Changes in Telematics: New Services, New Products and New Ways Of Using Telematics Data

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INTRODUCTION

If you're reading this, chances are you are either thinking of implementing a Vehicle Tracking or Telematics solution or have an existing system in place and want to understand what the difference is between the two and what is changing in terms of capabilities.

Telematics in one form or another has been around for over 20 years with the basic functions very much the same. Then it was called vehicle tracking but today is referred to as Telematics. That's not to say that telematics has not changed, it has in a great number of ways, but the core functionality of capturing the location of a mobile asset, vehicle, equipment or person, and displaying the location of that asset on a map with supporting information such as speed and status is still a key functionality of today's systems. This is the basic functionality of vehicle tracking systems.

In the same way the aims of users has remained quite similar: To make field operations more productive, lower operational costs, be less reliant on paper based systems, provide asset security and In terms of management this equates to targeting expensive fuel and labour costs and unproductive vehicle utilisation. It's still all about increasing business profits and improving fleet safety.

Todays Telematics solutions have evolved from the vehicle tracking functionality as companies develop more intelligent in-vehicle hardware devices, provide specialist software functionality for niche customer applications, mapping becomes more intelligent and management information becomes more detailed and flexible and able to integrate with existing business processes and systems.

Costs have also reduced, which in theory should make the Return On Investment decision easier, due to reduced communications costs with bundled GSM charges, inexpensive in-vehicle telematics hardware and, bar very specialist solutions, software applications delivered as SaaS (Software as a Solution) mean reduced or zero customer costs for in-house hardware and IT support.

Telematics moves us away from “dots on maps” vehicle tracking with limited management reports and all supplier product offerings being similar, to more business originated management information systems for a companies remote field based assets.

Although there will always be a need for basic “Track and Trace” solutions, what does Telematics offer over and above these and what new products and services should fleet users be considering to improve their bottom line today.

TELEMATICS SERVICES

As customers look at new ways to manage mobile assets and telematics companies develop new services what is available to enhance core vehicle tracking functionality.

Driver Behaviour Monitoring

Driven by the knowledge that if driving behaviour improves then fuel expenditure drops, carbon emissions are lowered and maintenance costs reduced, improved driving leads to fewer accidents and therefore a reduced insurance risk. In-vehicle units can capture harsh driving events and speeding data and also act as accident “black box” recorders.

Harsh driving and speeding data including a record of the number of speeding incidents by road type can be produced in management reports, generate driver league tables and driver and departmental comparisons to support driver training programs. In the event of an accident the “black box” data can be used to support insurance claims.

Smartphone Applications

As the growth of Smartphone’s and Tablets allow anytime, anywhere access to data more Telematics suppliers are offering applications for these devices. These cover two main uses: Monitoring of the fleet while away from the office and applications for drivers to access telematics data on their own and their vehicles performance. Examples of driver Smartphone telematics applications enable drivers to see their own driving behaviour performance making them more responsible for their own improvements and for drivers to manage personal data such as business / private mileage and expense claims.

Vehicle Systems Integration

Access to vehicle information systems via the vehicle CANbus or OBDII port provides an additional level of data to manage vehicle performance. Accurate fuel consumption and odometer data along with engine performance information can be vital for a company looking at detailed engine and fleet performance.

With the ability to access vehicle information systems the capture of vehicle diagnostic information and DTC codes allow for more proactive vehicle maintenance.

OBDII telematics hardware units also open the way for new user applications as they are able to be user self installed thus reducing overall costs and are portable between vehicles. This makes them suitable for temporary vehicle use such as short term rental or where installation costs would potentially make any ROI unachievable.

Insurance Based Telematics

Insurance companies are looking at telematics as a way of reducing risk and see monitoring of driver behaviour and regular audits as a way of gaining improvements in driving behaviour and therefore a potential reduction in claims.

The accident “black box” functionality also gives insurance claim experts the ability to analyse accident data and to defend claims if necessary. One area fleet operators and insurance companies are using telematics is for live First Notification of Loss (FNOL) applications. Sensors in the telematics hardware can detect an accident via G force sensors showing a rapid deceleration which can automatically send an alert to a designated claims management company.

