**INSURANCE REGULATORY AND DEVELOPMENT AUTHORITY OF INDIA**

# DISCUSSION PAPER

## Telematics and Motor Insurance

### I. Introduction:

The world of technology is dynamic. Technology constantly makes waves in every field and the insurance industry too has benefitted immensely from the advantages technology offers. In this paper, we restrict ourselves to the concept of 'Telematics' and the role it can play in Motor Insurance. The purpose of this paper is to understand what Telematics is all about and discuss the advantages and challenges of adopting Telematics in Motor insurance. The idea is to discuss and mull over questions relating to various aspects including customer information/data privacy, whether there is a necessity to revisit the framework around the product structure of motor insurance, the role Telematics can play in the pricing of motor insurance products etc.

At present, Motor Insurance in India is being priced based on parameters like the Make and Model of the Vehicle, its capacity, the geographical use etc. There can be several other aspects to the use of a vehicle. For instance, customers who use their vehicles for lesser duration or lesser distances are prone to lesser risks and those who use their vehicles for longer durations and more distances are prone to more risks but both sets of customers today pay the same premium for a particular vehicle. In actuality, there are various parameters to be considered in the assessment of risks that a vehicle is exposed to such as upkeep of the vehicle, how frequently it is driven, what distance it is driven for, the quality of roads it is driven on, the driving habits of the driver and so on. Consideration of these factors will lead to a more meaningful risk assessment and provide for a more accurate mechanism for pricing.

There are a variety of driving habits of customers and usage of vehicles also varies widely because of many factors like new forms of transport, demographic shifts, whether one is driving one's own car or somebody else's etc. Also, due to increasing use of other modes of transport like Suburban trains, Metros, employer provided transport, private rented cars/taxis etc, some people may not be using their own vehicles frequently. Where usage is less, the vehicles would be prone to lesser risks.

On the contrary, public transport, rental vehicles etc are prone to more risks as they are on the roads for a longer duration. Today, premiums are being charged based on available information related to limited parameters only. If accurate information and more relevant data are available, premium can be worked out more scientifically, commensurate with the risks involved.

2. **Telematics as a solution:**

'Telematics' can offer a solution to the above aspects. It can enable insurance companies to use technology not only to assess risks better and also offer more efficient claims services. There are technologies, enabled through internet connectivity, that offer solutions ranging from embedded vehicle telematics systems to smart phone applications that can challenge traditional business models and create new opportunities setting one rethinking on how insurance companies can carry on business. It has been seen that these new technologies can provide a wealth of opportunities for insurers to offer new, value-added services to policyholders.

3. **What is Telematics and what is Telematics Insurance?**

'Telematics' is a word coined from the combination of the words 'telecommunications' and 'informatics'. Usage of Telematics in insurance is known as 'Telematics Insurance'. Telematics Insurance is known by several other names—Black Box Insurance, GPS Car Insurance, Smart Box Insurance, Pay-as-you-Drive-Insurance, Usage Based Insurance (UBI) and so on. As can be seen, generally when it comes to insurance, Telematics has application in the Motor segment. It refers to the integrated use of telecommunications and information technology for vehicles. It is widely used for providing services such as real-time navigation, roadside assistance, vehicle tracking etc. Insurance telematics refers to use of telematics by motor insurers with an objective of having better segmentation of customers and having a pricing methodology that reflects the actual risk a customer exposes his or her vehicle to.

4. **How Telematics Insurance works?**

Telematics Insurance works by fitting a vehicle with a small device—commonly known as a 'black box' that records speed patterns and distance travelled as well as data about the type of road/s the driver is driving on and when (whether night or day or during the weekend etc.) and how long he has been driving. The technology can also monitor braking and cornering to build up a picture of the driver's driving style. Generally, Telematics devices operate with accurate and reliable GPS technology and can capture data like – maximum/average speed travelled, acceleration, braking, cornering, latitude/longitude, elevation, distance travelled, number of journeys, journey time, road type, G-force (impact detection), idle time, number of other cars on the road, weather circumstances etc. Data can also be collected through use of smart phone and on-board diagnostic port.

5. **Brief history and global trends of Telematics Insurance**:

In UK and USA, implementation of Telematics commercially began back in the early 2000s. However, the introduction of smart phone technology combined with an easier and cheaper installation process has enabled as re-launch of Telematics Insurance in 2010 keeping in mind a particular target segment—the young drivers. At present, even in these countries, Telematics Insurance is a niche market with a few specialised insurers and a few traditional insurance companies too plunging into it.

In Italy, insurers initially used the technology for tracking stolen vehicles but now are increasingly using it to monitor and provide feedback on driver behaviour. It is understood that Italy is a large market for Telematics in Europe. South Africa too has Telematics Insurance.

6. **Role of Telematics in risk profiling and pricing**:

The Black Box records and transmits a broad set of information to the insurance company. Insurers use this data to calculate the cost of insurance and adjust premium accordingly, with each aspect having an effect on the price that a customer should pay. As discussed above, this data includes distance travelled, speed of the drive, braking and accelerating habits, the date and time when the vehicle was driven, the number of stops during a long journey, the number of miles driven per journey, the mix of journeys (in town, out of town, motorway etc.) as well as the number of journeys

etc. How the insurer prices is that normally, an up-front fee is charged, which includes the cost of the device and its installation, and then quote an annual premium which can decrease or increase, depending upon driving performance and other factors given above. In addition, the monitoring system is constantly in place during the policy-term. The policy term, driver skills and other factors are monitored constantly and the premium is readjusted/recalculated periodically.

