



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.



Questions This Study Will Answer

- 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



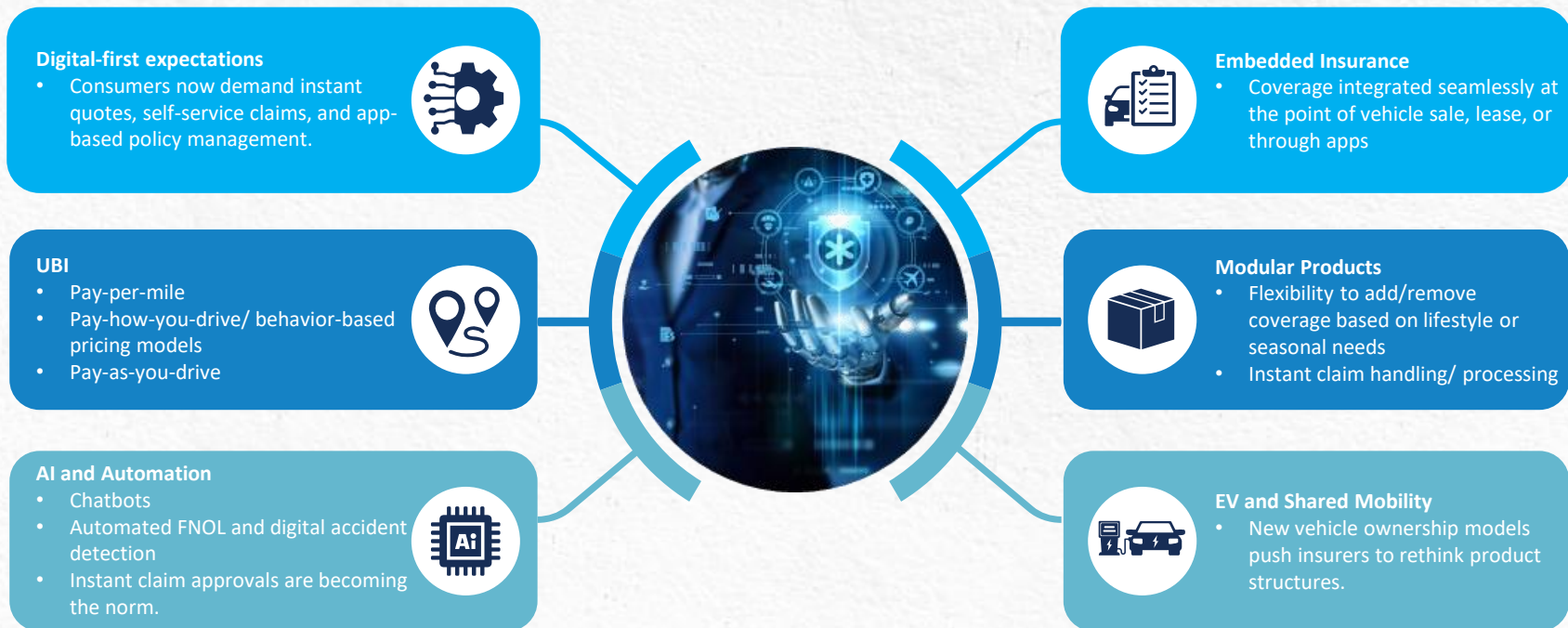
Real-time Feedback
for safer driving and
lower premiums



Digital-first Onboarding and
instant claims
through apps

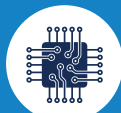
RISE OF DIGITAL NATIVES AND NEW BUSINESS MODELS

