



Focus

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Motor Insurance & Reinsurance

Current Issues and Future Trends



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December 2013

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SCOR
Global P&C



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*The views and the statements
expressed in this publication are
the sole responsibility of the authors*

1

OVERVIEW OF THE EUROPEAN MOTOR INSURANCE MARKETS

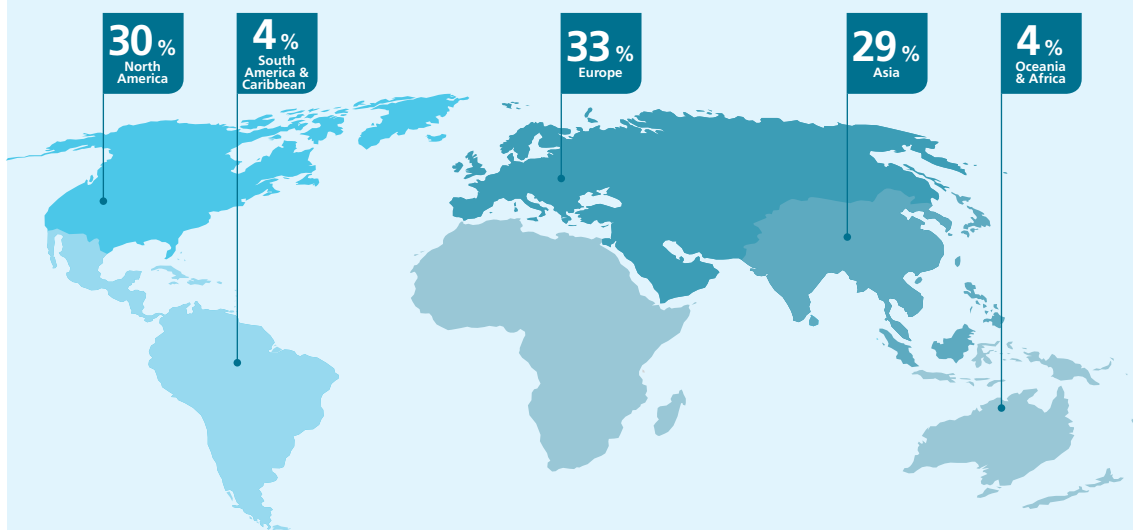
PHIL MILLER
Senior Treaty Underwriter
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Compared to some other classes of business, motor is fairly dependent on the country in which the business is written. Things operate a little bit differently depending on the range and type of companies involved, how they transact business and how that business is handled, from the original policy issuance by insurers through to their reinsurance purchasing philosophy. We are facing the evolution of distribution channels over time, as we move from face-to-face deliberations through to direct

dealing by phone and Internet and the phenomenon of the Internet aggregators.

To help put the European motor insurance market into context, we can see from Figure 1 below that the worldwide life and non-life insurance premiums of circa GBP 3.3 trillion divide fairly evenly: a third from the Americas, a third from Asia and Oceania and a third from Europe.

Figure 1: Distribution of insurance premiums



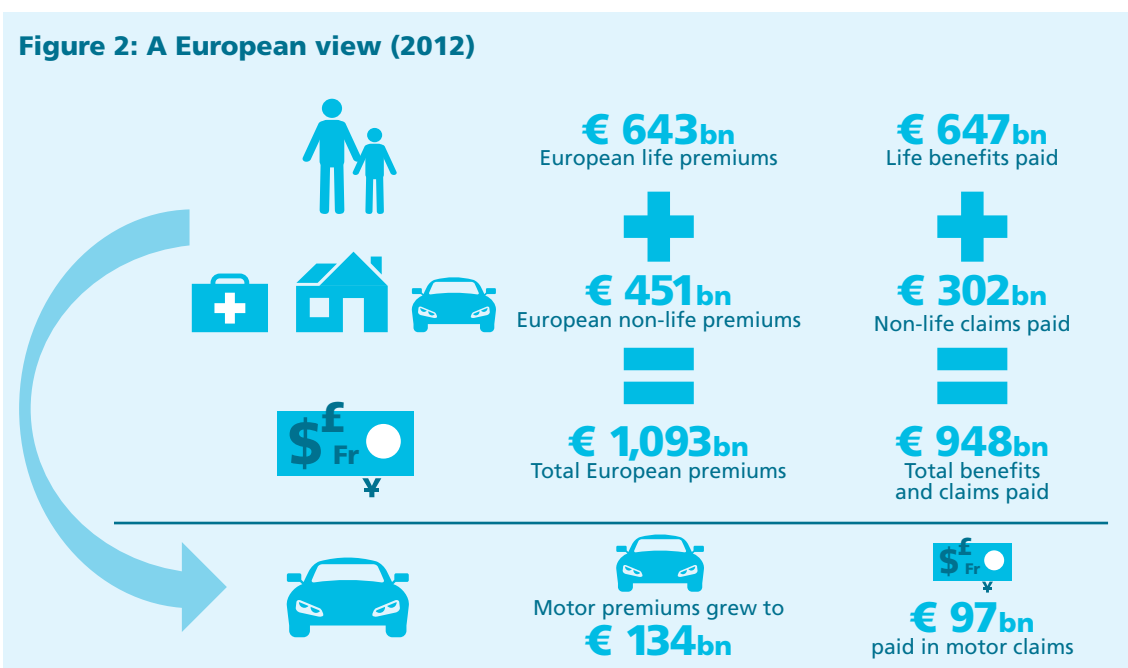
Source: Swiss Re Sigma

Note: "Europe" includes Russia and Ukraine (which together account for less than 1% of worldwide premiums).



If we take a more detailed look at Europe we observe that, for 2012, the life segment represents nearly € 650 billion of the total premiums. The non-life segment, at a little over € 450 billion, spreads across motor, health, property, accident, general liability and other classes (see Figure 2).

The most recognised and complete source of data at the European level is a publication called "Insurance Europe". From this source, we note that motor insurance traditionally accounts for approximately 30%-35% of overall non-life premiums. Third party liability cover is the main influence on the motor insurance market across Europe. Over time it has been made compulsory in every market, in order to protect the victims of road traffic accidents.

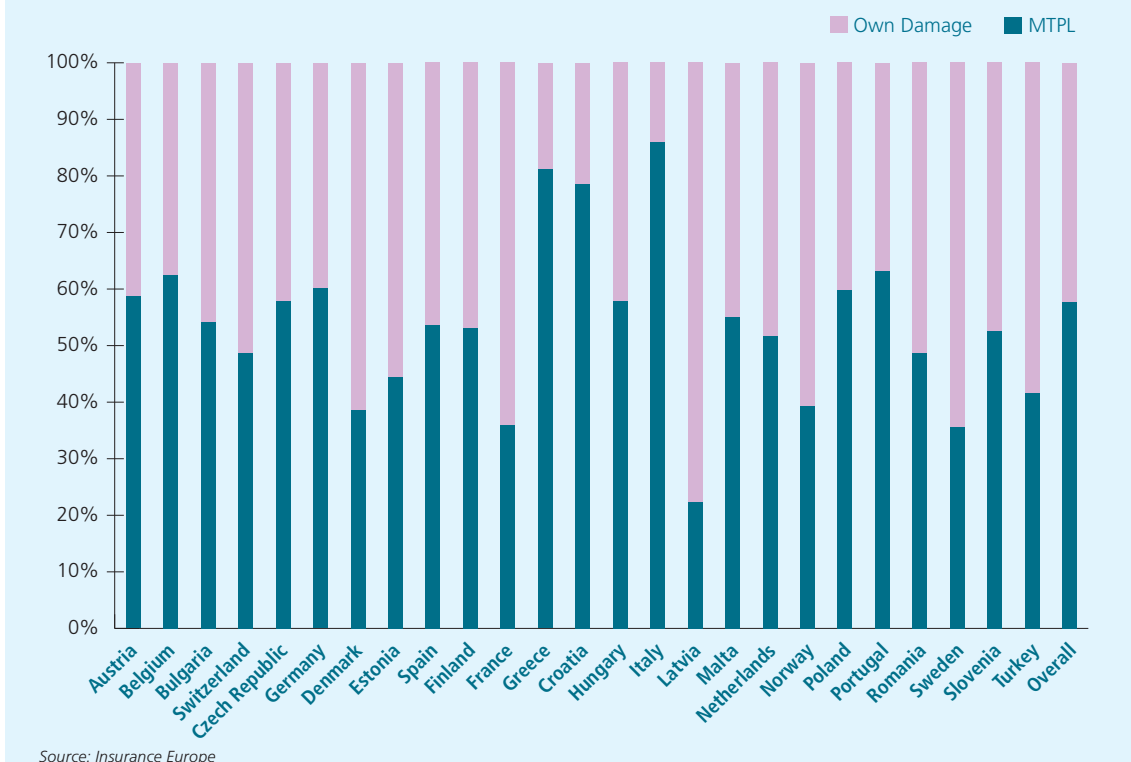


Whilst the basic cover is similar in all countries, there are differences in:

- Insured limits (third party property damage, own damage, third party liability, whether at a per-person and/or per-event level)
- Country jurisdiction practices, approach (e.g. insured vehicle versus policyholder)
- Levels of compensation, methods of compensation and types of distribution.

The aggregated data for the 2012 underwriting year shows an overall motor premium income of € 134 billion for Europe (+0.5% compared to 2011). A European-wide level shows a split in premium as follows: a little under 60% for third party liability and nearly 40% for (property) own damage. These percentages vary quite widely from one country to another (see Figure 3).

Figure 3: Motor third party liability (MTPL) versus motor own damage per country



Sweden and Denmark, for instance, generate relatively low levels of premium from motor third party liability, as the State in these countries gets more involved in compensation mechanisms than in some other western European markets.