7**. Advantages of Telematics:**

(a). **To Customers:**

1. A careful driver who doesn't cover many miles and drives predominantly during off-peak hours could see a reduction in the premium.

2. A customer will find the premium to be directly proportional to the performance and usage of his/her vehicles/s bringing in transparency and fairness.

3. If one has a black box, it can act as a tracking device—if the vehicle is lost or stolen, it can be found sooner (by the police). The black box system, called e-call, helps emergency services locate vehicles in the event of a crash or other emergency repairs.

4. Telematics also facilitates fleets to determine the most efficient routes, saving them costs related to personnel, fuel and maintenance.

5. In a driver driven car, the concerns of the owner of the car, like how the car is being driven, where the car is being taken, whether the driver is picking up the family members (especially children or the girl child), whether the driver is following the usual route or going out of the area/boundary—all these concerns will be addressed by Telematics by forming of a geo fencing. The location of the vehicle is continuously tracked. If the driver travels beyond a defined boundary, the vehicle displays an alert on the car's dashboard screen and the designated contact receives an alert on a mobile device through a smart phone app.

6. Due to connectivity and increased monitoring of the vehicle, there will be increase in the security and longevity of the vehicle. Other services like speed alerts, engine and battery health alert, breakdown call, crash alert, emergency calls, other service alerts and notifications etc. can also be availed.

7. The insurer can use cloud capabilities to notify drivers of available garages, based on the driver's destination. It can warn policyholders when they enter into areas where auto thefts are more common or accident occurrences are high.

(b). **To Insurers:**

1. It will help insurers in better segmentation of customers by assessing the risk accurately.

2. Telematics helps insurers estimate more accurately, accident damages and reduce fraud by enabling analysis of driving data ( such as hard braking, speed and time) during an accident.

3. The data received and compiled can provide insurers with Next Gen analytical insights through predictive analysis.

4. It can help improve profitability of insurer because of better risk segmentation and deliver higher levels of customer insight improving relationship managemenr and increasing retention rates.

5. During accidents, Telematics can automatically send data to an insurance company immediately after the incident, providing the first notice of loss. By rapidly analyzing data from sensors on brakes, air bags, seat belts and other systems, the insurer can estimate the severity of the accident. The insurer can then initiate a series of appropriate actions, such as calling emergency personnel, contacting an automobile club or towing service, reserving and delivering a rental car to the scene or sending a replacement fleet vehicle in the case of a commercial operation, if the product permits it.

6. The collected data can also help the claims handling process and help reduce loss adjustment expenses.

(c). **To Society:**

1. Telematics makes drivers more aware of driving techniques and ultimately contributes to providing better drivers.

2. Thus it encourages safer and more considerate driving which will ultimately lead to safer roads for all citizens and reduce traffic congestion and pollution.

7. **Challenges posed by Telematics:**

The use of Telematics has its own challenges as well:

1. The device would need to be fitted in the vehicle by a professional installer.
2. A driver who is good may still have to pay more premium if he clocks up many miles of driving.
3. When an insured switch from one company to another, there could be issues relating to portability of data—the newer company may refuse to take cognizance of previous data.
4. There could also be issues surrounding privacy of data and what data can be shared and what cannot.
5. Implementing Telematics would involve cost. The cost would need to be integrated into the pricing structure.

8**. Alternatives to Telematics:**

There are alternatives to Telematics also coming up. Smart phones with certain mobile apps can actually replace a Telematics device. There is another alternative in the form of a 'Dongle' on the On Board Diagnostic (OBD) or car socket, which is an intermediate solution—between the Black Box and a mobile app. There is a sensor which connects automatically with the smart phone with the App installed via Bluetooth, eliminating both the black box cost and the need for a separate SIM card. OBD devices are easy for the customer to fit and they can synchronize well with the mobile app and the central servicer—here the car owner can see the vehicle and driving diagnostics data on his/her mobile screen.

9**. Questions/Points to mull:**

(i). Cost involved in implementing Telematics and its impact on the pricing of the product—need to revisit the pricing methodology.

(ii). Collection and collation of data at individual (insured) level and matters relating to privacy, transfer of data, portability matters involving carry forward of credit for good driving habits etc.

(iii). Need to revisit product structures currently existing, including the duration of products etc.

(iv). Current regulatory framework around products and protection of policyholders interests and the need to revisit them.

(V). Use of alternative devices (to Telematics)

**NON-LIFE DEPARTMENT**
**INSURANCE REGULATORY AND DEVELOPMENT AUTHORITY OF INDIA**

***References:***


1. *Write-up on the subject by CP Consulting*
2. *National Association of Insurance Commissioners (NAIC) website*
3. *Paper on the subject by DHFL General Insurance Ltd*
4. *IBM—White paper on Telematics for Insurance*
5. *PPT on Automotive Telematics and Multimedia in the US by Global Policy Group*
6. *Website of WIPRO*
7. *Website of Geo-Spatial World Forum*