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



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



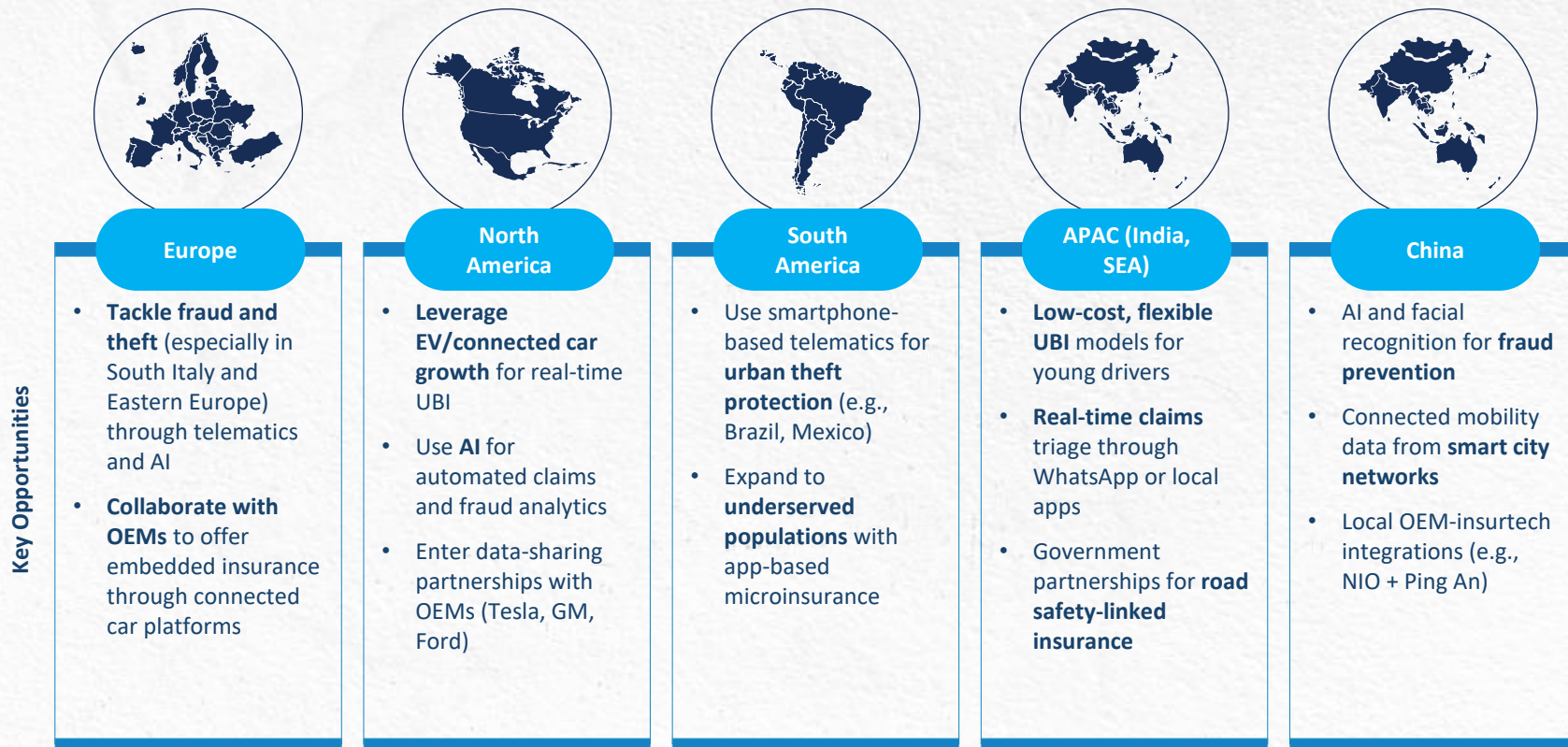
- **Shared mobility solutions and connected devices** that measure mileage are influencing automotive UBI.
- Insurtech providers are reshaping the UBI landscape.
- Offering insurance as part of **leasing and mobility solutions** is affecting UBI dynamics.

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.