If you consider the split by line of business, motor, with € 134 billion premium, has the predominant share,

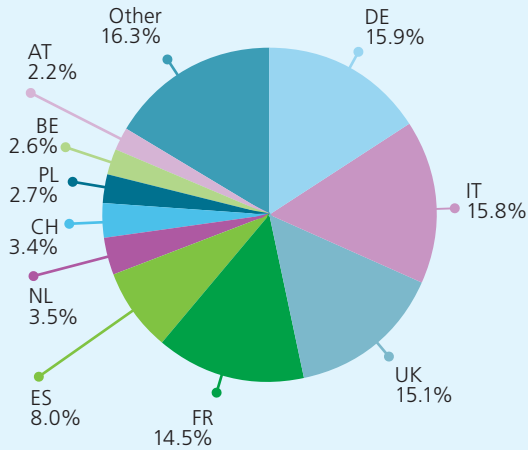
exceeding health and property but not by a huge amount. Over twelve years, motor business has increased by about one percent per annum, which is quite modest. At a country level there are a whole range of features impacting premium volumes, such as population, the number of cars insured and the state of the insurance market, but overall at a Europe-wide level we observe a fairly steady picture.

Country by country perspectives

2011 is the most recent available year with sufficiently detailed data to enable us to draw conclusions. We observe a degree of concentration in terms of where the business comes from. Germany, Italy, the UK and France each produce 15% of the overall business.

Spain is the fifth largest producer, with 8%. These five countries together represent nearly 70% of all European motor premiums (Figure 4). After this, the percentage per country drops off quite steeply.

Figure 4: 2011 Market shares by country at current exchange rates



Why? One explanation could be population size. Germany has the largest population in Europe. France, Italy and the UK are not far behind it. However, if we go further across from Western to Eastern Europe, Turkey, for instance, has a population greater than any other country in Europe (with the exception of Germany) but a very modest premium income when it comes to motor. Similarly, Poland has a population not much smaller than that of Spain, but has a comparatively low premium income. Therefore, this indicator in isolation is not ideal.

If we consider the total average premiums paid per capita, this metric has some advantages and disadvantages as a means of comparison. Whilst the data for the various countries is readily available, it is not that relevant for comparison purposes as it takes no account of either the actual number of vehicles or the insurance policies sold in a given country. For example, Luxembourg and Switzerland have high premiums per capita, but the age and value of their vehicle fleets would heavily influence comparisons with other countries. The indicator shows a very stable picture over time. We chose three years for comparison, 2002 (€209m), 2005 (€231m) and 2011 (€224m).

Figure 5: Average total motor premiums per capita - 2011 (€)



Source: Insurance Europe

We see a wide variation in average values across the different markets; however, the European average is very stable over time (see Figure 5).

Another view is premium as a percentage of gross domestic products. This shifts the results for some of the countries somewhat and actually produces an even more stable analysis. But it is still not particularly useful.

Most people will consider the premiums actually charged for the motor product to be the more reliable metric. Unfortunately, however, the data collection in this regard is relatively incomplete. The five countries we looked at earlier generate the largest pool of insurance premiums. Is this simply because average premiums are high in these countries? And if so, why? Are the higher average premiums simply generating

more profits for the insurers in these countries? We will explore profitability later, but this does not seem likely.

Might the higher premiums be required because the claims burden is higher, and if so, could this be because we are facing a combination of poor cars, poor drivers and/or roads, or is it because the claims themselves cost

more to compensate? If we overlay some observations on frequency we see that the more granular you are, the more you notice that the data set is really not optimal. A number of countries are a long way from producing reliable frequency data. More useful measures of motor performance and analysis are not always available at a country level.

Licensed (and active) insurers, by country

The number of companies licensed to write motor insurance, and the number of those that actually do trade and write motor insurance, are not one and the same thing. There are 5,300 insurance companies in Europe, across all lines of life and non-life business. To analyse motor business in particular, we have first listed all the countries detailed in the main report. But there are a number of countries where the information was not available at the beginning and the end of the time frame, which makes accurate comparison impossible. So if we take these out of the equation, and maintain countries where we have figures for insurers trading between 2002 and 2011, with very few exceptions, the trend is that the number of companies licensed to write motor insurance is dropping by a third on average. The number of insurance companies has actually only increased in two countries: Spain (+11%) and Malta (+90%).

Malta is an interesting example, in a UK and Irish context. In the past, insurance companies would typically set up in a particular country and, to begin with, only write motor business in that country. Once established, they would sometimes diversify geographically, particularly into neighbouring countries. Increasingly now in the UK, we see a number of businesses establishing themselves in other countries within Europe, and under Freedom of Services legislation writing UK- and Irish-domiciled business from these countries. In order to attract inward investment, domiciles such as Malta and Gibraltar tend to have tax-friendly environments. This particular development explains the near doubling of the number of companies based in Malta.

There is a trend towards concentration, and that's not just for companies that have a license but do not necessarily write any motor business. Looking at the proportion of companies that actually do write motor business, the concentration trend is even more marked. In Spain in 2013, for instance, the top five companies secured 62.4% of the market, with the top 25 companies representing almost the entire market (97.3%). Out of 79 companies in total (as measure for 2011), the majority are writing little if any business. They have the licence in place and maintain it just in case.

If we look at one of the largest markets in Europe, the UK, we see a very similar concentration of risk. There are 119 licensed companies there plus between 15 and 20 located outside the UK, principally domiciled in Gibraltar and Malta. The top five represent just over half of the market and again, when you consider the proportion of business taken by the top 25 companies, not much is left. So it would not be unreasonable to assume that a good proportion of the 119 are not actually transacting business. They just keep a license in case they need it in the future, or they have one that they no longer use.

The UK is a somewhat larger-than-average market in terms of its income base, meaning that it leaves room for smaller companies happy to write GBP 25 to 30 million of income. These will not typically participate in mainstream markets like standard private car, but will tend to concentrate on smaller niches where they rely upon their specialist knowledge.

From a European perspective, applying the same principles, out of the 5,300 companies licensed in Europe you could reasonably expect around 10% (i.e. 530) to be writing motor insurance, but actually there are probably closer to about 300.



From face-to-face to phone, internet and aggregators

The "Insurance Europe" study produces interesting numbers about distribution split by country between direct sales, agents, brokers and bancassurance. In a lot of countries, agents and brokers still represent the majority of the distribution. The evolution in UK motor shows how the face-to-face aspect of motor has fallen away to virtually nothing. 1985 marked the beginning of this evolution in terms of distribution in the UK, with the advent of Direct Line, a company that works directly with policyholders – initially solely by phone and now also via the Internet.

Within the last 15 years or so, we have seen the introduction of the aggregators. Motor is the line of business most readily adaptable to this distribution method. It is easier to persuade people to buy the product directly by phone or via the Internet. Home insurance is getting there but not to the same extent. All of the 5 largest markets within western Europe show similar trends, but the ratio between the extent to which people are happy to secure motor insurance through this channel, as opposed to home insurance, is somewhat varied. (see Figure 6)

Buying online can still simply consist of a customer accessing the quotes provided by a single insurance company. If we compare customer behaviour in 2012 to previous years, we see a clear trend towards accessing insurance through the aggregator channel.

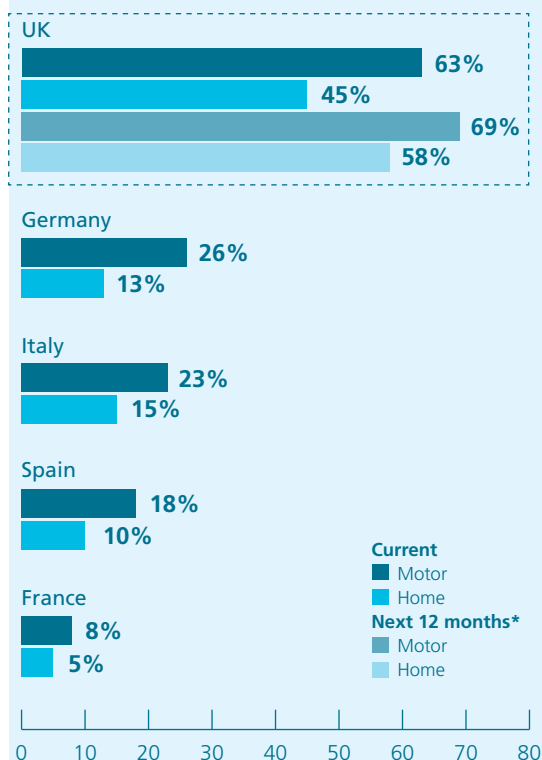
AGGREGATORS

The use of aggregators in a given country is likely to be influenced by the cultural readiness to shop online, and the available existing distribution channels. If countries and markets have particularly higher or lower than average access to the Internet itself, this will obviously influence access to aggregators. From a consumer standpoint, easier access to a larger insurance market tends to drive prices downwards. Aggregators provide a relatively low cost option when the target is to access high volumes of quotes. They have evolved from a relatively simple environment in which insurers charge premiums and pay claims. If the claims they pay are lower than the premiums they receive, the insurers make money. Aggregators have contributed significantly towards an already emerging trend, whereby the insurance profit derived from the difference between premiums received and claims paid is now just a part of the overall financial picture.

New technology allows you to access high volumes of business opportunity. But with these opportunities come threats, because if your systems are not adequate you are much more open to application fraud. The likelihood of a client lying ("white lie") over the phone or on the Internet is higher than in a face-to-face meeting. Companies have increasingly found that they need to spend additional time and money going through quotes to ensure that applicants have supplied sufficiently honest and accurate information, so that the premium eventually charged is representative of the actual risk being underwritten.

On top of this, insurers need to invest in order to stay one step ahead and ensure that their systems are robust; otherwise it can become all too easy to acquire too much business. The ability to create large volumes can lead to portfolio imbalances if mistakes are made.

Figure 6: Percentage of consumers buying online



* Consumers that are planning to renew or purchase a new insurance product in the next 12 months

Source: Accenture's Multi-Channel Distribution Consumer Survey, released in April 2010

Profitability of the line

The measure of performance for which data is most readily and consistently available across various countries is the loss ratio but, of course, this is just the claims part of the picture.

