

# Telematics in Insurance Industry

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**Abstract** - Telematics is a data-focused technology that can be used to collect, transmit, and smart usage of data. It is being used to generate a wide array of solutions. Recently, telematics has notably disrupted the insurance industry. It has enabled insurers to get accurate data in real-time and get proactively involved in the prevention of damage and loss. Using telematics, insurance companies have been able to provide more accurate and personalized premiums. The technology has led to increased margins for insurance companies with fewer payouts and customer retention.

Telematics has gained the limelight via its use in the auto insurance sector. It has fundamentally transformed motor insurance by improving risk selection and pricing, reduced claims, and better fraud detection. With its focus on behavioral data, telematics has also furthered the causes of prevention and safety. Insurance premiums based on monitored driver behavior encourage drivers to engage in safe driving.

Its success in auto insurance has proved that telematics can drive massive change in insurance markets across several industries. Industry experts have been exploring the use and benefits of telematics-based solutions in healthcare and property insurance. This has been made possible due to the expansion of IoT devices such as wearables and smart home features.

All in all, the insurance industry is looking at a data-driven future. Those insurance companies neglecting the use of telematics are bound to lose in the face of competition.

**Key Words:** Telematics, Insurance Industry, IoT, Auto & Home Insurance.

## 1. INTRODUCTION

In recent years, IoT has been a technological innovation that has revolutionized businesses and industries. It holds incredible potential to transform the way industries gather and interpret data. Apart from IoT, telematics has also played an integral role in digital transformation.

The integration of IoT with telematics is changing the face of fleet management and the transportation industry as a whole. The combination of the two technologies shows potential for immense further developments in various industries. They are enabling the development of new digital supply chains and interconnection and coordination between sectors, thereby offering the potential for increased efficiency.

Telematics has been making headway into the insurance industry, especially the automotive market. The technology has been using data to maximize efficiencies and is expected to expand into all parts of the insurance industry.

## 2. WHAT IS TELEMATICS?

The word “telematics” is a portmanteau of telecommunications and informatics. It merges the technologies of remote communication and information processing to transmit information over long distances. It can be used for various commercial and non-commercial purposes, but it's most commonly used for fleet management and asset tracking in the automobile sector.

Basically, telematics is a machine-to-machine communication, tracking, monitoring, and remote management system for vehicles and various mobile assets. A telematics system or software receives and displays data from a telematics car tracker or mobile devices on the user interface. The software collects data and sends commands to the vehicle and assets. It also browses through real-time or past trips, generates alerts, and provides in-depth analytics.

Telematics technology began developing mid-1990s onwards due to the rapid expansion of the internet, and it continues to grow apace. It has already been adopted by various industries and has become crucial in the Internet of Things that Move (IoTtM). Telematics is forecasted to become a \$231 billion industry by 2025 due to the increased use of IoT driving consumer demand for telematics.

## 3. USE CASES OF TELEMATICS IN THE INSURANCE INDUSTRY

Insurers have been looking to leverage telematics technology for over a decade now. Whether it's tracking mileage, offering consumer discounts, or providing ancillary benefits, telematics is being used by insurers. It has grown from a niche feature to a widely available insurance option.

### 3.1 Usage-Based Insurance (UBI)

It is a type of auto insurance that tracks mileage and driving behaviours. UBI is powered by telematics technology installed in a vehicle either using a plug-in device or installed by car manufacturers in the original equipment. It's also available in the form of mobile applications. The purpose of UBI is to monitor driver's behaviour in real-time, allowing the insurers to closely align driving behaviour within premium rates.

Telematics has eliminated insurers' reliance on covert rating tools such as gender, age, marital status, education, or credit score. These devices measure various elements that interest underwriters, including miles, driven, time, GPS, rapid acceleration, hard braking, hard cornering, and airbag

deployment. This helps the insurance companies to assess the data and charge insurance premiums accordingly.

Telematics technology has come a long way in the automotive insurance industry- from Progressive Insurance Company and General Motors Assurance Company's (GMAC) mileage-linked discounts to being able to assess how and when people drive. The UBI has grown tremendously, including variations like Pay-As-You-Drive (PAYD), Pay-As-You-Go, Pay-How-You-Drive (PHYD), and Distance-Based Insurance.

### 3.2 Telematics and Home Insurance

Today, home property insurance typically covers damages caused by natural disasters, robbery, theft, and vandalism. Additional coverage includes fires, flooding/leakage damage, and damage from wantonly negligent behaviour.

However, these insurance packages are not personalized for the customers. The underwriting is still based on the same old risk assessment data, which includes area code, size of the apartment, and living situation. Behavioural aspects are not taken into account.

With the rapid growth and adoption of vehicle telematics, experts are exploring the potential of telematics in home insurance. Smart home ecosystems are driving customers to demand more digital, simplified, and personalized insurance options. The global smart home market has been estimated at \$20 billion and is continuously growing.

A person's activities revolve around his/her home. The home has many touchpoints with personal life aspects from health, property, mobility to financial and personal security. Additionally, the Internet of Things revolution has made the home a control center for a person's daily activities.