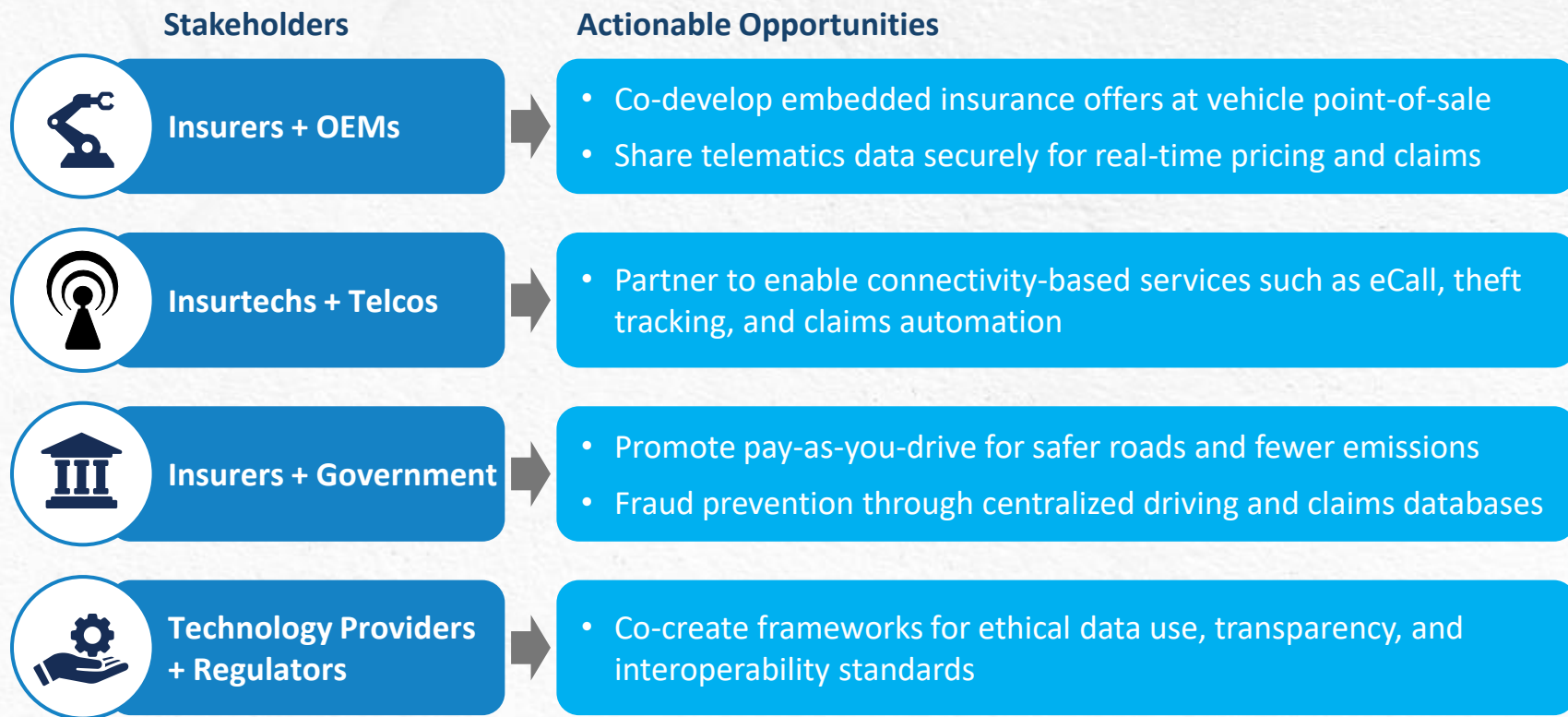
STRATEGIC OPPORTUNITIES IN AUTOMOTIVE INSURTECH, BY REGION



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

STRATEGIC OPPORTUNITIES, BY COLLABORATION MODEL



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)

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

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	✗	✓	✓

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

Subscriber:

[Link to Download](#)

Non-Subscriber
(Store): **PG1P**

[Link to Purchase](#)



Global Automotive & Transportation Research Team at Frost & Sullivan

Appendix

How does your organization
identify and prioritize
Growth Opportunities?



CONTENTS

Section	Slide Number
<u>Research Scope</u>	8
• <u>Scope of Analysis</u>	9
• <u>Market Definition</u>	10
• <u>Distribution Channels</u>	11
<u>Growth Environment: Automotive Insurtech Market</u>	12
• <u>Key Findings</u>	13
• <u>Key Value Outcomes of Auto Insurtech</u>	14
• <u>Various Use Cases and the Technology Behind Them</u>	15
• <u>Key Insurtech Start-ups: Snapshot</u>	16
• <u>Portfolio and Technology Snapshot: Insurers</u>	17
• <u>Portfolio Snapshot: TTPs/TSPs</u>	18
• <u>Regulatory Snapshot</u>	19
<u>Growth Environment: Transformation in the Automotive Insurtech Market</u>	20
• <u>Why Is It Increasingly Difficult to Grow?</u>	21
• <u>The Strategic Imperative 8™</u>	22

CONTENTS (CONTINUED)

Section	Slide Number
• <u>The Impact of the Top 3 Strategic Imperatives on the Automotive Insurtech Space</u>	23
<u>Ecosystem in the Automotive Insurtech Market</u>	24
• <u>Competitive Environment</u>	25
• <u>Key Competitors</u>	26
• <u>Growth Drivers</u>	27
• <u>Growth Restraints</u>	28
<u>Growth Generator in Insurtech: Industry Evolution</u>	29
• <u>Historical Overview: Traditional Automotive Insurance Model</u>	30
• <u>The Transition: From Risk Pooling to Personalized, Data-Driven Models</u>	31
• <u>Rise of Digital Natives and New Business Models</u>	32
• <u>Major Trends Impacting the Automotive Insurtech Space</u>	33
<u>Growth Generator in Insurtech: Business Model Disruption and Strategic Frameworks</u>	34
• <u>Automotive UBI Business Models</u>	35
• <u>Shift From Policy Issuance to Proactive Risk Management</u>	36
• <u>FNOL and ADR and Impact of Telematics</u>	37