We are missing the acquisition/commission costs of transacting the motor line of business. These will vary somewhat from country to country but have not been shown here as part of this comparison, as they were not available for all countries.

All of the five largest countries, as measured by premium income volume, show close to peak loss ratios in 2009, which may have something to do with the credit crunch

and the tendency to get more fraud coming through the motor line when money is generally tight (see Figure 7 – Loss ratio in %). The UK, one of the most developed markets, tends to be an early adopter of changes in the way business is transacted. This is not always necessarily for the better in terms of the performance of the book. People are always looking for the next way to try to differentiate them from the norm, but this does not guarantee a good performance. The performance of the UK is worse than average and more volatile, with a high loss ratio in 2009 and 2010. Figure 7 shows that performance is apparently better, in general, outside mainstream Western European countries.

Figure 7 – Written premiums and loss ratio



Conclusion

Whilst it could be imagined that motor represents one of the more homogenous classes of insurance business, there are aspects such as quantum of compensation and methods of distribution, which play a part in producing quite divergent financial outcomes for insurers, both on a country-by-country basis but also if we try to draw comparisons between insurers operating

within a single country. We will expand upon a number of these issues in some of the following presentations, which will hopefully convey a better understanding of both the issues themselves and their impact on the financial performance of motor insurers.

2

COMPENSATION AND REPARATION FOR BODILY INJURY CLAIMS IN WESTERN EUROPE

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Compensation for bodily injury claims stands at the crossroads between law, medicine, and the human sciences. It is also at the crossroads between life insurance and property & casualty insurance. Indeed, the most serious bodily injury claims pose the question of long-term care, a familiar term in life insurance. Lastly, compensation for bodily injury is a social indicator. In every country, different choices are made when it comes to the protection granted

to the victim and the rights bestowed on him or her: is the compensation system founded on the notion of fault or no-fault? The information communicated by the markets in the area of claims liquidation allows us to populate our database and make comparisons. This is what we do every year, and it enables us to publish a newsletter devoted to the issue of bodily injuries*. Thanks to our statistical base, we are able today to give you this information.

Where things stand in nine European countries?

In order to rule out any economic influence for this demonstration, nine countries within Europe that have sufficiently close GDP per capita were selected. These nine countries will serve as the basis for the survey: Switzerland, the Netherlands, Austria, Belgium, the United Kingdom, Germany, Spain, France, and Italy (see Figure 1).

In all, 250 million vehicles circulate in these countries and cross national borders. Within their own borders, these vehicles are subject to local laws. It is with the goal of achieving harmony among the legal situations that the various European Union Member States are subject to the recommendations and directives issued by the European Community. Since 1972, six directives, which each Member State must transpose into its domestic legislation, have been handed down.

For vehicles travelling from one country to another that cause accidents, the applicable legal system is regulated by various provisions: for the so-called "green card" system, which was introduced in the nineteen-fifties, general regulations apply: the Hague Convention of 1971 and the Rome II Regulation of 2007. With respect to choice of law, the latter recommends that European countries apply the law of the country where the accident occurs, with the exception of assessing

*For more information visit our website www.scor.com





the economic damage suffered by the victims of these accidents, which must be calculated in accordance with the specific rules in force in the country in which this economic damage applies, i.e. the victim's country of residence. In other words, a British resident who is the victim of a road accident in France will be awarded compensation for economic damage based on English law.

International law in this area is pushing every country to step up the pace of reform for its own domestic

PPOs – Periodical Payment Orders (PPO) or annuities – have emerged in the last ten years or so. In Italy, a decision handed down by the Court of Milan created the notion of “biological damage”. In France, the system of recourse to third-party payers was adapted in 2006. Portugal has created a functional disability scale and a guide for determining compensation. Belgium has revisited its guide-scale and decided to award more to the most seriously disabled victims and less to victims whose injuries are less serious. This is an intelligent

Figure 1: Number of automobiles in circulation (rounded off to the nearest million)



Source: SCOR Global P&C Newsletter on Bodily Injury 2010

law. Different examples corroborate this process. In Germany, the situation of victims between seven and ten years of age has been improved: the notion of fault is no longer applied when it comes to settling the “Schmerzensgeld”, which represents so-called non-pecuniary harm only. A young child will in fact automatically be compensated for this harm, even if he or she is found to be at fault. In the United Kingdom,

option, even though it is difficult for the reinsurer to manage. In Spain, updating the “Baremo” scale is still on the agenda. Overall, though, the scale is working very well in Spain and has put an end to the unequal treatment of victims from one region to the other. In other words, a general trend has emerged and it is pushing the countries of the European Union in the direction of higher damage awards.

A common principle: the Resolution of 1975

The Council of Europe's (75) 7 Resolution, adopted in July of 1975, sets forth the principle of integral reparation – a principle which, moreover, remains to be defined. The resolution also asks that all countries distinguish pecuniary harm or injury from personal harm or injury.

Temporary pecuniary losses consist of expenditures for healthcare, medical expenses, loss of income from employment, temporary human assistance, funeral and

burial costs in the event of death, legal fees, and other miscellaneous costs. Permanent pecuniary losses refer to what the victim will require for the rest of his or her life: future healthcare expenditures, future loss of income, human assistance, expenditures for vehicle and home adjustments, etc. Temporary non-pecuniary harm is limited to functional deficit only. Lastly, permanent disability and non-pecuniary harm are classified as permanent extra-pecuniary heads of damage.

Compensation and reparation: the major trends

To ensure a clear understanding, it is necessary to briefly revisit etymology. The Latin root for indemnify means “render without loss”, while the Latin root for repair means “render same or equal”. Clearly, we are talking about two distinct notions. Repair or reparation consists of providing assistance, services, counselling, etc. All of these actions will be provided through private and/or collective initiatives via social agencies, depending on the country. As for the indemnity or compensation, it is always purely financial.

In the nine countries studied, case management and professional rehabilitation are not at the same level. Case management is a global approach that seeks to reintegrate a seriously injured victim with respect to his or her family as well as society at large. This approach involves doctors, physical therapists, psychotherapists, social workers, etc. This multidisciplinary approach will

be coordinated by the case manager, who is totally independent with respect to the various parties. This system was first tried with success in Quebec and in Israel. Today, some European countries have adopted it, via public or private initiatives (see Figure 2).

In the area of professional rehabilitation, the objective is to enable a seriously injured victim to re-enter the workforce in some capacity, so that he or she becomes an income earner once again and hence resumes paying into the social security system. Supported by private and public incentives, this form of rehabilitation has already been developed throughout Northern Europe, particularly in Germany, Austria, and Switzerland. In Germany, for example, more than two-thirds of German accident victims who have completed this professional rehabilitation program return to work – a remarkable rate of success.

Figure 2: Case management and professional rehabilitation in Europe

Country	Case management		Work rehabilitation	
	Social Security	Private initiatives	Social security	Private initiatives
United Kingdom			✓	
Netherlands	✓	✓	✓	✓
Belgium	✓	✓	✓	✓
Germany	✓	✓	✓	✓
Austria	✓	✓	✓	✓
Switzerland	✓	✓	✓	✓
France			✓	
Italy			✓	
Spain				

Source: Technical Newsletter SCOR Global P&C 2010 The European Market and Motor Third Party Liability.

In addition, it is important to consider other factors if we want to compare one country's compensation system with that of another: the level of insurance coverage is one distinguishing criterion, between limited and unlimited coverage. Another factor is whether or not there is social agency recourse. And it is possible to reopen claims cases for aggravation in some countries. In the case of unlimited coverage, insurers are confronted with greater uncertainty. But the existence of a cap or ceiling can be problematic, for example

when the rights of the victim compete with those of social agencies. There are two solutions in place when it comes to social agency recourse.

In the first solution, any costs relating to welfare benefits, medical expenses, daily allowances, etc., are assigned to the insurer of the person responsible for the accident, and are therefore met by the policyholders of that insurer. In the second solution, these costs are financed on a national scale, by all taxpayers (see Figure 3).

Figure 3: Compensation systems in Europe

Country	Minimum coverage of bodily injury per event	Social Agencies Claims	Reopening the file in case of aggravation
United Kingdom	Unlimited	Partly	No
Netherlands	€ 5 M	Partly	Yes
Belgium	Unlimited	Yes	Yes
Germany	€ 7.5 M	Yes	Yes
Austria	€ 5 M	Yes	Yes
Switzerland	€ 31.8 M	Yes	Yes
France	Unlimited	Yes	Yes
Italy	€ 5 M	No	No
Spain	€ 70 M	Partly	Yes

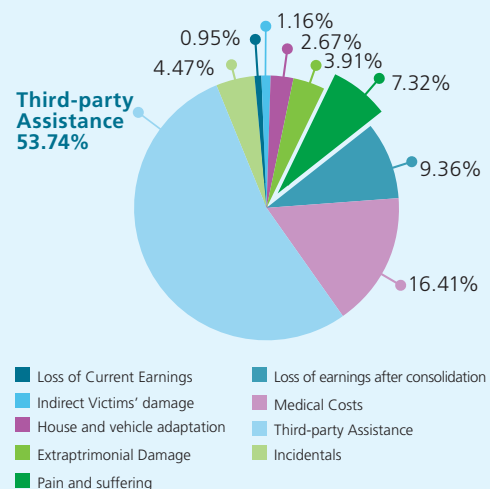
Source: Technical Newsletter SCOR Global P&C 2010 & 2013 The European Market and Motor Third Party Liability

France, an example of legal uncertainty

Every country in Europe applies the principle of integral reparation, even if the definition of reparation does not exist. In France, the notion made its first appearance in 1954 in a Court of Cassation order. With regard to the SCOR database, the level of compensation went from 100 in 2001 to 260 in 2011, while over the same period GDP remained flat and economic inflation was contained. The various heads of damage were multiplied, subdivided, and increased. This market suffers from legal uncertainty and it is becoming difficult to calculate premiums in this context, for insurers and reinsurers alike. For serious bodily injury claims (paraplegics, tetraplegics, cranial trauma, etc.) in France, the majority of the compensation granted is spent on human assistance, which accounts for nearly 54% of the total cost of the claim (see Figure 4).

