

Innovators, early adopters, laggards, luddites and disrupters – those who play a role in the emerging markets in vehicle telematics.

Have No Illusions!



A **disruptive technology** or **disruptive innovation** describe a technological innovation, product, or service that uses a "disruptive" rather than an "evolutionary" or "sustaining" strategy to overturn existing dominant technologies or status quo products within a market. Occasionally, a disruptive technology comes to dominate an existing market by either filling a role that older technology could not fill (as cheaper, lower capacity but smaller-sized flash memory is doing for personal data storage in the 2000s) or by successively moving up-market through performance improvements until finally displacing the market incumbents (as digital photography has largely replaced film photography).

By contrast, "**revolutionary technology**" introduces products with highly improved new features into the market. This is the innovation that most often replaces the incumbent (SatNav vs paper map). In addition, a "sustaining technology or innovation" improves product performance of established products. Sustaining technologies are often incremental; however, they can also be radical or discontinuous.

An **early adopter** is a person or company that embraces new technology before most others do. Early adopters tend to buy or try out new hardware items, programmes or new versions of existing programmes sooner than most of their peers.

Early adopters, while eager to explore new options in technology, are not the most daring, and are not especially prone to taking risks. Arguably, a small minority of people called **innovators** play that role. Only one person in forty is of this type. They are the people most likely to conceive and develop new methodologies and technologies and who often end up in product development or spawning new ventures.

Early adopters and **innovators** have counterparts, known as **laggards** and **luddites**, at the opposite end of the human spectrum. Laggards (to lag behind) are slow or reluctant to embrace new technology because of disinterest or financial constraints. Luddites actively fear or loathe new technology; especially those forms they believe threaten existing jobs or market share. History has shown this type of person even uses sabotage as a tool to prevent change.

The right technology at the wrong time – first adopters that flopped

It's a sad but common tale in technology. A dynamic company or even a garden shed developer comes up with an innovative new product or service that utilises cutting-edge technology in an exciting way that generates lots of hype and attention. Unfortunately for some reason this new product fails to click with the masses and falls into oblivion, only to see others gain massive success by following in their footsteps.

However, it's not always a case of right technology at the wrong time. Sometimes these **first adopters** failed to build on their innovation by sitting on their initial achievements instead and letting nimbler competitors refine the idea into something more attractive and functional. Inevitably through bad management some also just made too many mistakes to succeed.

If we relate these human characteristics and phenomena to the subject matter in hand then first or early adopters of telematics, especially within the fleet and insurance industry, have much more to gain by adopting its use. Playing this story out in real life we have just witnessed the withdrawal of a simple mileage based Pay-As-You-Drive (PAYD) scheme by Norwich Union. Whilst many reasons were given publicly for its withdrawal to those close to the initiative it is clear that they probably didn't understand the market and simply got their model wrong. Trying now, in the aftermath of Norwich Union's withdrawal, to get any naturally cautious insurer to look at PAYD is itself an innovative venture - this is not to say it cannot be done.

I'm not here to blame, shame or pass judgment as the theorists and analysts would argue that whoever was first to market would have gone the same way.

There are many commercial and environment factors as well as subliminal practices that played their part in this applications demise:

- Insurance Aggregators have killed, if not all, most of the profit margin in retail rates by forcing premium rates to fall; thus negating any margin for telematics equipment within the policy premium. This by default removes most of the potential clients from the target market. Therefore there is no sizable market for PAYD as the general volume market is very large but based on price. This does appear to relate to fleets and certainly to those groups rejected as too risky by the aggregators. This leaves only the groups under 25 or with a history of claims.
- Forcing the insured to install telematics equipment at their own cost has never really worked and on the face of it is usually heavily 'incentivised' by offering premium discounts. Something is clearly out of synch as the reasons for mandating the fitting of so called 'telematics approved devices' is blatantly misleading. A common form of misconception and technical mistake is to take a tracking system designed for 'simple dot on the map application' and use it for a new and complicated application. Such devices are usually chosen from the Thatcham approved devices list and are assumed to be appropriate and relate to vehicle security or theft. An interesting anomaly really - to shoehorn a new application on the back of another is poor practice. PAYD is not based on theft but measured mileage or time. Unless lessons are learned then clearly new entrants or Me2's will be reluctant to make a move.
- There is still an ongoing argument about who owns the data. The Data Protection Act comes into full swing when the driver has to give consent for the employer to have access to the data whilst driving during works time or in a company car. Many employers overcome this by changing the terms of their employment contract to obtain written consent before employment is offered. A field day for the enlightened Luddites as its easy to for them to say no at this point and it's usually a killer blow if they can get their point across. However what they forget is that Health and Safety against Data Protection wins every time and especially when we are now looking at Corporate Manslaughter legislation and employment Duty of Care. The losers of this debate are clearly in the retail or consumer sectors and telematics for this market sector is often a grudge purchase and will only be made if mandated for a reason or is of obvious and tangible benefit to the user.
- The code of practice on cell site location using handsets is heavily biased away from automated telematics use and is biased to the protection of the handset user. Clearly this has not been carefully thought through as it may be appropriate for handset users but all telematics systems have GSM modems in them and the code of practice is skewed when applied to location requests. In this regard consent on each occasion is needed from telematics users to request location data. No issues for the handset user if the SMS consent request appears on your screen but it doesn't or cannot on covertly fitted telematics system. More ammunition for the Luddites!

