Vehicle and Insurance Telematics

Technology is changing everything around us. It affects how we live our lives, communicate, drive and even manage our financial affairs. It is only fair to expect that technology will have a significant impact on both road safety and on how much we pay to travel our roads. It has been said that the automotive world is trying to integrate more vertically with the driver. Vehicle telematics have the ability to speed up real information about driving behaviour. This in turn opens a world of opportunity for car insurance companies across the globe!

What is Telematics and Why Should We Take Note?
Definition: The etymology of telematics, as determined by Automotive Telematics author and academic Dennis Foy, is from the Greek "tele" (far away, especially in relation to the process of producing or recording) and "matos" (a derivative of the Greek machinari, or contrivance, usually taken in this context to mean "of its own accord"). As combined, the term "telematics" describes the process of long-distance transmission of computer-based information. Under the broader meaning of telematics we could include the following:

- The technology of sending, receiving and storing information via telecommunication devices in conjunction with effecting control on remote objects.
- The integrated use of telecommunications and informatics, for application in vehicles and with control of vehicles on the move.
- Telematics includes, but is not limited to Global Positioning System technology integrated with computers and mobile communications technology in automotive navigation systems.
- Most narrowly, the term refers to the use of such systems within road vehicles, in which case the term vehicle telematics may be used. This use includes emergency warning system for vehicles, GPS navigation, integrated hands-free cell phones, wireless safety communications and automatic driving assistance systems, etc.

Applications and Benefits of Vehicle Telematics
Vehicle Telematics are used extensively in both commercial and personal use. It has proven to be a powerful and valuable tool to improve the efficiency within organizations and businesses. Herewith find a brief reflection on the wide range of applications:

- GPS anti-theft systems reduce car thefts: GPS tracking devices are now widely recognized and required by motor insurers on high-end car models.
- Crash data reporting: Reports can provide insurers and vehicle owners with the necessary guidance to what caused an accident.
- Fraud prevention: Vehicle telematics can assist in exposing attempted fraud and provide answers in the sudden disappearance of vehicles.
- Improved risk management for commercial fleets: Information provided by state of the art vehicle telematics solutions provides insurance companies and their agents with the tools to reward fleet operators who maintain a high standard in traffic safety.
- Research assistance: Floating car data can provide motor insurers with valuable statistical data about driving behaviour that can be used for fine-tuning their complex insurance models for premium calculation.
- Creating incentives for high-risk drivers: Male drivers aged 18-25 pay premiums several times higher than older drivers because they are more frequently involved in accidents. By installing a telematics device they have a chance to save on insurance as they prove that they are more careful than the average.
- Vehicle Tracking: Tracking of vehicles is done by way of monitoring the location, movements, status and behaviour of a vehicle or fleet of vehicles. This is achieved through a combination of a GPS/GNSS receiver and an electronic device (usually comprising a GSM GPRS mo-
dem or SMS sender) installed in each vehicle, communicating with the user (dispatching, emergency or coordinating unit) and PC- or web-based software. The data are turned into information by management reporting tools in conjunction with a visual display on computerized mapping software.

- Trailer tracking: The technology of tracking the movements and position of an articulated vehicle's trailer unit, through the use of a location unit fitted to the trailer.
- Cold store freight: Cold store freight trailers are increasingly incorporating telematics to gather time-series data on the temperature inside the cargo container, both to trigger alarms and record an audit trail for business purposes. An increasingly sophisticated array of sensors, many incorporating RFID technology, are being used to ensure that temperature throughout the cargo remains within food-safety parameters.
- Fleet management: The management of a company’s vehicle fleet and can include functions such as vehicle financing, vehicle maintenance, vehicle telematics (tracking and diagnostics), driver management, fuel management and health & safety management.
- Satellite navigation: The technology of using a GPS and electronic mapping tool to enable the driver of a vehicle to locate a position, then route plan and navigate a journey.
- Wireless vehicle safety communications: This is telematics installed with the purpose of exchanging safety information, about such things as road hazards and the locations and speeds of vehicles etc.

Emergency warning system for vehicles: “Intelligent vehicles” are equipped with technology intended to accord (blend, or mesh) warning information with surrounding vehicles in the vicinity of travel, intra-vehicle, and infrastructure.

What is Insurance Telematics?

There is a clear and direct relationship between vehicle telematics and the benefits they are able to provide to the insurance industry in measuring and reporting on driving behaviour. Insurance is all about measuring and calculating risk. Insurance companies evaluate the level of risk and then set premium rates and coverage per the measurement in question. Vehicle telematics is the best, most effective and scientific way to limit risk.

What knowledge about driver behaviour would be most important to insurers?

- Insurers would be better able to measure risk by knowing what kind of driver is driving the vehicle.
- Do they drive the speed limit or race around town?
- How many times are they guilty of exceeding the speed limit?
- Do they gun it when they see a yellow light or slow down and stop?
- Are they prone to excessive cornering or braking?
- Where is the driver driving? Does he travel on the main roads or does he frequently enter hazardous areas?
- How far is he driving and at what time is he driving the vehicle?

