



Wavy Lines Taken With Telematics in Motor Insurance

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It sounds appealing, modern, futuristic and, most of all, digital: an interactive motor insurance policy that uses either a small box installed in a car or a mobile app to monitor the insured vehicle and provide usage-based tariffs. These telematics insurance products are high on the list of priorities of almost every motor insurer – at least as a theoretical concept. More and more German insurers are now turning these “what ifs” into practical field studies and even prototypes.

First test products available for end customers in Germany

Until now, it was mostly smaller insurance companies in Germany that started providing end customers with operative solutions. SparkassenDirekt-Versicherung pioneered this new technology in late 2013, launching the first telematics product in Germany in the midst of a media frenzy. The resulting marketing effect completely eclipsed doubts on underwriting and customer demand – and rightly so, as this product was limited to 1,000 boxes at launch. The next German telematics product, known as Sijox, was launched by Signal Iduna Versicherung in late 2014 for customers up to 30 years of age; it gained less media attention. Last year it was followed by the first products from such major insurers as Axa, which also targeted young drivers, and VHV Versicherungen, whose target group included all policyholders. The announcements that German market leaders Allianz and HUK-Coburg will now also be providing telematics products should likely increase the pressure on undecided market players to establish a position.

The floundering that can currently be witnessed is remarkable and could even be considered irrational. The unanswered question of how the existing technology can be cleanly transformed into a feasible insurance concept notwithstanding,

Contents

First test products available for end customers in Germany	1
Highly heterogeneous vehicle insurance market, even without telematics	2
Telematics data require an extensive infrastructure	2
Can telematics lower tariffs in spite of the higher costs?	3
Can the costs of the additional infrastructure be financed through positive risk selection?	3
Are telematics only for selected customer groups?	4
Even telematics data does not provide complete information	4
Telematics data is more frequently encountering driver assistance systems	5
Can telematics be used to break the current data monopoly of manufacturers?	5
Will telematics make vehicle insurance more attractive to customers?	6

About This Newsletter

Insurance Issues® provides an in-depth look at timely and important topics on property/casualty insurance industry issues.

the actual level of customer interest in this development is increasingly in doubt. Should the frequently discussed statement “telematics needs a business case” be closely followed by “telematics needs customers”?

Highly heterogeneous motor insurance market, even without telematics

In order to assess the potential of these interactive product concepts, we must first take a closer look at the current tariffs and products on the market.

Let’s take motor insurance in Germany as an example. No insurance product has changed as extensively as motor insurance since being deregulated in 1994. For more than 20 years, the product has been known for its extremely intense competition, in which two price cycles have already almost been completed. Even after these cycles were balanced out, money was only earned through the non-technical account in motor insurance. The average premiums have been nominally equal to those at the millennium due to the greatly reduced frequency of losses as well as the level of competition.

Innovations in vehicles and loss management, as well as the growing density of traffic, have so greatly reduced the frequency of losses that over the past two decades, the entire sector has lost about one-quarter of its economic significance compared to other sectors (adjusted for inflation), despite the number of providers remaining largely stable. In the process, the variety of products and tariffs has dramatically increased and the spread of product types and price structures has grown considerably. Until the mid-1990s the sector worked almost in concert with five standard tariff features; nowadays more than 20 tariff criteria on average are used to assess risks, and some insurers even apply more than 40 customer and vehicle characteristics in order to assess individual risks.

Even without new technology, such as telematics, we can see that the market of traditional products and tariffs is extremely heterogeneous and that similar types of risk are sometimes rated

dramatically differently. One example is the addition of a new driver to an ongoing policy, which results in a 20% surcharge with some companies, whereas other providers would double or even triple the initial amount.

Although all actuaries might have more and more valid, significant statistics, the pricing methods of the market players are not converging. On the contrary, as one group of providers has increased the complexity of its tariff models and the other group has chosen to retain its fixed-price approach, certain risk assessments even seem to be divergent in the market – certainly not due to mathematical models, but rather marketing standards.