The hourly cost of this third party has increased significantly. The victim is not required to justify the need to hire. Compensation is evaluated freely by the judge, without recourse to receipts for expenses incurred.

Fig. 4: Bodily injury cost breakdown by head of damage (2010-2011)

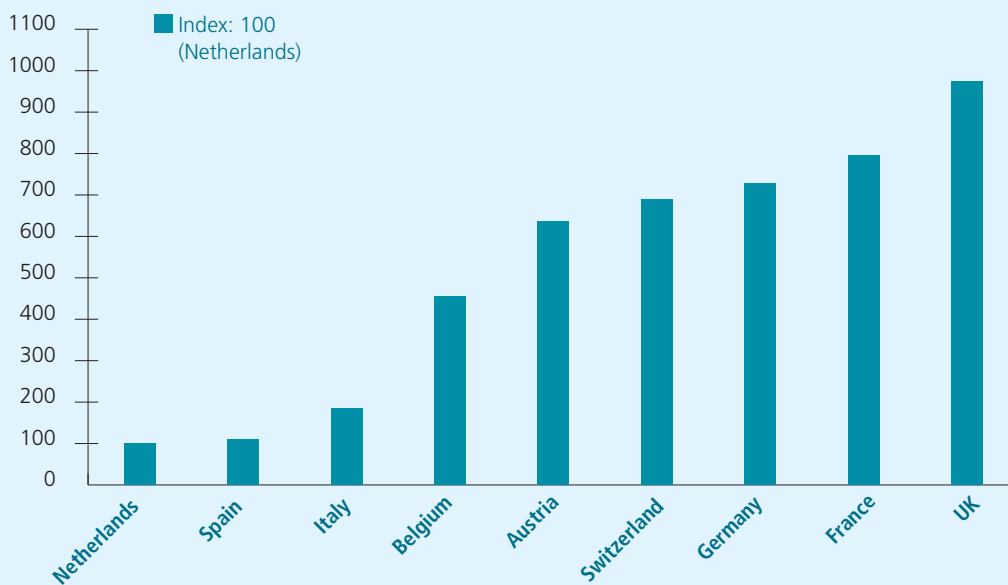


Source: Technical Newsletter SCOR Global P&C 2013 on Bodily Injury

This is certainly one of the reasons for the volatility observed. Similarly, household adaptations intended to increase the individual's autonomy and reduce the need for human assistance are not taken into account. Comparing the cost of an injury that results in a thirty year old man becoming tetraplegic is enlightening. The cost index for this claim (see figure5) is lowest in the Netherlands (100), followed by Spain: in both of these countries, social agency compensation does not exist and the insurer indemnifies the victim only. Thanks to its Baremo, Spain manages to contain inflation in the cost of compensation. The situation is the same in Italy and in Belgium, where compensation remains at acceptable levels. Belgium has an efficient system pertaining to the assessment of damage – thanks to precise medical expert examinations and opinions – and in the area of compensation thanks to very detailed guidelines.

Next come Austria, Switzerland, and Germany. Professional rehabilitation programs in these countries are bearing fruit: instead of granting the victim all of his or her income in advance for the duration of his or her life, an attempt is made to find a solution that allows for a return to work. The situation in France is volatile, with compensation varying with both the appeal court and the region. The system is not adequately regulated. Lastly, the United Kingdom grants the victim higher compensation than is observed elsewhere and makes the insurer cover all of the legal costs incurred by the victim. In fact, discussion is underway in the United Kingdom aimed at regulating legal fees, which can be very high.

Figure 5: Level of compensation for a quadriplegic male victim



Source: SCOR Newsletter 2013 on Bodily Injury

Taking the best from each country

For the future, what would be the ideal framework in the area of compensation and reparation for serious bodily injury claims? A "pick and choose" approach from the various States would allow us to share best practice and reach a degree of harmony that, for the time being, still seems very far off.

In this context, where multiple rules coexist, SCOR intends to focus its expertise with respect to these issues in such a way as to be ready to offer quality advice to its clients and anticipate the changes to come.

3

THE IMPACT OF TELEMATICS ON THE MOTOR INSURANCE BUSINESS MODEL

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PTOLEMUS Consulting Group

“Telematics” is the generic word used to define connectivity and geolocation for vehicles (cars, trucks, containers, trains, etc.).

What is insurance telematics or Usage-Based Insurance (UBI)? Most underwriters currently use static and statistical criteria such as age, gender, vehicle age, place, business category and occupation to evaluate drivers’ risks. The historical claims profile is also taken into account. Telematics insurance is a policy based on these criteria and four new dynamic parameters: distance, time (afternoon, night-time, etc.), place (motorway, road, big or small city, parking area) and driving behaviour (see Figure 1).

PRESENTATION OF PTOLEMUS

PTOLEMUS is a strategy consulting firm that helps its clients with a wide range of topics relating to telematics and geolocation. These can range from strategy definition, investment assistance, procurement strategy and innovation management to business development and implementation. PTOLEMUS assists all stakeholders in the mobility ecosystem: insurers, aggregators, assistance providers, telecom operators, telecom infrastructure suppliers, consumer electronics makers, positioning solution providers, OEMs and telematics vendors, content and application providers, ITS operators and regulators, fleets and financiers.



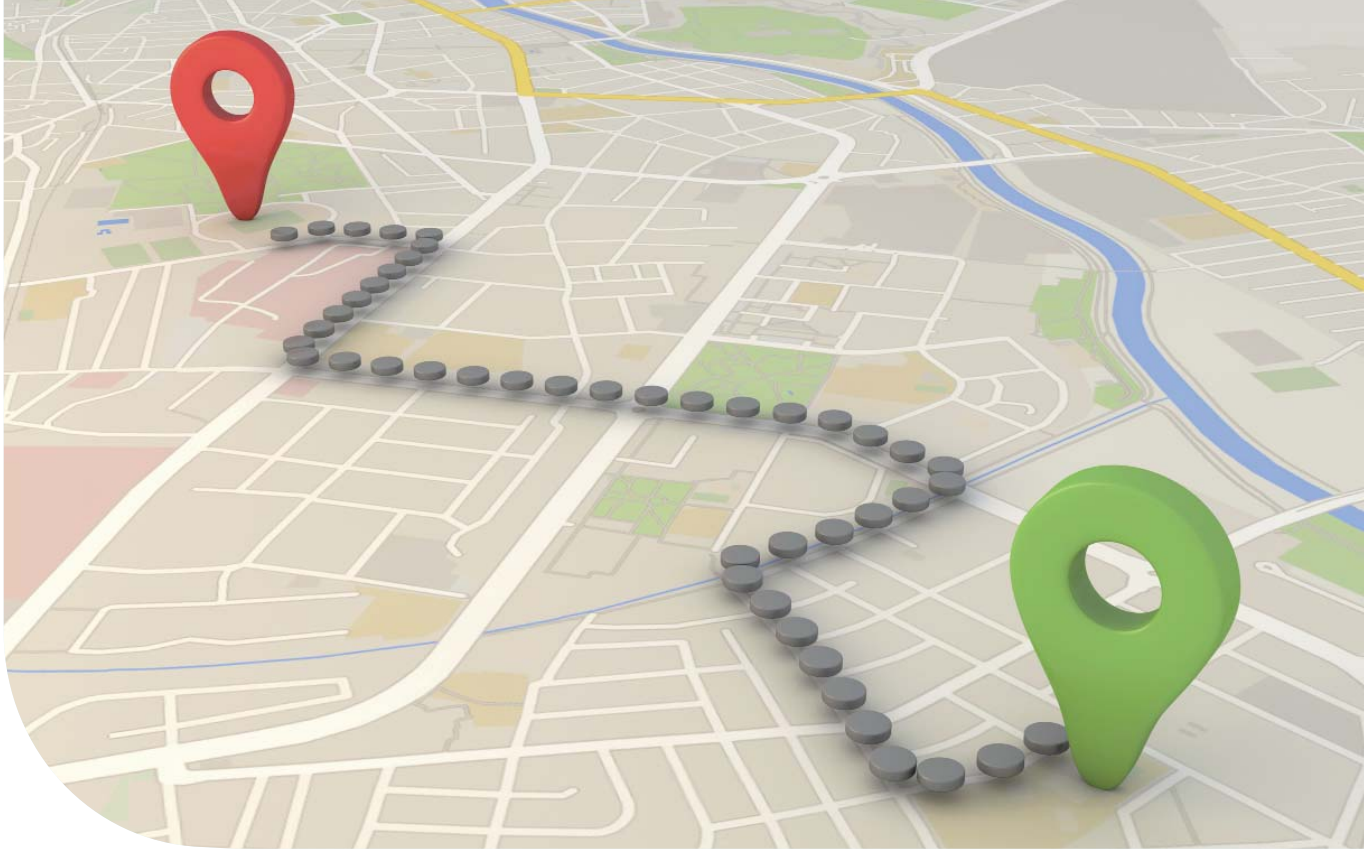
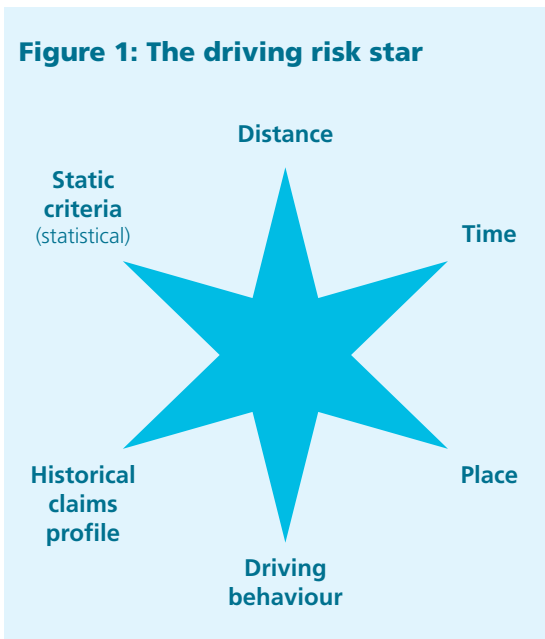


Figure 1: The driving risk star



PTOLEMUS has published the “Usage-Based Insurance Global Study”, one of the most comprehensive reports available on the telematics revolution*.

