Trucking device

Are we in the midst of a smart or passive evolution of the ITS services provided by truck OEMs? RÉMI DEMERLE investigates

After a severe decline in heavy truck sales of some 50 per cent over the last decade, truck makers are putting their collective (and metaphorical) foot back down on the throttle.

DAF, Daimler, Iveco, MAN and Scania Volvo trucks, all major Western European manufacturers, are reporting increases in sales compared to 2009 but the global figures will still be only two-thirds of what they were in 2006. At the industry's biggest trade show in Hanover in September (www.iaa.de), it was clear to see that new strategies to move up a gear were flourishing. For European firms, how to survive in this global market becomes the new challenge for the next decade.

Firstly, one of the key elements is the fact that customers are recovering too and are more cost-cautious than before. A second fact is that public authorities have integrated a real objective to improve road usage and efficiency into their transport policy. In Europe, the recent adoption of a new European ITS directive and ITS projects in emerging markets like ERA Glonass in Russia or Anti-Theft System in Brazil, are paving the way for a greater use of telematics solutions.

One of telematics' selling points has always been its provision for cost savings, so it was not a surprise that most Western European truck manufacturers announced during IAA that all of their models will soon be standard-fitted with telematics systems. After a quiet period, the manufacturers have good cause to sound their horns in celebration of telematics' return to the fold.

Starting with keywords

There is a possible confusion about what a telematics solution for trucks actually is. Basically it's a solution enabling telecommunication of data and sometimes voice, between the truck and

a remote data centre. The more data to be translated into valuable information, the more complex the solution is to design and the harder it is to deploy.

From the very simple geolocation of trucks by satellite enabling remote tracking and tracing of vehicles on a map, to the remote monitoring of powertrain and fuel consumption, as well as the integration with supply chains, there is a wide range of connected services which can be rendered. All of them are usually designed to reduce vehicle wear, transportation times and fuel consumption.

Major European trucks makers have agreed to create and release a common standard Fleet Management Solutions (FMS) (http://www.fms-standard.com/) for making the reading of some information values on the CAN bus easier. This has enabled a greater market penetration of telematics services in Europe. As a result, the total number of FMS in active use in Europe is expected to grow from 1.5m in 2009 to 4.5m by 2014 according to Berg Insight studies. In Europe, the FMS market is growing fast and truck manufacturers are engaged in fierce competition with aftermarket vendors.

A look at what's inside

It's important to provide a brief overview of the equipment in the vehicle. Usually there is a hardware box installed called the "telematics unit" having wireless communications (mostly GSM/GPRS) and satellite location through GPS or Galileo in the near future. The telematics unit can be connected to the electronics of the vehicle and with other external equipments such as a display, a navigation device and the digital tachograph, offering direct management of the vehicle, the journey and the driver. One of the positive aspects of a telematics unit is that it enables the support of other objectives shared by the Intelligent Transport Systems (ITS) such as road safety, the reduction of traffic congestion and polluting emissions, together with a possible cooperative mobility. Nevertheless, in reality this is not as simple as it seems and implementation of ITS applications have failed in the past.

Key lessons of the past

So why have assistance and emergency services failed to be traded? In the former generation of FMS provided by truck OEMs, some were offering an alert and assistance service, but unfortunately it was not a great success with customers. One of the reasons given by truck manufacturers is that transporters do not like to be dependent on their dealers for this type of service and often have a global insurance policy in place for getting assistance. Therefore, a key lesson to learn here is that assistance is not the core centric value and remains an add-on. To be more successful, future telematics systems should have flexibility and allow customers to select how calls for assistance should be transmitted. Insurers and assistance companies could find an interesting new channel for their services and enter into a third-party model with truck makers.

Why have combined solutions of telematics with navigation offering traffic information and assistance service not been so

much of a success in the past? Some truck manufacturers have tried in vain to sell a complete state-of-the-art solution (the telematics unit, plus the navigation device, plus the display screen) assuming that customers would find it more interesting and have more value to have an embedded and fully integrated system. They also came up with the idea of reselling some value-added service for navigation such as traffic information, local search or orientation assistance - but this did not work.