This shows that telematics information is in no way a departure from a regulated tariff landscape and therefore not necessarily a competitive advantage. Rather, these add additional parameters to an already highly differentiated and divergent tariff landscape. Even on the premise – to be discussed further below – that telematics vehicle monitoring can significantly decrease claims expenditure, at best the current price leaders would be able to generate an unbeatable competitive advantage. Only they would be capable of providing customers with a truly unrivaled low price.

On the other hand, all other market players – i.e., the vast majority – face the major risk that although they would be able to provide cheaper tariffs with telematics, the tariffs would still be more expensive than traditional competitive products. The current tariff landscape implies that many potential providers of telematics tariffs are ultimately demanding more from their customers, despite the supposed advantages, than the cheapest products without a tracking box; simply switching insurers could provide far greater leverage than the installation of a telematics unit.

Telematics data require an extensive infrastructure

From an actuarial perspective, the additional data obtained through telematics vehicle monitoring are extremely interesting, without question. Were this information obtainable at no great cost, no

actuaries of a German insurer would delay in analysing the relevance of the risk and integrating the findings into tariffs. However, it is generally known that in reality a cost-intensive infrastructure is required, even just to collect this information. Despite scaling effects for technology providers and degressive hardware and transaction costs, one considerable cost factor remains that could double the previous cost ratios of many a provider.

An analysis of the commercial benefit in relation to costs is indispensable, especially as the customer of a telematics insurance product expects something suitable in return for all-year monitoring by the insurer. Various service offers, such as journey logging or vehicle tracking, are conceivable options, although a (potential) reduction in contributions is the primary sales argument. This is intended to pique the interest of customers and increase demand for telematics insurance products.

Can telematics lower tariffs in spite of the higher costs?

This is the first great dilemma faced by providers of telematics products: they must provide cheaper products despite higher costs in order to impress customers with a positive cost-benefit ratio. It should be clear that this can only be achieved by massively reducing the costs of losses.

“No problem,” say some advocates, referring to experience abroad with advisors and double-digit reduction rates. However, some of that experience is based on completely different base tariff models. It is easy, for example, for infrequent drivers in foreign insurance markets to use telematics and produce positive loss records that leave out mileage as a criterion of the tariff – unlike in Germany, where many customer characteristics are taken into account, including mileage. Even static basic properties of vehicles, such as acceleration, tuning and power to weight ratio, can be integrated into tariffs using conventional methods. This would allow the parameters of expected vehicle usage to be forecast and accounted for in advance, with the additional use of dynamic telematics tracking being limited to the recording of deviations from the expected values.

Therefore, an initial analysis of each tariff landscape is of major importance as the objective effect of telematics parameters can only be evaluated fairly when distinguished from the use of all conceivable traditional tariff differentiation methods. In Germany only a fraction of the market uses these fully traditional differentiation methods exhaustively, if at all; most companies limit the complexity of their tariffs due to marketing restrictions. However, an international comparison shows this even this limited tariff differentiation in a relative light as much simpler tariff structures are often used outside of Germany.

Many success stories from foreign markets are based on the fundamental principle of “the simpler the traditional base tariff model for motor insurance, the easier it is to reduce claims expenditure using telematics”. The question of whether similar levels of success in these markets could have been achieved without telematics, i.e. using traditional tariff refinements, remains mostly unanswered.

Can the costs of the additional infrastructure be financed through positive risk selection?

Regardless of the assessment problems, there is still a significant effect that, based on experience abroad, should also be applicable to German



customers. It is positive selection by first-mover customers, i.e. customers who voluntarily switch to the first innovative telematics products without really needing to do so. In a dual market landscape in which tariffs are available both with and without telematics, the first customers to opt for a telematics product might primarily be those who are of the opinion that their driving on German roads is extremely correct and defensive. Even if it is not always accurate, this personal analysis should lead to a generally positive risk selection. However, this outcome would also be absolutely necessary in order to finance the costs of the infrastructure as well as the expected customer savings.