Whatever your views it is a good enough muddle to give the excuse for most insurers to be cautious about entering the market.

GSM Location Based Services provide personalised services to the subscriber based on their current position. Two categories of methods can be used to find the location of the subscriber: basic and advanced. Basic positioning methods are based on the knowledge of the cell the subscriber is using (cell ID). This can be used alone, or together with other information available in the network such as timing advance (TA) and network measurement reports (NMR). This information is available for all handsets. Advanced techniques will be available in new handsets such as Enhanced Observed Time Difference (E-OTD) and Assisted GPS (A-GPS) which uses the GSM network to help the reception of the freely available GPS system.

New code of practice

A code of practice that self-regulates the business and relationships with those being tracked.

This code provides employers and employees some useful rules that can keep matters fair, preserving a necessary degree of privacy and security. For instance:

- Staff must be advised that they (or their vehicle/equipment) are to be tracked (or occasionally located), and they must each give formal agreement to this
- They must be reminded (approximately) monthly
- They should be able to switch the location service off, and on
- Whether the tracking device is vehicle-based, or user-based, does not matter; in either case the points above apply
- Businesses must protect information about their employee's location - it should be secure, and only made available on an authorised and need-to-know basis.

Vehicle insurance today (2008) is not a big expense relative to the total cost of ownership of a vehicle. Most drivers have real concerns over rising fuel costs and CO₂ and the new burden of carbon taxation. It frequently cost more in fuel costs these days than the cost of the driver. Thus unless they can save fuel telematics initiatives often play second fiddle to fuel savings products these days.

Telematics equipment and service costs are commonly thought by insurers and fleet managers to be too high and need to be much lower before it becomes worth while as currently the perception is that costs are greater than the perceived or actual benefits. Potential adopters are mostly confused and often require product applications that are not yet available or require development. This coupled with the request to trial before use creates an environment where everything is bespoke and nothing becomes standard.

Who to choose as a technology partner or telematics service provider as no one has emerged as the 'Microsoft' of telematics yet and all parties are fiercely defending their IPR and patents.

GSM network costs are too high and are not modelled for these 'smart' applications. Often the networks themselves behaving as both gamekeeper and poacher and will compete with telematics service providers. Shamefully even today the GSM networks have demonstrated their ineptness at providing accurate itemised billing services and still do not have control over GPRS roaming costs. On the good news front we are now seeing a roll-out of world-wide contract SIMs with fixed fees for SMS and GPRS. However the average cost is still a bit high.

Smart application developers have already overcome this by integrating national dial codes of SMSC numbers within the code space on the SIM itself using an SMS tool kit sold by the networks. However if spotted the networks will always ban or bar the SIMs arguing it's against their terms of use. Another example of the action of a professional Luddite and a violent and unjust move against what is wrongly perceived as a disruptive technology when it is clearly revolutionary technology. If we are to place any blame it must be against the regulators who are blatantly not acting in the consumers interest in these matters and probably have sold their soul.

So called GSM gateway technology has been violently opposed by all mobile networks operators deemed by them as illegal and fraudulent. I guess any new technology that reduces costs to the user and therefore the margin for network provider will be attacked even though these systems are widely sold by the networks in the past few years. This story has yet to be played out but it has created a 'wait and see' approach by those wanting to enter the market. Even those telematics service providers that have been approved for gateway use have seen their SIMs fried. More could be said on this matter at this point but it has enough content for a separate paper.