Today’s current motor insurance, without telematics, is not comprehensive, as it does not take the driver’s behaviour into account. There are a wide variety of telematic insurance models, each of which integrates different levels of connectivity to the vehicle. For instance, “pay as you drive” (PAYD) uses the registered distance travelled

and the geographical zone. In telematics, “pay how you drive” (PHYD) refers to the driving behaviour plus PAYD. Various telematics-based services have been offered by insurers for almost 15 years now, such as stolen vehicle recovery, safety services and crash forensics, but they have never benefitted from major driving behaviour monitoring capabilities. Moreover, we have seen other methods to take mileage into consideration based on self-reporting by the drivers in so-called “pay-per-mile” policies. However, these policies are subject to fraud and do not give any indication of the context in which the driving took place.

For these reasons, telematics is growing rapidly, up to the point where it will gradually filter into the mainstream motor insurance procedures in all countries. Although representing only a tiny share of global insurance figures, we currently estimate UBI policies to have already reached 5.5 million worldwide. Three countries are clearly ahead: the United States, where telematics began in 1997, followed by Italy in 2003 and the UK in 2007.

Italy is the most advanced country in the world for telematics, with penetration exceeding 5% in 2013. A good way to assess future insurer telematics activities is to look at the buying trend of our insurance telematics report (UBI Global Study). We expect UBI to reach new markets, notably in Asia (China, Japan, and South Korea).

A major factor encouraging the development of telematics is high-premium environments, since they allow insurers to amortize the price of a telematics device through higher premiums and higher claims. It goes without saying that the five leading countries are all high premium markets.

* For more information visit www.ptolemus.com/ubi-study/

Telematics challenges or why it should work

Different markets have to cope with different telematics challenges, ranging from economics, technology solutions, marketing strategy and sufficient data for scoring, to channels and customer privacy (or rather the perception of privacy-related issues). Nevertheless,

despite these challenges, which are listed in Figure 2, the number of insurers exploring the best way to apply telematics, and launching telematics programs, is growing fast.

Figure 2: Challenges faced by insurers in terms of launching UBI

		Italy	UK	France	Germany	Spain	Russia
2014	Business case	●	●	●	●	●	●
	Technology solution	●	●	●	●	●	●
	Marketing strategy	●	●	●	●	●	●
	Sufficient data for scoring	●	●	●	●	●	●
	Channels	●	●	●	●	●	●
	Customer privacy*	●	●	●	●	●	●

Source: Ptolemus. Note* or perception of privacy-related issues.

Some insurers, particularly in Italy, have introduced telematics without behaviour, in order to focus on issues relating to theft and fraud. These insurance companies use an embedded device, generally installed behind the dashboard, which records data in real time. In Europe,

the so-called black box has become the dominant model for telematics, as it permits applications such as eCall (emergency call) and crash forensics, and facilitates the fight against fraud and theft.

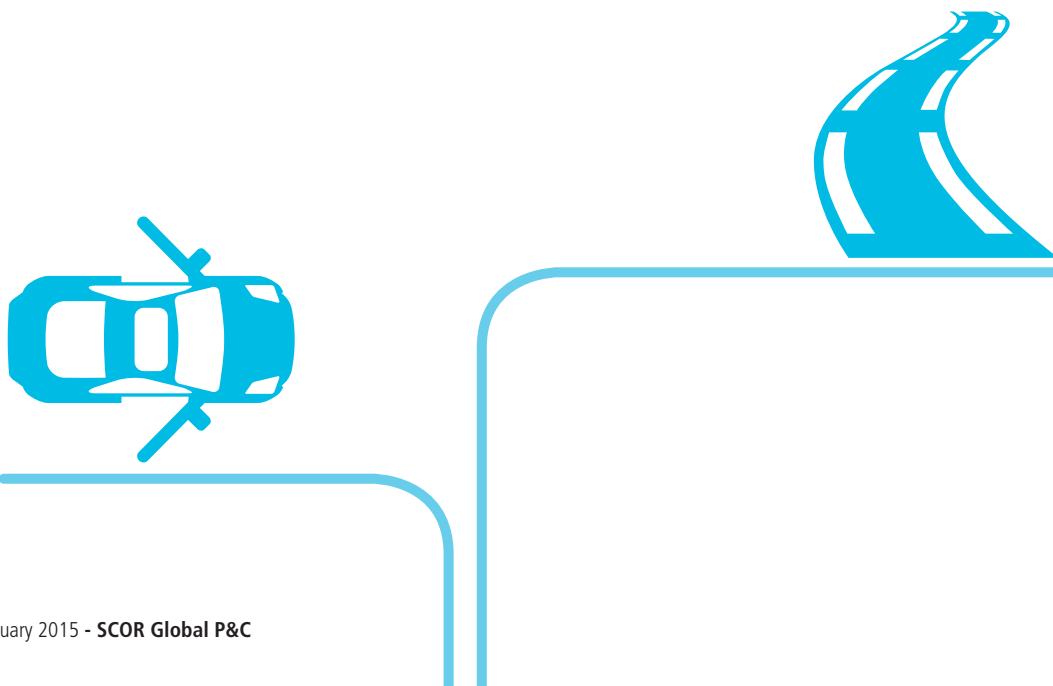
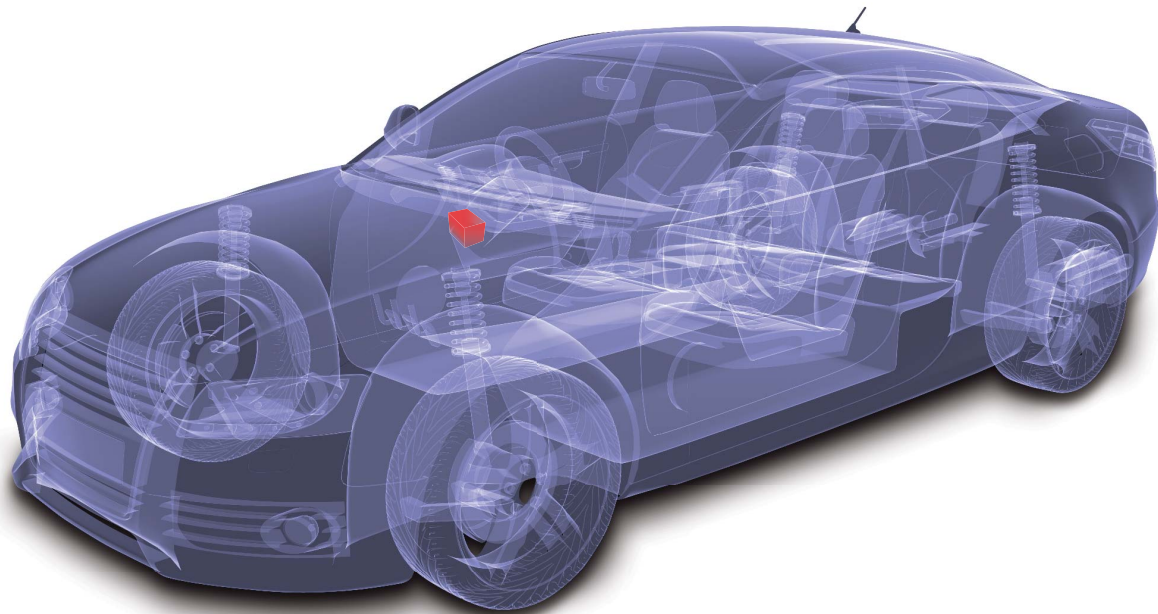


Figure 3: A black box can be installed behind the dashboard by a professional technician



Some companies are focusing instead on pay-as-you-drive, for example Amaguiz in France. Autoline, an Irish broker, uses smartphones, a lighter version of telematics, as smartphones do not currently include permanent recording. Progressive Insurance, in the

US, uses an OBD dongle, i.e. a small box plugged into the vehicle's On-Board Diagnostics port. This is still light telematics, as the box is removed after the data collection phase (3-6 months) and does not record geolocation or mileage.

Market imbalances

We observe many imbalances in European motor insurance markets. In the UK for instance, 90% of the market consists of comprehensive insurance – a UK tradition. In this market, looking for liability insurance means paying higher premiums for the same types of cover – mainly because the buyer is considered to be low financial profile, and thus high risk. These imbalances are firmly established, but telematics is likely to gradually eliminate them because it is based on understanding actual individual driving risks rather than statistical proxies.

That being said, this change will only come about if customers see the benefits involved. In the UK, 40% of insureds surveyed in 2012 said that they were ready to use telematics.

Another driver behind the further demand for telematics is the decreasing cost of the technology involved. The cost of this technology has actually divided by almost 10 within the last 12 to 15 years, with a black box falling in price from € 500 to € 50. These cost savings are even greater when customers use smartphones for data collection, as this represents a free investment for insurers.

The economic crisis is also moving things forward, especially in Europe and North America where people may be willing to change their buying habits in order to reduce their costs. The regulatory framework also has an influence on behaviour: “eCall” is a European initiative designed to bring rapid assistance to motorists involved in a collision

anywhere in the European Union. Moreover, all new car models will have to be equipped with a telematic device for emergency calls by 2017. Another driver is a decision made by the European Court of Justice: the gender ruling, which forbids the use of gender as a rating factor in the European Union. This could open the door to similar justice decisions on other rating factors, such as age for example. Telematics technology could offset these measures in the future by helping to detect risky behaviours.