According to the calculations of Gen Re, claims expenditure would have to decrease by 30% just to cover the costs of telematics (estimated at approximately EUR 8 per month) for the product to be made available to all German customers (based on a current average motor insurance premium of approximately EUR 525). Some providers suggest a “mere” 20% decrease that would not even cover the estimated costs – to say nothing of passing on savings to end customers.

Is telematics only for selected customer groups?

This problem was discovered when insurers increasingly decided to generally offer telematics products to every potential customer. Current developments are focusing on what are known as higher risks, i.e., customer groups who already have to pay considerably more than the average premiums for their insurance cover. Naturally, the potential savings and contribution profit margins

look significantly better, for example, if customers have to pay more than EUR 1,000 for their motor insurance. But the price of limiting these products is high; out of all insured vehicles, only around 6% of German customers remain in the target group, and most are young drivers who normally leave the high premium category after building up a few years of experience. If every second customer in this target group opted for a telematics product, just 1.2 million of 40 million insured vehicles would be equipped with the technology. To put it another way, a major German insurer with a million motor policies would develop an immensely complex and expensive insurance solution for no more than 30,000 customers.

In this regard it is certainly advisable for insurance companies to consider their own specific cost-benefit ratios. These general conditions are far more promising in many foreign insurance markets where the average premiums are sometimes considerably higher – another reason why the prospects for telematics products might vary greatly in an international comparison.

Even telematics data do not provide complete information

Many insurers that, due to the arguments above, are not currently jumping on the telematics bandwagon still have a bad feeling that they are missing out on valuable information that might define their futures. It is said again and again in debates that telematics data could produce such significant findings that all previous approaches and methods would be rendered obsolete. Naturally, we cannot definitively judge the quality or significance of this information, as it is quite simply not available – not to us, not to insurers that are currently working on it, and not to product providers or advisors. There is only conjecture, hypotheses and ultimately just a gut feeling.

However, at the very least it seems unlikely that the tracking of vehicles from the air without having definitive data, no measurement of distances and g-forces, will bring the current tariff world crashing down. This would mean that a novice driver would be assessed in exactly the same way as his or her



parents if they were travelling in the same vehicle and in the same place when the vehicle accelerated and braked with identical g-forces. Rather, the fact is that driver characteristics and experience, vehicle data, and sociographic information play an important part in risk classification, and they may become accepted even in a world of telematics. These parameters cannot be replaced by purely telematics data.

Therefore, it seems far more realistic that telematics data will supplement current tariff methods and that the current tariff landscape will be refined further by additional differentiation methods. The isolated significance of telematics data might be overestimated, as it is often suggested that this technology could provide complete information on the driving situation. Most of this data, obtained at great cost, falls at even the simplest hurdle: Who is actually sitting behind the wheel? What is the general condition of the driver (e.g. alert, annoyed, tired)? How are the roads and visibility? Is there a risk of black ice? What are the traffic conditions?

Clearly, the general parameters, in particular, have a considerable impact on the correct interpretation of telematics parameters. If, for example, the measured g-forces and speeds of a driver in good weather and visibility are completely acceptable and in order, the assessment will change abruptly if the same values should be obtained in poor weather and visibility. How is this necessary situational adjustment to changes in the general conditions to be identified or adequately evaluated by the technology? The list of open questions and missing information can be added to ad infinitum at this point. However, the issues raised also show that after telematics information is evaluated, many details on the actual driving situation might still be missing from the detailed risk assessment.

Telematics data are more frequently encountering driver assistance systems

Besides the external influences, simple issues are still outstanding and absolutely cannot be ignored as part of the general digitisation debate about the technological development of the insured vehicle

itself. If telematics insurance products are to be the industry's approach to vehicle insurance in the future, it must of course be possible to apply this insurance solution to the vehicles of the future. And even if fully automated vehicles are still a long way off, even now vehicles can independently accelerate and brake with no input from the driver. Collision avoidance radar and camera technology are increasingly taking control of the vehicle in specific cases, such as on motorways or in traffic jams. If this technological development becomes standard in normal vehicles over the next few years, the telematics approach to insurance will have already lost its most significant parameter before it has become widespread: the measurement of g-forces.