Personalized home insurance requires insurers to increase touchpoints and provide the customers with personalized and meaningful engagement in each touchpoint. Property and casualty insurers are using telematics and smart home devices to effectively manage risk scenarios and improve customer engagement frequency and depth. According to the World Insurance Report (2018), globally, P&C insurers are piloting (73.3%) or deploying (50%) telematics and smart home ecosystem devices.

Telematics and smart home devices can give insurers first notice of loss (FNOL) warnings. It can also give insights into the cause and severity of the loss, which can save the customer connection and claim assessment time. Connected devices can also help with accurate underwriting and better risk pricing. Insurers can also provide suggestions on risk control and risk prevention. All in all, telematics helps insurers become risk management partners.

### 3.3 Telematics and Health Insurance

If you've purchased life insurance, you're probably familiar with the questionnaires and physical tests required to enable personalized premiums. Traditionally, health care insurance programs have been one-size-fits-all, where premiums are based on simplistic categorizations. They do not account for the vast variance within a band of citizens. As

a result, people don't heavily use their insurance to pay for those who do.

Telematics-based healthcare insurance aims to proactively determine who are the biggest consumers of expensive health services. The data for this comes from wearables such as FitBits, Apple's iWatch, Jawbone, etc. These devices collect detailed information about people's activity levels and heart rate. Smartphone-compatible devices can provide more granular personal data. Additionally, the insurance industry continues to rely on fundamental data through vital signs at doctor visits for a complete picture.

Insurance firms have started to explore the role of telematics in health insurance. The German government has recently taken the initiative to trial secure telematics infrastructure through Germetik, an electric health insurance card company set up by the German healthcare industry. The program is enrolling about 500 caregivers in Bavaria and Saxony to exchange telematics healthcare data. If this rehearsal is successful, it will provide a blueprint necessary to launch the program across Germany.

From an insurer's perspective, the benefits of telematics in healthcare insurance are similar to those in auto insurance. The benefits include accurate risk pricing, a reduction in payouts due to insured parties playing a more proactive role in their health, and a more interactive customer relationship allowing cross-selling of additional products.

## 4. WHAT PROBLEMS DO TELEMATICS SOLVE IN INSURANCE INDUSTRY?

### 4.1 Improved Risk Assessment and Mitigation

Vehicle telematics assesses automobile safety by monitoring driver behavior, giving insurers the information for better risk assessments, and establishing premiums. Telematics data can accurately predict risk profiles and appropriately price policies.

Moreover, insurers do not have to rely on vague demographics such as age, occupation, and location. The behavioral data reported by telematics devices also encourages the drivers to improve driving habits.

Due to crash detection and instant first notice of loss features, telematics can streamline claims investigations, reduce ancillary costs, and combat fraudulent claims. According to the Mordor Intelligence 2019-2024 Insurance Telematics Market report, telematics technology allows insurers to reduce claims-handling costs by approximately 55%.

### 4.2 Improved Customer Engagement

Modern insurance customers are taking control of their insurance buying experience and how much they pay for coverage. According to JD Power, 74% of customers use websites or insurance aggregators to research and get quotes from insurance companies.

Telematics technology is allowing insurers to understand customer needs and deliver personalized solutions. By giving the customers more control over their insurance rates,

coverages, and claims information, insurers stand to increase brand loyalty and improve customer experience.

### 4.3 Advanced Connectivity

With the development and expansion of connected technology like IoT, telematics is being increasingly adopted by the insurance industry. Almost everyone around the world now owns smartphones. This proliferation of smartphones has made the collection of telematics data convenient.

According to Property Casualty 360, professionally installed telematics devices are no longer the only option for collecting high-quality, actuarial-grade telematics data. Smartphones have made the ability to analyze and compare data of hundreds and thousands of users possible. This has also improved underwriting accuracy and efficiency.

## 5. WHY IS THE INSURANCE INDUSTRY A LATE ADOPTER OF TELEMATICS?

Telematics in the insurance industry has been in development for the past 20 years. Back in the mid to late 1990s, telematics initiatives began to surface. In the early 2000s, plug-in devices for vehicles were seen, and the first mass-market launch of telematics devices occurred in 2007.

By 2011, most of the top 10 insurance firms leveraged vehicle telematics to some degree. The telematics industry exploded around 2013-14 with the diversification of technological processes.

The obstacles that delayed the adoption of telematics in the insurance industry included:

- **Consumer resistance:** People were reluctant to install devices provided by insurance companies in their vehicles. This is because some technologies were reported to interfere with the vehicle's computer. Consumers were concerned about "frying" their automotive systems.
- **Lack of streamlined, high-quality data:** Insurance carriers had to deal with pretenders and players without experience collecting and delivering data.
- **Data transfer challenges:** There were widespread issues with software glitches and data conversion. For instance, a miles-to-kilometers conversion issue caused mileage to dramatically increase within a month.
- **Installing OBD II dongles:** Installing these dongles in personal vehicles has always been difficult for insurers. The friction caused by engaging in this extra effort to install a foreign device within the vehicle posed a challenge.

