

Tele- Vehicle Insurance

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Abstract: Telematics is a branch of Information technology that deals with long distance transmission of data. The word telematics technically refers to any system by which a mechanical or electronic device communicates with other devices or with human users over a network. In case of vehicle telematics information about the vehicle such as its location, fuel level , speed , driving scenario etc will be transmitted over a distance. Here a major area of research is discussed where vehicle insurance is integrated with telematics. Vehicle insurance will be based on the way the driver drives. Driving behavior is monitored and communicated to the insurance provider. Based on this data insurance premium will be tabulated. Tele-vehicle insurance invokes safe driving habits, which in return reduces the number of accidents, reduces insurance premium etc. Insurance industry will soon be able to reap the benefits of Telematics.

Keyword: Telematics, Insurance, premium, information, technology, transmission, Communication, Network

1 INTRODUCTION

In this paper a novel technique to decide the insurance premium of vehicles is presented. Telematics the science of blending computers and wireless telecommunication technologies with the goal of efficiently transmitting data over a long distance.

Vehicle telematics deals with sending , receiving and storing information via telecommunication devices fitted in vehicles. This information includes fuel amount , frequency of vehicle braking, engine temperature , altitude, door open/close, tire pressure etc. In this paper an important application of vehicle telematics is discussed that is Telematics based vehicle insurance, insurance premium will be based on the actual driving data. Once this technique is blended

with every insurance providers system several advantages to the society, insurance holder, and insurance provider like reduction of number of accidents, payments based on actual driving data etc. can be obtained.

Insurance telematics is an emerging application of vehicle telematics. Telematics based insurance products are now being used by personal and commercial lines insurers to provide policy discounts and enhanced risk management. Insurance based on telematics has got different names as pay as you drive(PAYD), Pay how you drive(PHYD), Usage based insurance(USI). While developing telematics based insurance products the required data should be collected , aggregated and normalized for risk selection and pricing. The

data collected should be provided to insurance policy holders for easy understanding of their driving behavior.

Points to be considered for Telematics based insurance products

- What are the information necessary to integrate telematics into insurer's operation and core system.
- How will the insurer support usage based insurance.
- How will the insurer account for return on investment(ROI).
- Format of data provided to the policy holders.

2 TELEMATICS SYSTEM ARCHITECTURE

The main components of a Telematics System are as follows:

2.1 Telematics Control Unit(TUC) – The TUC is the embedded in-vehicle control unit that communicates with the automobile Electronics Control Units and GPS satellite and accesses the telematics services over the wireless infrastructure.

2.2 Telematics Network Operations System –

The TNOS is the hub of the operations from where all the telematics services are delivered and all the raw data from the TCUs is processed. TNOS also performs the fault management, configuration, accounting, and security functions in the telematics system.

2.3 Wireless Communications Infrastructure –

The WCI provides the backbone for all the information exchange between the TNOS and TCUs and also between the TCUs in the form of adhoc networks.

2.4 Service Provider response Center –

The SPCC representatives communicate with the vehicle occupants to provide the emergency and nonemergency call services and access the customer and vehicle information from the TNOS.

2.5 Service Provider –

The Service provider provides various services on request such as Traffic feeds, music, video, on-demand streaming data etc to the TNOS for different telematics services.

Services in the domain of automotive telematics include:

- Automatic Crash Notification
- Roadside Assistance Services
- Vehicle Tracking
- Remote Door Services
- Navigation Assistance
- Traffic Assistance
- Concierge Services
- Infotainment Services
- Fleet Management
- Diagnostics

3. COMPONENTS OF TELEMATICS BASED INSURANCE PRODUCTS

3.1 GPS Tracking Unit: Placed in the vehicle and captures GPS location and other vehicle information and sends to the central server.

3.2 GPS tracking server: Receives data from GPS tracking unit, Stores this data, transmits data based on the requirement.