A number of companies have installed Smartphone Telematics applications just for driver behavior management with no requirements to track vehicles for day to day operational management but purely for insurance cost reductions and improvements in driving style.

A separate area not so applicable to commercial fleet operators is Usage-Based Insurance / Telematics where driver behaviour data and the type of road driven allows insurance companies to adjust policy costs based on the drivers use of the insured vehicle. A number of Smartphone applications have been developed for insurance usage where all tracking data is captured by the Smartphone application rather than by an installed telematics unit. This is known as Telematics 2.0. *(Telematics 3.0 and 4,0 is an evolution of automatic telematics including remote connectivity to the vehicle and seamless integration of mobility and the web)*

Integrated Route Optimisation

As digital mapping becomes more intelligent, telematics suppliers have taken advantage to offer new services. Find the nearest vehicle functionality has been enhanced by the addition of estimating arrival times from the selected vehicle to the target address plus calculating a route based on real time traffic conditions, vehicle type and now even real-time weather routing is planned by one telematics service provider.

Dashboards

As more and more information becomes available it becomes harder to see the data that is valuable and accessible. Forward thinking telematics providers can display a customers key data in simple to read charts known as dashboards.

The dashboards display a company's KPI's including driver safety events, vehicle utilisation, vehicle idling and fuel usage, among others, allowing users to spot trends and benchmark vehicle and driver performance.

Dashboards provide easy access to KPI data with detailed reporting just a click away.

Data Mining — Big Data: Telematics as a Management Information Tool

Companies tend to hold telematics data in numerous locations and many formats, including printed records. These "Islands of Information" have a value of their own and provide a degree of operational and strategic management but can lead to either duplication of effort or information that is not acted on as it is stored on the wrong "island". Telematics data mining as a management information tool can increase the value placed on the information in terms of operational benefits. The data mining is achieved by management reporting applications that can process large amounts of data (Big Data), critical if your fleet size runs into many hundreds or even thousands, provide ad-hoc analysis, comparisons of data from one time period to another and presentation of the data in custom dashboard formats for easy visualisation.

This has also created new roles at fleet operators as a number have recently been recruiting for Telematics Business Analysis roles.

NEW TELEMATICS PRODUCTS

With a number of new Telematics services available that are generally software applications either delivered as SaaS telematics applications or via software / firmware within the telematics hardware what new products have Telematics Service Providers been releasing.

Specialist Telematics Applications

A number of telematics providers are now specialising in niche product offerings and some of the larger providers also have specialist applications as separately branded product offerings. One example of this is Highway Winter Maintenance telematics products. These are solutions with specialist hardware designed to monitor numerous sensors or data generated from road gritting and road sweeping equipment plus route planning with route deviation monitoring to ensure vehicle routes are adhered to.

Other specialist applications include ePOD, job scheduling, integrated cameras for incident recording, refuse collection management, RFID and QR Code readers and real time driver behavior feedback to drivers via either Smartphone apps or in-vehicle displays.

OBDII Telematics Units

Telematics units that plug into a vehicles OBDII port are now becoming a standard offering from telematics service providers. Functionality ranges from simple track and trace through to advanced telematics with similar functions to high end hardwired units plus the ability to capture accurate fuel consumption, odometer readings and maintenance diagnostic data.

Advantages are that the units can be swapped between vehicles as required and there are no installation costs. The vehicle rental / vehicle leasing sector is among the first to use OBDII telematics units due to often replacing vehicles on a regular basis and therefore installation costs are critical to the business model.

SatNav Integration

installing terminals in vehicles for messaging and dispatch applications has always been an added cost that some customers could not justify. Combined SatNav terminals which provide two way messaging functions are now at an affordable level and host telematics applications can transmit job information including customer location data that can seamlessly be added to the SatNav unit. Predefined routes can also be passed to the driver ensuring that the most effective route based on vehicle type and traffic information is taken.