CONTENTS (CONTINUED)

Section	Slide Number
• <u>Software's Role in FNOL and ADR</u>	38
• <u>Extended Functionalities: Accident Reconstruction and Fraud Detection</u>	39
<u>Growth Generator in Insurtech: Technology Enablers and Innovations</u>	40
• <u>UBI Services: Leveraging IoT and New Technologies</u>	41
• <u>Role of AI/ML in Pricing, Claims, and Fraud Detection</u>	42
• <u>Connectivity Enabler for Insurtech and New Use Cases</u>	43
• <u>Connectivity Improving Automotive Insurance Underwriting</u>	44
• <u>Insurtech Use Cases in Various Regions</u>	45
• <u>Blockchain for Claims Processing and Smart Contracts</u>	47
<u>Growth Generator in Insurtech: Regulatory Landscape and Compliance</u>	48
• <u>Established Auto-Insurance Regulations</u>	49
• <u>Data Privacy Laws for Auto Insurance</u>	50
• <u>Innovative Sandboxes Program for Auto Insurtech</u>	51
<u>Growth Generator in Insurtech: Value Outcomes and Strategic Opportunities in Insurtech Functionalities</u>	52
• <u>Value Outcomes of Automotive Insurtech</u>	53

CONTENTS (CONTINUED)

Section	Slide Number
• <u>Strategic Opportunities in Automotive Insurtech, by Region</u>	55
• <u>Strategic Opportunities, by Consumer Segment</u>	56
• <u>Strategic Opportunities, by Collaboration Model</u>	57
<u>Competitive Landscape and Company Profiling: Insurtech Start-Ups</u>	58
• <u>Lemonade (Lemonade acquired Metromile in 2022)</u>	59
• <u>Root</u>	60
• <u>Zego</u>	61
• <u>Cuvva</u>	62
• <u>Clearcover</u>	63
• <u>By Miles</u>	64
• <u>Democrance</u>	65
<u>Competitive Landscape and Company Profiling: Traditional Insurers</u>	66
• <u>Allstate</u>	67
• <u>Progressive</u>	68
• <u>State Farm</u>	69

CONTENTS (CONTINUED)

Section	Slide Number
• <u>Liberty Mutual</u>	70
• <u>Allianz SE</u>	71
• <u>AXA</u>	72
• <u>Assicurazioni Generali S.p.A (Generali Group)</u>	73
• <u>Unipoltech Solution Technology (Unipol Sai)</u>	74
• <u>Aioi Nissay Dowa Insurance (MS & AD Insurance Group Holdings, Inc.)</u>	75
• <u>MAPFRE</u>	76
<u>Competitive Landscape and Company Profiling: Technology Services Provider Profiles</u>	77
• <u>Octo Telematics</u>	78
• <u>Targa Telematics</u>	79
• <u>Cambridge Mobile Telematics (CMT)</u>	80
• <u>IMS</u>	81
• <u>TomTom (Acquired by Bridgestone in 2019)</u>	82
• <u>CCC Intelligent Solutions (CCC)</u>	83
• <u>LexisNexis Risk Solutions</u>	84

CONTENTS (CONTINUED)

Section	Slide Number
• Verisk Analytics	85
• Zendrive	86
Growth Opportunity Universe	87
• Growth Opportunity 1: Expand Usage-Based Insurance (UBI) Offerings	88
• Growth Opportunity 2: Expand Driver Engagement and Risk Coaching	90
• Growth Opportunity 3: Build Partnerships for Regional Customization	92
• Growth Opportunity 4: Advanced Claims Management and Fraud Prevention	94
Appendix & Next Steps	96
• Benefits and Impacts of Growth Opportunities	97
• Next Steps	98
• List of Exhibits	99
• Legal Disclaimer	100

CONTACT US

Sathya Kabirdas

Associate Partner - Research

Mobility - Automotive &
Transportation

Email : Sathyanarayanak@frost.com

Podcast



Videos



Twitter



Events