Telematics revolutionises the way in which we measure risks. According to Progressive Insurance, driving behaviour has become its most predictive rating variable ever. Moreover, in the future, telematics will provide data that is not yet or not easily accessible: weather, traffic jams, parking availability, tyre pressure, etc. We can definitely talk of a “gold rush”, as insurers are very keen to acquire this high quality data. Moreover, vehicles host fresh, sensitive, high value data, which also creates new service provision opportunities.

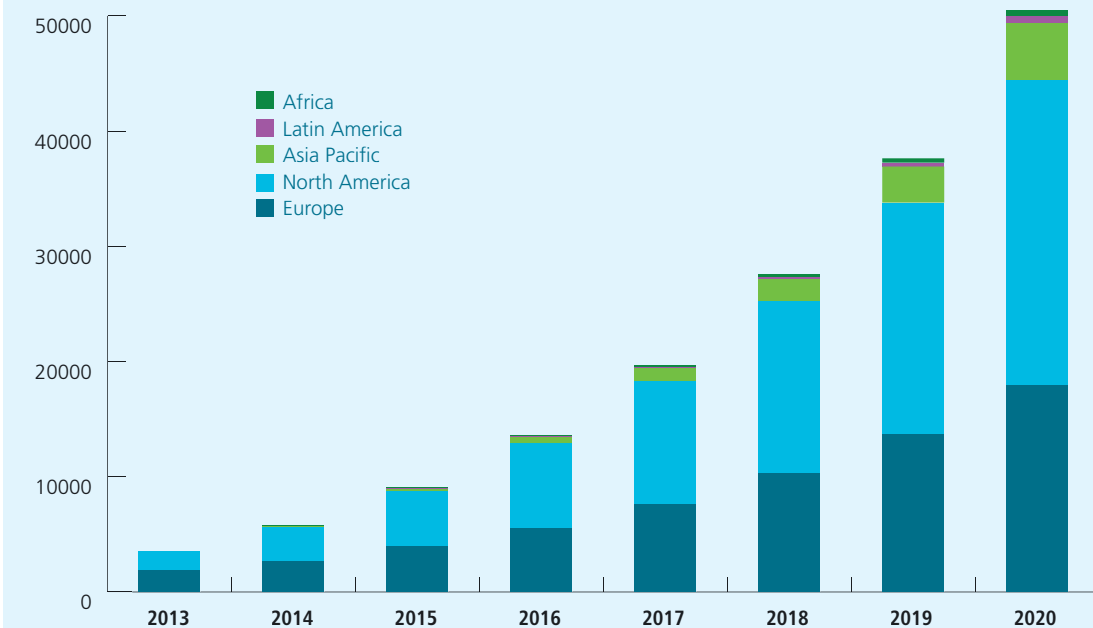
Another important factor is the low entry barrier to telematics, as an insurer does not need financial clout to launch an innovative telematic model. In June 2012, Autoline, a Northern Ireland broker, was the first worldwide to use a smartphone application to record driving behaviour data and calculate drivers' scores on a scale of 1-100. It promised discounts of up to 40% for application users and up to 50% for safe drivers. These telematic policies were underwritten by a panel of insurers. In October 2013, the company announced a reduction of over 50% in claims by telematics customers, compared to policyholders with the same profiles who did not use telematics. There are two possible explanations behind this 50% reduction: on the one hand recorded driving could encourage drivers to behave more cautiously, and on the other hand a reckless driver wouldn't use such a device, thus increasing the quality of users by default (self-selection). These results are particularly impressive if we consider that the device used is a simple smartphone application, and its use is not compulsory for all trips.

€ 50 billion in 2020

UBI is the fastest growing segment in motor insurance. The market premiums generated from telematic policies could reach € 50 billion in 2020. Figure 4 illustrates the forecasted market premiums generated from telematic

policies. Note that our forecasts are very conservative in the emerging markets, and that Asia could grow even faster than initially anticipated.

Figure 4: Market premiums generated from telematic policies (€ millions)



Source: Ptolemus.

Currently, risks are not properly priced by the market. By comparing premium quotes in Italy, we observe an astonishing gap between the lowest and the highest quotes for the same profile. This means that the market is still inefficient, as insurers do not have a single-person risk profile but rather a statistical or at best a historical risk profile. They look at categories instead of individuals, and when they do look at individuals, they look at the past, which is often a poor predictor.

Another interesting example comes from the books of European insurers. Their claims ratios based on age are pretty low for young drivers and pretty high for senior drivers. Surprisingly, European insurers do not use this information to increase their market share in the young drivers market.

Telematics brings a new paradigm to motor insurance and offers new ways to improve portfolio management issues. Telematics could support insurers in their efforts to provide protection and prevention and help drivers to reduce their accident risks. Studies show that 80% of surveyed drivers perceive themselves as good drivers, but that most people are unaware of the level of risk they actually take or create. Having telematics assessing one's driving behaviour has a direct impact on lowering these risks.

As it stands the industry only gives discounts for past risks, not current risks. In other words, if you have been a good driver, insurers automatically apply the idea that you will continue to be a good driver. We all know of drivers who have good driving skills but drive very aggressively due to a high level of confidence. Very often they do not have accidents for long periods, but when a crash does occur the loss can be very high. Telematics should bring another level of driving understanding by giving insurers real-time visibility on risks, crashes and thefts, which means that they can instantly model the driver's future driving behaviour.

Insurers are often viewed with mistrust in the UK, which means that drivers sometimes feel ripped off and are consequently more inclined to commit insurance fraud. Telematics will align the interests of each party, as the whole system is based on the principle of "the better you drive, the less you pay". On the insurer's side, this means receiving perpetually lower premiums, but all things being equal, also perpetually fewer claims, leading to increased profits. It is therefore fair to say that telematics could be considered a win-win model.

Numerous advantages

The advantages of telematics are numerous: improved underwriting, self-selection, more accurate pricing, smart renewal, longer lifetime, reduced losses, better claims management, less driving, value added services, and so on.

The telematics business case depends essentially on the reduction of claims costs. For a standard customer in a very competitive market such as France, premiums are relatively low. However, many telematic insurers have indicated that telematics helps to increase customer loyalty and policy duration.

Services such as bCall (geolocated roadside assistance), remote vehicle diagnostics & prognostics are the most unexplored paths of telematics – particularly in the US – but they should help to improve the value provided to the customer. Nevertheless, the bulk of the improvement lies in the reduction in claims frequency and severity. Of course the customer must be rewarded for providing personal driving information and the insurer has to pay for the telematics costs, but at the end of the day a customer using telematics can provide the insurer with a positive cash-flow, provided that the telematics device costs are commensurate with the expected reduction in losses.

The overall telematics business case can be negatively affected by two types of customers: "dangerous drivers" who believe that their driving is actually good, and customers who buy telematics online without properly understanding what is involved, and then withdraw their policies once they do understand. The latter category causes unnecessary costs for insurers because it pushes them into investing in devices for customers who cancel their policies soon after inception. These potentially wasted costs represent the biggest challenge for insurance companies. In fact, an insurance company has to invest in a customer in order to find out his driving behaviour. Numerous UK insurers have therefore launched "pre-selection" smartphone apps.



Detecting safe drivers

The challenge is to determine whether a driver is “safe”. There are dozens of implementation issues to tackle in this regard: what data should be collected? How often? From which source (black box in the car, or phone)? Is mileage a good proxy for risk? Is harsh braking frequency a symptom of dangerous driving? Should over-speeding be penalised? How should a harsh acceleration event be defined? Should a Fiat Panda be given the same threshold as a Ferrari? Is more data always better? How should data be compared from a black box and from a smartphone? Experience in terms of addressing these issues will be of paramount importance for the development of telematics.

We recommend a few principles to insurers when starting such a program. It is important to thoroughly understand the complex technology involved, while implementing it in a simple way. In the United States, telematics insurers can store plenty of information, which will eventually lead to pricing advantages.

However, policyholders may not always accept this. In the EU, companies have the right to store only the information they need. The Data Protection Directive obliges European underwriters to tell users what data they are recording, why they are doing so and what such recording implies: users must give their consent, as unauthorised recording is not permitted.

The amount of data accessible to insurers is so extensive that pricing models can practicably reach perfection. Obviously, however, customers do not see things in the same way. This means that actuaries need to make shortcuts in the way they determine prices. Insurers need to gain experience in terms of what data impacts their claims the most.

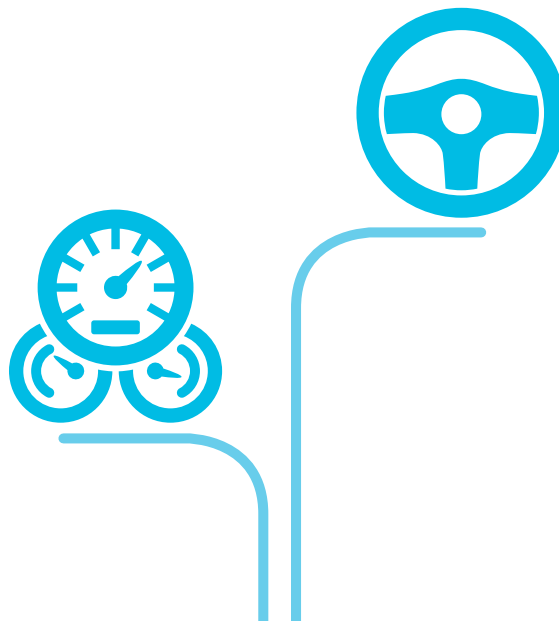
This is a new model, so we encourage insurers to say what they do and do what they say “vis-à-vis” their customers, in order to align insurer and customer interests.

Practical issues

There are many ways to set up a privacy framework. Today privacy often enters the game as an afterthought, after the telematic device supplier has been selected. One way to create trust may be to use the On Board Unit (OBU) to create an intermediate score. The data is sent to the insurer's server and removed after a year, the insurer keeping only the score.

Another issue is the mix of policyholders. For example, in the UK, telematics is primarily applied to high risk drivers, who will generate high premiums and high claims. Therefore, a telematics-only insurer could end up having higher claims than the industry average because its mix is going to be biased. This is an important factor to take into account while working on the business plan.