If partially automated routes become an everyday occurrence, the analysis of acceleration and braking habits will be of little use if the following crucial question remains unanswered: Is the vehicle or the driver driving? The current telematics solutions do not provide any sort of identification opportunity for this crucial risk assessment information. This might be exclusive to vehicle manufacturers that could also see the type, scale and chronological use of installed assistance systems through holistic vehicle networking.

Can telematics be used to break the current data monopoly of manufacturers?

Perhaps this very monopoly held by manufacturers, currently the subject of intense political debate, is the force moving many insurance companies to experiment with their "own" telematics data. However, it is hard to substitute the data quality of built-in vehicle information systems with retrofitted boxes or customer mobile phones – as underlined by the question regarding the use of assistance systems. Ultimately, only original access to holistic vehicle network data seems to be a productive way of improving risk differentiation beyond current traditional approaches. It remains to be seen whether this access will work for insurers (especially independent insurers); legislative and judicial cases will ultimately have to pave the way. However, the current responses of the insurance industry to the

imbalance of data seem to be of only limited use in avoiding the risk of business fields drifting towards vehicle manufacturers.

Regardless, manufacturers have so far shown little interest in customer-specific insurance tariff models, especially as vehicles are not also given usage-based prices. Rather, they have preferred not to account for the effects of changes in type and regional classification and no-claims bonus in the term of lease. This “flat-rate” approach raises the question of whether the threat scenario faced by manufacturers is at all related to the question of their data monopoly. Or is it related to the technologically supported merging of vehicles and all mobility requirements into one holistic approach? Should more and more customers start preferring comprehensive package solutions at the vehicle’s point of sale, independent vehicle insurers would be left with nothing – with or without telematics products.

Will telematics make vehicle insurance more attractive to customers?

Regardless of these statements and concerns, ultimately the customer will decide whether telematics technology is used in vehicle insurance. At this point we will expressly ignore the data protection argument against the use of telematics, as experience in other sectors has

shown that younger generations of customers have a completely different attitude toward data protection. Many customers seem willing to consent to the disclosure of their personal data if the benefits are worth the cost – as demonstrated in impressive fashion by the use of the location tracker in mobile phones. However, can this observation of the digital natives actually be applied to insurance products? Would every customer who chooses to share his or her mobile phone location also unreservedly consent to vehicle monitoring by the insurer? Does the cost justify all-year tracking and the benefits of service and lower premiums? No one can currently answer with certainty.

These issues also raise the question whether the currently low attractiveness of motor insurance products to customers can be significantly increased by such interactive approaches. Will telematics insurance solutions transform an intangible insurance product into an experience package for the end user, like the vehicle itself, for example? The first available figures on their reception by German customers give little cause for optimism. In spite of media support, it took several months for the first 1,000 boxes available in Germany to find their way into the hands of customers; popular consumer products certainly have different sales volumes. Even the other already available telematics products in the market seem to have been met with reservation by customers, although few official figures are available.

Moreover, customers seem highly sceptical and reserved towards insurance, as demonstrated by CoPilot, a telematics product provided by public insurers in Germany. Even this box – which has been available for four years, only provides a reasonable emergency ambulance service similar to the e-call concept and does not allow for any vehicle monitoring on a daily basis – has been met with “reservation and even rejection by customers” according to SV Sparkassen-Versicherung.

The final argument being put forward by providers and advisors is to simply test telematics in the form of research and development components, regardless of the sceptics. If the budget can



stretch far enough for such a test and there are no alternative fields of research, there is no reason not to try this approach. Future research is characterised by the use of trial and error to get gradually closer to new product developments. The associated costs notwithstanding, telematics can always produce new findings; in addition it poses few risks of significant losses.

Perhaps one final option is to apply the notion of “where there’s a will, there’s a way” to forcibly merge modern technology and conservative insurance in order to ensure the preservation of motor insurance in a future where companies are focused on digitisation. However, if fundamental matters of actuarial and vehicle technology are ignored, and the wishes and limits of customers are not taken into consideration in equal measure, this approach could quickly prove to be a wrong turn.

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