage	Cost-per-mile breakdown	Multi-channel UBI rollout
Technology Stack	AI bot (Maya), telematics, ML	Smartphone sensors, ML	AI engine, API-driven infrastructure	Mobile app + backend analytics	OBD-II devices, mobile dashboards	Cloud-native SaaS, APIs
Data Collection	Embedded telematics + phone	App-based sensors	APIs + mobile data	Phone GPS + accelerometer	OBD-II and trip data	API, embedded partner data
GTM Strategy	Direct-to-consumer + acquired base	Direct + embedded channels	Agency + embedded + digital D2C	B2C in UK urban hubs	Through brokers and aggregators	Partner-led insurer deployments

Source: Frost & Sullivan

PORTFOLIO AND TECHNOLOGY SNAPSHOT: INSURERS

	OBD	Smartphone	Telematics (standalone or OE-fitted)
All State	✓	✓	✓
Progressive	✓	✓	✓
State Farm	✓	✓	✓
Liberty Mutual	✓	✓	✓
Allianz SE	✓	✓	✓
AXA	✓	✓	✓
Generali Group	✓	✓	✓
Unipoltech	✓	✓	✓
MS & AD	✗	✓	✓
MAPFRE	✗	✓	✓

✗ Not available ✓ Current UBI technology ✓ Future UBI technology

Note: Not an exhaustive list of competitors

Source: Frost & Sullivan

KEY FINDINGS

Rapid Growth & Investment	Insurtech funding has increased significantly (more than 200%) in the last 5 years, driving digital innovation and creating more specialized companies that provide comprehensive solutions for the connected car ecosystem.
Telematics & Usage-based Pricing	Globally, more than 40 million vehicles on the road already include usage-based features, with telematics saving safe drivers 10%–25%, and this is expected to reach more than 200 million vehicles with UBI by 2030.
AI, ML, & Predictive Analytics	Advanced analytics are expected to cut fraud by up to 30%, improving underwriting and driving real-time, dynamic pricing to reduce loss ratios by 3%–10%.
Faster, Transparent Claims	FNOL automation, real-time data, and blockchain are set to cut claim cycle times by 10%–40% while paving the way for instant smart contract settlements.
Strong Ecosystem Partnerships	Most of the major insurers now bundle insurance with mobility, payment, and smart vehicle platforms, increasingly merging into broader mobility-as-a-service offerings.
Enhanced Vehicle Security	Connected recovery solutions are expected to increase stolen vehicle recovery rates up to 60% for connected vehicles compared to non-connected ones and will integrate with smart city systems for predictive theft prevention.

LINK TO THE STUDY

Strategic Shift from Traditional Insurance to Digital Insurance— The Rise of Insurtech

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Appendix

How does your organization identify and prioritize Growth Opportunities?

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