Telematics has a key advantage in terms of understanding driving patterns, in that new generations of drivers are less likely to be concerned about technological privacy issues, given the ongoing expansion of technological devices in general. However, the targeted portfolio should not be limited to young drivers as the imbalance between young/older drivers would lower opportunities for higher premium income. There are a number of new non-standard segments that should be considered, e.g. safety-conscious drivers, senior drivers, low mileage drivers, learner drivers, motorcycle drivers, van drivers and commercial fleets.



Insurers and car makers

One issue that should be raised regards the future position of insurers towards car makers. Renault recently announced that every new vehicle with an R-Link device would be associated with PAYD this year and PHYD next year. Volvo, Rover and PSA Peugeot Citroën have also launched or announced similar schemes.

The truth of the matter is that insurance companies will have to position themselves as car services providers, in order to offer not just insurance but also an improved driving experience. Motor insurance will be just a tiny part of a bigger picture, as the automotive business model will encompass the motor insurance business. The car connectivity trend offers a platform from which to deliver many services in a very simple manner, particularly via the internet. Within the next ten years, insurers will probably have to choose between providing a wide range of services or having to cope with the possibility of withdrawing from motor insurance.

Claims reduction is just one of the many benefits telematics can provide. We have identified 17 ways to reduce claims using telematics: sale selection, accurate risk evaluation, measurement effect, mileage incentive, driver feedback, and so on.

Across different markets, we expect the entry barriers to UBI to diminish. Early players in this market will benefit from more data, enabling them to provide better underwriting. Not all technology models are born equal: black boxes, which record data permanently, provide more data to insurers than temporary dongles or smartphones. Certain navigation companies such as TomTom – or even Google – could also be well placed to evaluate driving behaviour. (Figure 5)

Figure 5: Recorded driving behaviour data (kilometers in billions)

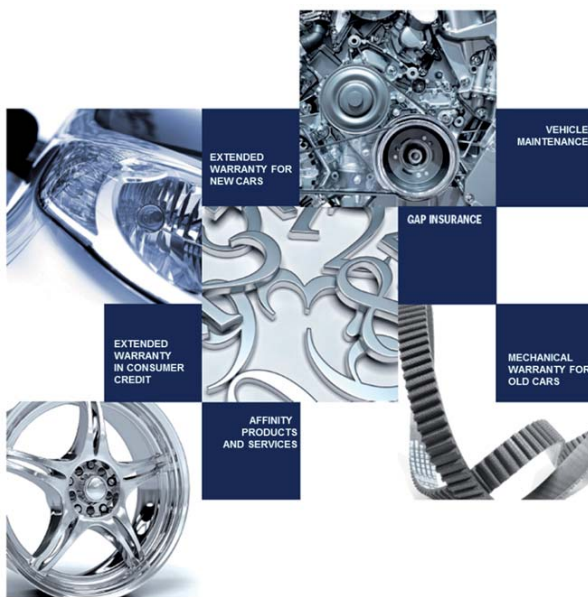


Telematics will fundamentally change motor insurers' business models and, to a certain extent, reinsurers' business models as well. The telematics business is still in its infancy: Italy, the leader in the use of telematics, has a penetration rate of just 5%. How many insurers have fully leveraged telematics to improve their management of claims? The insurer's business model is entering a

new world: dynamic underwriting. Insurers can not only select risks but also influence them. This also means that if insurers choose to ignore new technologies, they do so at their own risk. Consequently, we recommend that insurers get on the data collection and management experience curve as soon as possible.

MOTOR INSURANCE SOLUTIONS: MECHANICAL BREAKDOWN INSURANCE

BRUNO LABUZAN
Chief Executive Officer
CAAREA



LA GARANTIE DE L'AUTOMOBILE

PRESENTATION OF CAAREA

Compagnie Automobile d'Assurance et de Réassurance Associées (CAAREA), which counts SCOR among its shareholders, is an insurance and reinsurance underwriting and claims management company specialising in new products, new services, and new businesses in the automotive industry. Working on behalf of its partners, CAAREA elaborates turnkey solutions that respond to their performance objectives and their strategic challenges by bringing added value throughout the life of the product: elaboration, design, management, and distribution. CAAREA integrates all of these aspects into its offers.



Targeted value added

Talking about the CAAREA vision in the area of motor insurance coverage comes down to reasoning in terms of needs: the car, its use day-to-day, the investment it represents, and its drivers and passengers. The company's goal is to change the world of the automobile. As new markets respond to new needs, CAAREA works not just in Europe but also around the globe, with a strong presence in the emerging countries. The first response to these needs has resulted today in mechanical breakdown and maintenance products, distributed individually or packaged.

CAAREA's partners represent a broad and diversified panel composed of four families:

- insurers, assistance providers, and bank-insurers;
- banks and other lenders;
- auto manufacturers and their networks;
- new web-based distributors.

For each of these families, CAAREA elaborates specific product ranges that are aligned with their needs and expectations: taking charge of the vehicle's electrical and electronic mechanisms, upkeep and maintenance contracts, etc.

Via its range of products and services, here are some examples of what CAAREA offers:

- An enhancement of automobile insurance with the addition of mechanical breakdown coverage, which transforms motor coverage into genuine all risks (comprehensive) cover

- The elimination of unexpected expenses for the borrower, thanks to mechanical breakdown coverage or a maintenance contract that spans the duration of the loan/finance lease
- Extensions of warranty on new vehicles sold by automakers, increasing the legal warranty by twelve, twenty-four or thirty-six months
- Certified coverage for twelve or twenty-four months offered by the dealer on used cars
- Increasing new distribution via the web



Customer loyalty/retention

CAAREA's products are designed to respond to the specific needs of various players in the automotive world, with strong consideration for the distribution network and the end customer, the motorist who drives the car.

For **insurers, bank-insurers and assistance providers**, enriching a motor insurance policy with the addition of mechanical breakdown coverage means offering the insured new coverage that is aligned with the life cycle of his or her vehicle.

Auto insurance underwriters offer "all risks" (comprehensive) coverage. Integrating mechanical breakdown coverage into a comprehensive policy makes it more complete and justifies the notion of service claimed by the insurer. After a breakdown—whether or not it immobilizes the vehicle—the assistance provider organises the repatriation of the vehicle and ensures that it is dropped off at a garage for repair. Today, that's where the insurer's service ends.

CAAREA proposes that the insurer accompany its insured and pursue its customer service without interruption, by taking charge of organizing the repair and consecutive compensation.

Another objective for the insurer is to anticipate the risks of policy termination. This is a goal that CAAREA addresses in the "sell worry-free" package it has devised. For individual car owners, selling their vehicle to another person means getting a higher price. But the buyer is worried and prefers to go to his or her local car dealer, who provides a warranty. Some insurers offer their clients a sort of "sell worry-free" cover that offers the buyer of the vehicle of the insured a three or six-month warranty, provided that the seller insured by the company remains committed to his or her new car.



For **bank-insurers**, an additional advantage lies in aligning the term of the loan/finance lease with that of the motor insurance policy. Here again, the bond with the customer is strengthened. While insurance companies generally only communicate with their customers via premium payment or claims notices, marketing products make it possible to keep the flow of communication open all year and thus strengthen the bond of loyalty.

For **financing specialists**, mechanical breakdown coverage is very easy to put in place by simply integrating the premium in the monthly loan repayment. The principal is protected and unforeseen expenses are covered for the term of the loan, which is reassuring for the borrower. For the lender, this means preserving the initial term of the loan rather than facing early repayment. There are many buyers who could pay cash for their car but who opt for a loan in order to benefit from the coverage for five or six years.

For **auto manufacturers**, the challenge is to keep customers coming back to their dealerships. If maintenance and repair work is done there, this brings additional revenue to the dealers, from both parts sold and labour hours billed. Here, motor insurance is a source of revenue as well as a tool for building loyalty that leads to a new sale. It also showcases the quality image of the brand. This is the case, for example, with certification labels on used cars, which offer the additional advantage of increasing the residual value of these vehicles, a central strategic goal for automakers. Thus, some car manufacturers, for example, include a particularly strong warranty on their used cars. These cars in turn fetch a high price and the sticker price for new vehicles is also increased.

Lastly, with the **new distribution channels** – the Internet chief amongst them – offers on new vehicles with substantial discounts have appeared, along with online used car marketplaces. For each vehicle on offer, there are now extensions of warranty similar to what auto manufacturers offer. The result is an increase in website traffic, and hence value, bringing additional revenue to the organizers of these sales.

Custom-built products

The expertise of SCOR and CAAREA begins with design and runs through to production and distribution, in order to create turnkey offers. This expertise resides in three technical areas – design, protection and management – and two areas related to distribution – marketing and training. All of these areas of expertise are required to ensure that the objectives are reached.

KNOW THE MARKET



Behind the design of every new product lies deep knowledge of the market, developed around three pillars. The first involves an analysis of the local automobile market, both new and used: sales volumes, vehicle distribution channels (independent networks or dealerships), driver habits (in particular average mileage), age and distribution of cars, by age and average period of ownership.

The second pillar concerns the legal aspects of the auto manufacturer's warranty. In France, the legal warranty runs for a period of two years. Some automakers offer a three-year, five years, and seven years warranty. It is important to know the contractual obligations with respect to vehicle maintenance. Faulty maintenance, or maintenance that is carried out by non-specialised networks, often leads to more frequent repairs. Taxes also play a role, whether these involve the taxes on extensions of warranty, import vehicle taxes, or those billed on repairs. Another fundamental point relates to the conditions under which recall campaigns are organised. Leading car manufacturers, amongst others, have recalled several million vehicles in recent months, pretty much all over the world, in order to correct safety or mechanical problems. Campaigns of this kind can be very costly to the insurer if these corporate risks, imputable to automakers, are not excluded from the scope of coverage.