An insurance company seldom knows the answers to these questions. With insurance policies developed with vehicle telematics in mind insurers can gain access to this information.

Usage Based/Pay As You Drive / Insurance Telematics

In the past car insurers only asked basic information to be disclosed. This included questions on driver and vehicle characteristics, use of the vehicle and geographical location. Premium calculation depended simply on type of vehicle, horsepower, sales price, age and sex of the driver, and
where he or she lives. Vehicle telematics now allows for usage based car insurance where technology is an important component in calculating insurance premiums. With vehicle telematics car insurance premiums are determined by actual performance on the road. Telematic devices transmit real-time driving data to insurers, who can then gain a more accurate picture of driving behaviour and use this to set fairer rates for law-abiding, fuel-conscious drivers.

Three Types of Usage Based Insurance

- Coverage is based on the odemeter reading of the vehicle.
- Coverage is based on the number of minutes the vehicle is being used as recorded by a vehicle-independent module transmitting data via cellphone or RF technology.
- Coverage is based on other data collected from the vehicle, including speed and time-of-day information in addition to distance or time travelled. Other data could include where you are driving and driving behaviour such as speeding, excessive braking, etc.

The formula can be a simple function of the number of miles you drive, or can vary according to the type of driving or the identity of the driver. Once the basic scheme is in place, it is possible to add further details, such as an extra risk premium if someone drives too long without a break, uses their mobile phone while driving, or travels at an excessive speed. By installing or embedding telecommunications devices into cars, insurers can now measure and price premiums more accurately, provide customized services, improve safety, and reduce claim costs.

Benefits in a Challenging Economic Climate

One of the driving forces behind the growing interest in insurance telematics is the need to survive in a challenging economy. With the cost of living at a high, vehicle owners are searching for potential savings – and the highly price competitive car insurance industry is the first port of call! Insurers who have designed insurance products to align pricing with driving behaviour are especially attractive to those safety conscious drivers who are, through their driving, reducing the risks on the road.

With these products the driver’s behaviour is monitored directly while he drives and this information is transmitted to an insurance company. The insurance company then assesses the risk of that driver having an accident and charges insurance premiums accordingly. A driver who drives long distance at high speed, for example, will be charged a higher rate than a driver who drives short distances at slower speeds. Telematics should therefore help you find cheaper motor cover if you are a good driver.

Challenges to Insurance Telematics

Despite the significant growth in the insurance telematics industry, one of the major challenges remains the concerns pertaining to privacy. Some drivers and vehicle owners believe that the technology to monitor driving behaviour from under their dashboard oversteps their right to privacy. This is especially so when the “black box” belongs to insurance companies that often struggle in the customer trust department. Industry experts have recommended that insurers will need to be more transparent as possible to address these fears. By making a full disclosure of value-added services to customers, and carefully positioning the offerings with the right messages they will succeed in winning over consumers. The concerns and challenges are however insignificant when compared with the benefits and overall impact of insurance telematics!

Road Safety and Insurance Telematics

How will insurance telematics impact on the efforts to enhance road safety? By providing the incentive of cheaper car insurance premiums for responsible driving behaviour, the insurance industry is also promoting road safety! Telematic usage based insurance requires that vehicle information is automatically transmitted to the tracking system. This provides a much more immediate feedback loop to the driver, by changing the cost of insurance dynamically with a change of risk. This means drivers have a stronger incentive to adopt safer practices. For example if a commuter switches to public transport or working at home, this immediately reduces the risk of rush-hour accidents. With usage based insurance, this reduction would be immediately reflected in the cost of car insurance for that month. Trials conducted by Norwich Union as early as 2005 have found that young drivers (18 to 23 year olds) signing up for telematic auto insurance have had a 20% lower accident rate than average.

Conclusion

Insurance telematics has been recognized for more than the benefit it provides of increasing safe driving behaviour. Traffic Congestion and the impact that CO2 emissions and green house gases have on the environment have received the attention of governments and world health and environmental protection agencies. Insurance telematics and GPS technology such as TomTom HD Traffic are regarded as some of the important tools to reduce unnecessary travel and traffic congestion. The New York Department of Transportation recently put out a request seeking ideas on how to use “mileage-based insurance pricing signals to trigger change in driver behavior.”

According to a 2008 study by the Brookings Institution, these incentives could reduce driving by as much as 8 percent, reduce emissions by 2 percent, oil consumption by 4 percent, and provide an average savings of $270 per car. A one-size-fits-all approach doesn’t make a lot of sense when it comes to pricing insurance,” Transportation Commissioner Janette Sadik-Khan told The Post. “Paying based on how much you drive is a potentially innovative way to make it less expensive for New Yorkers to get around.”

As technology becomes even more advanced and accessible we can expect an increased focus on product design in the insurance telematics industry!