Smartphone Telematics

As well as Smartphone applications being used to access and present data to fleet operators and drivers a number of Smartphone applications are available to eliminate the need for an in-vehicle telematics device. As with OBDII telematics units removing installation costs reduces overall life costs and transferring between vehicles is simple. In addition the data costs for transmission of the telematics data can be included in the Smartphone's data bundle.

Video Telematics

Over the past couple of years there have been a huge increase in GPS equipped Dash Cams designed to monitor vehicle speed and position and capture video recordings of either whole journeys or safety events such as accidents or near misses. The weakness of Dash Cams is in the storage and retrieval of video when needed to review a driving incident or accident. This has led to the development of Video Telematics solutions with integrated video recording and telematics functionality.

Using internal sensors and GPS data Video Telematics can detect safety events such as harsh braking or an impact (FNOL—First Notification of Loss) and record, transmit and save video footage to cloud based servers for later analysis. Video recordings can be vital in providing evidence in the event of a no fault accident or in conjunction with driving style data used for driver coaching to prevent near misses in the future.

The combination of vehicle tracking, telematics functionality and real time video based driver behaviour monitoring and incident capture can improve driver behaviour and reduce costs from erratic driving and insurance claims.

NEW WAYS OF USING TELEMATICS

With new products and services being launched on a regular basis offering additional functionality and more data on vehicle and driver activity are we using telematics in a different way?

Yes and No. There is still a requirement for simple “track and track” solutions that meet the needs of small fleet operators who simply want to check the location of a vehicle now and then. In some cases these companies do not have the administration staff to analyse and act on the telematics data and are well served by a number of solutions.

At the other end of the scale there are fleet operators who have a range of different requirements within the same company and use telematics in different ways depending on their internal needs. If we look at a large fleet there may be a combination of vehicle types, ranging from cars, small vans to large trucks plus differing operational requirements and any telematics solution selected must provide a different solution for each internal operational need, all from one telematics platform.

Cars on the fleet may only need telematics data to monitor business / private mileage for tax reporting and driver behaviour monitoring to reduce insurance costs and assist in meeting a company’s environment targets. The small vans may be used by service engineers, as an example, and the need in this case would be to improve operational efficiency through better dispatch of jobs, improving vehicle utilisation, reducing fuel costs and preventing unauthorised usage. If any large trucks on the fleet are used for distribution or deliveries then in addition to the needs of the small vans vehicle maintenance and monitoring driver hours may be required.

In addition to a single company running multiple applications for their own fleet there is the need to plan for the future through the analysis of historical data. The analysis may be financial or operational and will require access to data for inclusion in the planning process. A typical use of data mining and management reporting.

With so much data now available we are seeing companies using telematics data across a number of non fleet applications and delivered in real time to third party applications. This may range from allowing customers to see where the delivery vehicle or taxi allocated to them is through to real time route scheduling recalculations based on current vehicle location and status.

Both managers and drivers themselves can access key vehicle data anywhere, anytime with the growth of Smartphone applications moving responsibility and decision making from the desk to the field.

CONCLUSION

Telematics solutions are constantly evolving and will continue to do so. Hardware is becoming more intelligent with more data able to be captured, whilst the growth of Smartphone and video telematics applications encourages more companies to see where telematics will improve their business.

The data available and the way it is presented, Smartphones, custom dashboards, video, flexible management reports and data mining, specialised user interfaces and applications all allow companies to see benefits in implementing telematics across all mobile assets in a business and not just for a few key front line vehicles.

If you want to discuss how we can help Telematics improve your fleet operations please let us know.

Nigel Porter has over 30 years experience in telematics and mobile data with roles in development, sales and operations. Ranging from the early days of GPS tracking over analogue mobile phone and Private Mobile Radio networks to current GSM GPRS and satellite communications he has see telematics evolve into an essential management tool for companies with mobile assets.

His telematics experience is with both start-ups and large international public companies covering all aspects of product development, sales, technical and customer management for both commercial telematics and high level security applications. Currently he provides independent advice to companies seeking to implement telematics.

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