This is the syndrome of selling a Swiss Army knife. The truth is very few customers are ready to afford the total price and given the diversity of vertical needs, it becomes rather difficult to match every specific requirement with one solution. In the meantime, aftermarket vendors have always been faster to offer more affordable and adapted solution with a better time to market. Last but not least, given the fact that many truck fleets are composed of different truck models and have different truck brands, it is unrealistic to manage a heterogeneous fleet with a unique and proprietary solution.

Why don't telematics systems converge with on-board units for road tolling?

In Germany, the first country to have deployed an Electronic Toll Collection system with GNSS/GSM on-board units installed in more than 680 000 trucks, in the initial period of the design process TollCollect decided to offer fleet management services based on the on-board unit. This did not ever come into being. One of the reasons for this was the lack of a legal and contractual setup for enabling the coexistence of a business application with a roadmeter tax application.

In other existing toll schemes in Europe (for example in Switzerland and Slovakia), on-board units have been limited to the toll application as well. From the installation of the device to the billing of customers, each world fights to retain ownership of its systems. On-board units belong to the world of road operators and toll service companies, while telematics units belong to the truck sphere.

What is new today?

Listening to some of the truck makers' presentations at IAA, it feels like telematics has reached a higher level of interest and has become an integral part of the strategy of truck manufacturers. Here are some key triggers resulting in the greater adoption of telematics that the strategists have in mind:

- *The increase of leasing business model due to the economic crisis* - Truck manufacturers have recognized the benefits of telematics as a good tracking and recovery solution for stolen trucks. According to MAN, telematics help to recover 20 per cent of their stolen leased trucks.
- *A new market has opened up due to the recent European regulations for switching from analog to digital tachograph, and regarding restrictions on driving time, forcing the collection and the storage of mass data from digital tachograph* - In the European Union, the use of the digital tachograph is made mandatory by Regulation (EEC) n° 3821/85 as last amended and from 16 June 2010, AETR countries were required to switch to digital tachographs for new registered vehicles. However, the Working Party on Road Transport (UN) decided, in a special session held on 22-23 April, on a tolerance period for the non-EU AETR countries until the 31 of December 2010. For more information visit *http://www.eu-digitaltachograph.org*.

In the last two years, there has been a boom in offers of various solutions coming from aftermarket vendors. Daimler Fleetboard introduced its first solution after IAA 2008, Volvo Trucks and MAN and others have a solution in preparation.

- *Fuel consumption monitoring provides significant and real savings for the customers* - Such functions are very well appreciated in the Nordic countries and will become more widely adopted as long as fuel prices continue to increase over time. But the key point here is that savings are maintained only if transport companies build a global approach proposing adequate training and a good incentive program to their drivers and keep on controlling them on a regular basis. In addition, with driving profile analysis, it becomes possible not only to provide savings in fuel consumption but greater reduction of risks.

These examples show that truck manufacturers are contributing to some of the ITS objectives defined by the public authorities - as long as it is possible to find a good payback.

The offering of services has been modularized to be more affordable and scalable over time. The time of all-in-one systems with an armada of services is over. There is less disparity than before in the services offered and only profitable services will survive. ITS applications are not integrated into telematics services but the objectives are shared. Research projects in ITS are still of interest truck companies, but business orientations are different. The evolution of telematics offered by truck manufacturers is not dependent from ITS.

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Future perfect

The following scenarios illustrate what a telematics future could look like in the world of transport.

One scenario could see a commoditisation of telematics used for basic fleet management solutions. The track and trace service has already become very commoditized due to the numerous aftermarket proposals. The same is going to happen with the collection of vehicle data through the FMS standard and the enabling of fuel consumption monitoring. In the longer term, the trend of green mobility in Western economies will force this to happen.

One can imagine that it will become a regulation requiring to collect and account every mileage used for the transport of goods - this will have the same effect as regulations regarding driving time and will create a niche aftermarket first, becoming a commodity business in next to no time.

A second scenario likely to occur is that truck makers will re-concentrate on what they are best-placed to make and what brings real profit - the aftersales services. They can provide a good diagnosis of the wear and tear of the vehicle and offer preventive maintenance.

The third scenario, which has some uncertainties, is that logistic providers seize the opportunity to use telematics to improve the efficiency of their supply chains and will push for integration into their IT Systems. Then leadership of truck makers in telematics may be squeezed between new outsiders, the IT integrators and the hardware vendors. TH

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