There are new benefits emerging

eCall will benefit insurers. Improving traffic safety has been a top priority for the insurance industry ever since passenger cars became prevalent. Many new car safety features have been embraced and promoted by the insurance community in the past. eCall deserves a similar treatment as the system is capable of saving claims costs as well as lives. However ecall should be linked to event data recorders (EDR) and such devices are yet to become standard in Europe but are commonly fitted in the US.

GPS anti-theft systems reduce car thefts. The number of cars disappearing through theft has declined in recent years. This is largely due to improved car security features. One of them is GPS tracking devices, which are now widely required by motor insurers on high-end car models. The stumbling block for this technology is however the Data Protection Act and so many fleets are reluctant to adopt GPS as it is often a political hot potato.

Remote Vehicle Diagnostics + GPS is now emerging as a low cost multi-functional technology especially if equipped with crash recorders, g-force monitors and GPS. However most vehicle OEMs are reluctant to offer the vehicle's CANbus function codes so the market is restricted to those with a history and expertise of diagnostics tooling rather than with a pedigree in pure telematics. Thus bizarrely we are on the dawn of a new market but offered by those who are experts with retro-engineering skills or code breaking.

To help clarify this new market and make it easier for consumers and by default budding telematics service providers the EU has placed on statute the European Union's Car Block Exemption rules. These changes will mean more competition in the servicing and repair market leading to lower costs and higher standards for consumers.

The after-sales market will be opened up, with a change to the rules linking new car sales and servicing. Dealers will still have to ensure that customers' cars are serviced and repaired to manufacturer-approved standards, but they will no longer have to do it themselves; and independent garages and roadside assistance organisations will have much greater access to technical information, including diagnostic equipment and software.

Dealers will be freer to determine how they run their businesses. The better the service they offer, the more they will be rewarded. Poor performers will find it harder to survive. Good words but unfortunately none of the vehicle manufacturers will publish this data and are stifling advancement.

Revolutionary technology that creates a paradigm shift in service levels will however have a huge impact on this market. Vehicles that can report their own dash red light faults (trouble codes) will soon bid out on eBay for a the cheapest quote. Car fitted with wi-fi will also self-service and download new software whilst garaged. Modern vehicles are 40%, and increasing, computer these days so the Remote Garage will emerge soon.

Telematics is efficient for fraud prevention. One of the reasons why motor insurers are beginning to embrace telematics is because it helps them to expose attempted fraud. Basic vehicle data can say a lot about what has really caused an accident or why a car has disappeared. A vehicle will automatically report an incident and offer a cause or perhaps a replay.

Improved risk management for commercial fleets. About two-thirds of all company drivers have at least one insurance claim per year. With access to vehicle data collected by fleet management systems, insurance companies and their agents are able to reward fleet operators who maintain a high standard in traffic safety. Details on driver behaviour is already logged by telematics devices and transmitted for training purposes. Speed and rev limiting are now commonplace and can be geo-coded to save fuel and CO₂. Generally such technology will, also impact on accident claims ratios.

For research purposes floating car data can provide motor insurers with valuable statistical data about driving behaviour that can be used for fine-tuning their complex models for premium calculation.

The motor insurance industry is fiercely competitive with very low margins. Telematics allows product differentiation on grounds other than just pricing. Subsidising GPS trackers may be worthwhile - even for ordinary cars in neighbourhoods with high crime rates, and low-mileage drivers can benefit from pay-per-use billing

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 considerably by proving to be more careful than

the average. In this regard PAYD systems appear to have the edge over mileage based schemes and can highlight KPI's such as excessive speed, hash breaking fast acceleration etc

PAYD insurance can still become a reality. However they will probably fall away to schemes offering underwriters more information on how to calculate insured risk. This will include CANBus based devices and onboard cameras and services that promote first notification of loss or FNOL. Being able to control costs after a road accident appear to be the emergent contender for telematics. The technology provides a critical interface between risk carriers, the end customers and approved repair networks, enabling its clients to ensure that their customers are effectively serviced. FNOL solutions are often – although not exclusively – applied in collaboration with incident, claims and supplier management solutions, allowing the insurer to guarantee a smooth and trouble free experience for the end customer, whilst also ensuring maximum operational efficiencies across the repair process.

Most of the early adopters or providers have failed so far and withdrawn from the market and Me2's are still reluctant to emerge. Lots of people are talking about insurance-based telematics but few are actually offering it or entering the market.

Lets see...



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