3.3 User Interface: Provides data in user understandable form.

3.3 Insurance tabulating System: Calculated insurance premium based data received on driving behavior.

Data collected by Telematics devices provided to the user

- The time you drive
- The speed of the journey on different sorts of road
- How smoothly you drive
- Distance travelled.
- Total mileage
- Total number of journeys you make
- Details of any accidents

Usage of data collected through telematics

- Assess vehicle insurance risk
- Tabulate the cost of renewal premium
- Give safe drivers Bonus Miles.
- Help in case of accident.
- Track stolen vehicle

- Manage claim after an accident.

Telematics based vehicle insurance has got direct and indirect benefits. Direct benefits are for the policy holders and the Insurance provider and the indirect benefit is for the society.

Benefits to the policy holders

- Reduces Insurance premium.
- Induces safe driving habits.
- Quick response to accidents.

Benefits to the society

- Reduces pollution, traffic congestion and energy consumption.

Benefits to the Insurer

- Retain profitable risk.
- Correct risk assessment.
- Retain profitable accounts

4. CASE STUDY:

4.1 TELEMATICS BASED PRODUCT DEVELOPERS

4.1.1 INSURANCE TELEMATICS BY TOMTOM

TomTom insurance telematics products helps customers drive more consciously.

TomTom PRO 3100:

- A navigation device that include Active Driver Feedback. It alerts driver actively about unsafe and inefficient driving.
- Features all the TomTom's LIVE services including HD Traffic to

keep out of the jams and many other features for safe and efficient journey.

4.1.2 HUGHES TELEMATICS

Hughes Telematics, a company that's providing automotive telematics services to Chrysler and Mercedes-Benz starting in 2009. The Hughes Telematics system is actually an intricate network of systems and features that can cross-communicate.

Services provided by Hughes

- Roadside assistance, emergency calling, automatic crash notification and stolen vehicle locator service.
- Telematic navigation, turn-by-turn directions, real-time traffic information, traffic camera access.
- Vehicle maintenance reminders, diagnostic health check, recall reminder, remote emissions testing.
- Local information, stocks, weather, sports, news, streaming and storage of music and videos.

4.2 TELEMATICS BASED INSURANCE PROVIDERS

4.2.1 IKUBE INSURANCE

iKube uses a telematics device that is installed driver's car. ikube mainly focus young or learner drivers.

Steps in ikube insurance

1. The black box is installed under the dashboard of the car
2. The data the black box processes is sent back to the insurer.
3. The data is also sent direct to driver's car's dashboard so that driver can monitor it for himself.
4. Check the time of day when the vehicle is used.
5. As long the vehicle is not driven between 11pm - 5am insurance coverage will be provided.(11pm - 5 am know as red hours is the most risky time to drive for young drivers.)

If is driven during the red hours an nightly charge is incurred for every night you drive during the red hours. While renewing ikube *telematics car insurance* policy the data collected is taken into account. Various aspects of driving like Speed, Cornering, Braking, Acceleration etc are considered.

iKube's vehicle insurance special scheme for young drivers between the ages of 17 - 25 they are:

- Either fully comprehensive or third party fire and theft black box car insurance
- The ability to earn your own no claims bonus (NCB)
- Charge not per mile, unlike other providers.
- Fixed annual fee or monthly price

Special schemes of insurance are available based on particular cases.

4.2.2 FAIR PAY INSURANCE

Fair pay insurance is considered as good drivers insurance. Here all the drivers who drive safe can reap the benefits of this technology.

Considers past traditional stereotypes and offer the benefits of Pay How You Drive to those who genuinely believe they are good drivers.

Features

- Affordable black box insurance for good drivers who have passed their test - regardless of age.
- A TomTom navigation device gives unique in-car, real-time instant feedback on how you drive – allowing you to adapt and improve your driving as you drive. Fair Pay, helps you be more fuel efficient.
- TomTom navigation complete with LIVE services including Maps, Speed Camera Alerts and Search & Go. Find where you want to go quickly and easily!
- Here car insurance is reviewed every three months : if used well - enjoy further discounts, drive badly – incur an increase at review

- Clear information is provided to help to adapt driving to keep future costs down.

CONCLUSION: This paper provides an overview of telematics and vehicle insurance based telematics . Various research work are going on the field of telematics.

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