Overcoming these challenges led to the delayed adoption of telematics as a useful tool in the insurance industry. Fortunately, the acceleration of smartphones allowed the successful adoption of telematics. All that the insurance companies required was an app and a method to encourage and educate the consumers about opting for their telematics program.

Telematics data collection through smartphone apps significantly enhanced the process. The request to track the customers via these apps also sat well with the consumers since they were already giving up their locations to access other smartphone features and apps.

## 6. CHALLENGES FOR INSURERS USING TELEMATICS AND HOW TO ADDRESS THEM

A survey conducted by Deloitte details the challenges being faced by insurers trying to implement telematics and how to overcome them.

### 6.1 Navigating the obstacle course

Recent data reveals that half of the policyholders are not ready for UBI. This creates a challenge for insurers to convince customers before they integrate UBI into their product line. One way of convincing and attracting drivers to the benefits of telematics monitoring is to lure them with a lower premium charge.

In this initial stage, both the insurer and customer are benefited. The customer is incentivized by the discount while the insurer is able to gather valuable information. Once the insurers are able to collect actuarial-grade and statistically credible telematics data, they can translate price cuts into earned discounts based on driving behavior.

Insurers might have to sacrifice some margin initially, but once the driver develops a relationship with the insurer and benefits from the monitored driving behavior, the retention would increase, and the margin would improve. According to Deloitte, insurance carriers will have to offer more value-added telematics services to boost retention. They will have to differentiate themselves from their competitors.

### 6.2 Moving beyond price focus

Offering discounted premiums might help insurers implement telematics in the initial phase, but the development of a UBI program requires a mutually beneficial customer experience. According to Deloitte, this level of customer engagement can be created by establishing brand stickiness. Insurers will have to offer value to policyholders beyond the price charged for coverage and claims services.

The suggestions for value-added features that UBI carriers can provide include:

- Provide immediate feedback and safety tips to customers
- Alert drivers about potentially hazardous road conditions and traffic slowdowns
- Facilitate roadside assistance and claims notification if an accident occurs
- Locate lost or stolen vehicles
- Monitor how pro-environmental the driver is by measuring the impact of their driving behavior on carbon footprint

- Allow parents to monitor teenage driver's driving behavior and location through geo-fencing.

### 6.3 Making insurance "fun" with telematics

Rewards are always fun and reinforcing. Insurers can leverage telematics to reward good or improved driving behavior relative to the driver's own performance or the performance of a broader pool of policyholders. This will help foster customer loyalty, gratification, and competition, making the experience more fun and interactive for the customers.

This will also provide incentives for driving behavior that prevents losses. Insurance will become proactive and prevention-driven. It will not only create value for insurers and customers but also promote safe driving practices.

### 6.4 Overcoming privacy concerns

One of the biggest reasons for resistance towards telematics insurance despite its many benefits is a privacy concern. Customers are reluctant to share so much personal driving data with insurers; they are not comfortable with the notion of a virtual backseat driver who is monitoring their every move. Hackers are another big cause of concern.

These concerns can be overcome by pointing out that other technologies are already monitoring them, for better or worse. Technologies with enhanced surveillance and geo-locational capabilities are already integrated into their vehicles.

For the widespread adoption of UBI programs, insurers will need to engage in proactive communication and education with the consumer. They will have to emphasize the potential advantages offered by telematics that outweigh the privacy considerations. Once the consumer is aware of the benefits and stands to gain some value proposition, he/she will be more likely to share personal driving data.

## 7. HOW DOES THE FUTURE LOOK FOR INSURANCE INDUSTRY USING TELEMATICS?

Despite the rapid growth of usage-based insurance, the market is still immature for telematics insurance. UBI has significantly disrupted the auto insurance market, and it continues to evolve as insurers gather more data and gain more actionable insights.

However, insurers are still grappling with the technological, regulatory, and strategic challenges. They are still understanding driver psychology, consumer perceptions, and how to effectively use telematics technology.

UBI is expected to continue to evolve for the next decade and beyond as insurers gain additional experience with the technology and standardize data collection and analysis. They will also try to differentiate their services by introducing a wide range of value-added, telematics-based benefits. The goal will be for behavioral monitoring to become the rule rather than the exception.

Telematics-based insurance is also expected to go beyond just auto insurance. IoT, mobile and, sensory technologies

that monitor a variety of behavior and collect personal data can eventually transform life and property coverages. This will be beneficial for customers looking for discounted premiums beyond automotive insurance.

## 8. CONCLUSIONS

As is evident from this article, telematics has been a catalyst for a transformation in the auto insurance industry. However, it also has the potential for massive change across several parts of the insurance industry.

Insurance is often negatively viewed by consumers, but telematics serves to not only personalize and enable accurate risk prediction but also improves interaction and dialogue with customers. This new customer-insurer relationship can be a foundation for reduced payouts and brand stickiness.

Insurers who have been neglecting telematics are risking a lot. It is neither a fad nor a simple improvement in the insurer's underwriting and pricing capabilities. Telematics is a disruptive and transformational technology that has the potential to change the insurance industry forever.

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## BIOGRAPHY



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