Lastly, CAAREA studies the local market regarding extensions of warranty, looking at principal competitors, pre-existing products, the track record of these products, the existence or not of management platforms equipped with tools that are robust enough to manage these risks, and the constitution of a business plan.

It is necessary to pay such close attention at this study phase because it represents a steering tool, designed to measure the strategic challenges of a particular country. This analysis is indispensable to ensure that products are adapted to customer needs and that pricing risks are handled properly.

THE PRICING IS RIGHT



Each product requires specific pricing, depending on the results of the analyses carried out. This means determining which warranty extension product is best suited to a particular life cycle. This depends in turn on the age of the vehicle, where it is in its life cycle, and the way it will be distributed. A vehicle begins its life as a new car sale with the auto manufacturer's warranty attached. When this warranty expires, the customer will no longer be covered in the event of a mechanical breakdown. The possibility of purchasing an extension of warranty is then offered by the dealer. In Europe, these products are worth between € 200 (for a one-year extension) and € 500 (for three years). The method of distribution is generally optional – the customer may purchase this warranty or decline. We are talking about a penetration rate of 10 to 30%, which is significant but which could easily be optimised. This product allows auto manufacturers to get customers back into the dealership and offers dealers an additional margin at the time of sale. The end customer also has the option of purchasing this extension of warranty via a financing plan. The product goes for between € 5 and € 15 a month and is very easy to integrate into the loan or lease, whose monthly payments are around € 300. Penetration rates then rise from 30% to 70%, with margins that can reach 30% for the distributors.



Warranty extension can also be acquired when a used car is purchased. Most automakers have rolled out a certification system in Europe whose aim is to reassure the buyer of the vehicle's reliability. The dealer offers warranties to the purchasers of used cars. This warranty generally runs for twelve to twenty-four months and is always included in the sticker price of the vehicle. It costs between € 50 and € 300. For the inclusive product, the penetration rate is 100%. As for the new vehicle, the warranty can be part of a finance lease and run for the same term. On average, the term is thirty-six months in the West. Penetration rates are about the same as those encountered for new vehicle sales.

The last way to sell these warranties consists of including them in the insurance policy, as we stated earlier. The insurer adds mechanical breakdown to the policy or proposes it as an option, notably to policyholders with comprehensive motor insurance. The policy can be purchased at any time during the life of the vehicle and the policy term is usually twelve months with automatic renewal.

Once this analysis is completed, CAAREA determines the content of the product: term, extent of cover, distribution method, deductible or cap. The "terms and conditions of repair" section is a key point. It is important to know the repair network, the main problems the vehicle encounters, the level of discounts/rebates offered by the network, and labour costs. The eligibility criteria are also important: age limits, mileage limits, make and model, how the car is used.

A pure premium is also calculated, composed of two elements: frequency and average cost (cost of parts, labour, taxes). The estimated pure premium varies for each country, each product, and each vehicle age, plus each of the factors seen above. Beyond the pure premium, some elements are random. For protection against them, front-end loading fees are therefore added to this pricing. These fees, linked to the volatility of claims, depend on a number of parameters, in



particular the capacity for pooling, the risk of fraud, the local ability to manage these risks correctly, and the volume of information available on the country. These two components – the pure premium and the front-end security load – allow us to determine the technical premium.

To the technical premium, CAAREA adds certain costs: policy acquisition costs, sales and marketing costs, administrative costs, and event management costs, plus expected margins and commissions. Once the taxes have been added in, the market price is finalized. Correct pricing does not mean that the risk is perfectly controlled. It is still necessary to define the general and special conditions that will protect the cedant and the reinsurer. Mechanical breakdown insurance must cover random events. It is necessary to exclude all events of the serial breakdown or recall campaign type, exclude maintenance events, and ensure that the vehicle is properly maintained. The maximum compensation paid out must not exceed the residual value of the insured vehicle. Some components, like paint or corrosion, must be excluded.



Once the product is ready to be put on the market and the technical conditions are united, SCOR intervenes with its technical support via quota share treaties, which represents the second area of technical expertise behind the offer.

SOFTWARE DEDICATED TO MANAGEMENT



Now let's talk about management, the last of these areas of technical expertise. Motor insurance in fact covers frequency risks whose average cost can be known, which makes managing it similar to managing health risks. The role of the claims management center is thus critical. If it is too lax, irremediable adverse deviations can appear. If it is too strict, customers are not happy. The management center is responsible for control, information, knowledge, profitability, and customer relations. These are essential roles, from the perspective of both production and claims. To bring the best possible response to the needs of its partners, CAAREA has developed an in-house offering comprised of three management modules. These modules may be acquired under licensing agreements in every language. The first management module covers production, i.e., sales. It is a software package that offers sales assistance for the networks and for online policy purchases. In just a few seconds thanks to its rapidity and ease of use, **Caareaonline** makes it possible to propose an extension of warranty contract, over the phone, online, or face-to-face.

The second module, **Caareamanagement**, manages breakdown events from the filing of the claim to its settlement. This is the most important phase in management, which relies on an automated, secured script that ensures each phone operator is available for the customer. It is also at this stage that CAAREA's technical database is enriched.

The third module, **Caareaconsulting**, was created for distribution networks, which are too often neglected. This is a sales consulting tool, accessible to the general administrator as well as the field operator. It is used

to track and manage volumes, products, customers, commissions, premium rates, etc. Using this consulting module, it is possible to know every claim that is closed and the status of pending claims.

All of these software programs were developed in-house by the IT Global System team at CAAREA because its information systems ensures technical results, the quality of its customer relations, and the quality of the feedback and statistics.

Technological sophistication is nothing without distribution _____



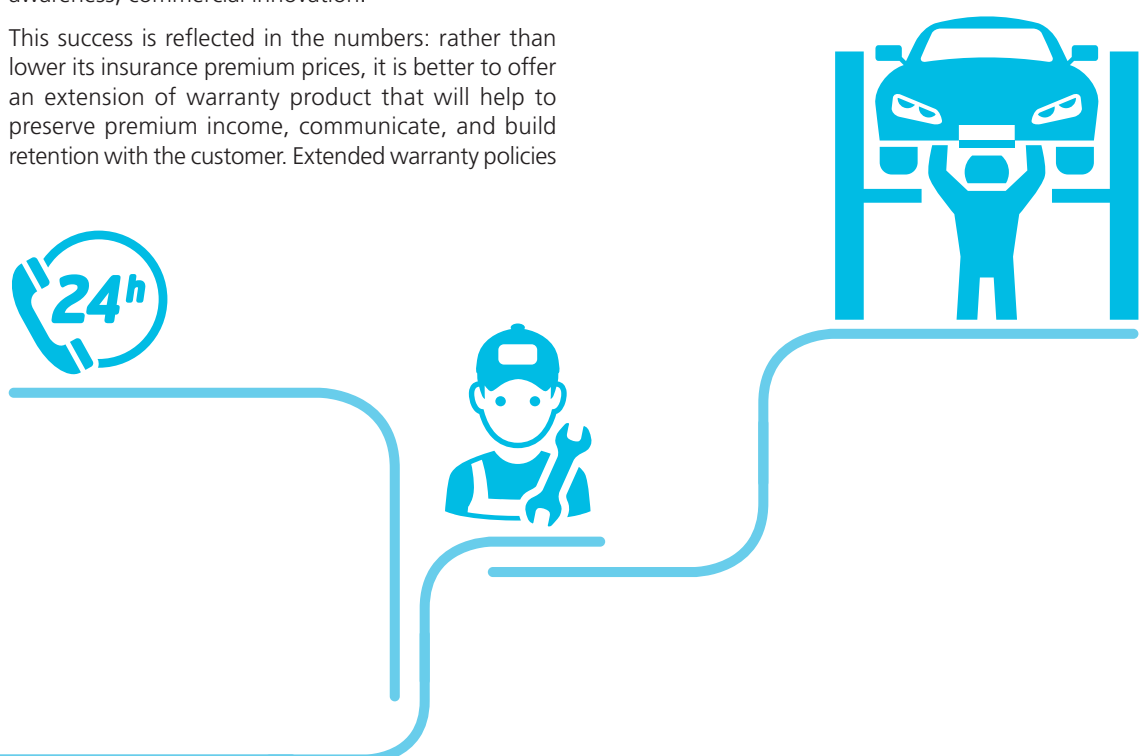
Without consideration and training for distribution channels, these products are dead on arrival. For this reason, the latest two areas of expertise in which CAAREA has built excellence are marketing support and field training.

The performance of distribution channels is contingent on their knowledge of the product and the marketing tools to which they have access (videos, sales literature, customer support, etc.) on the one hand and, on the other, regular follow-up and a field presence. The objective is to showcase innovation in order to make steady gains in the transformation rates. Performance is measurable thanks to the Caareaconsulting tool. These methods lead to beneficial and quantifiable results for distribution networks, increasing customer visits, building retention, increasing margins, brand awareness, commercial innovation.

This success is reflected in the numbers: rather than lower its insurance premium prices, it is better to offer an extension of warranty product that will help to preserve premium income, communicate, and build retention with the customer. Extended warranty policies

sold by dealers on new vehicles bring 90% of the vehicles back to the dealer's car repair garage; those sold by lenders increase the length of finance leases or lending agreements by 20%. As for the "sell worry free" packages, they have reduced the termination rate for motor insurers by 2 or even 3 points.

For too long, the market thought that having a good product was all it took to sell. Today, the dramatic decrease in demand proves the contrary. The technical aspects of the product, not to mention efficient management, remain crucial, of course. But winning and retaining customers also now means, for CAAREA's partners, having a range of additional services integrated with their core business, i.e., their insurance policy, their loan agreement or finance lease, and the vehicle sale agreement.



5

THE GREEN CARD SYSTEM

EIKE MEERBACH
Pricing Actuary
SCOR Global P&C

Automobiles such as the Benz-Patentmotorwagen, widely considered to be the first ever gasoline-powered vehicle, were introduced into Europe at the beginning of the 19th century. Unfortunately, this exciting innovation also ushered in the first car accidents. The need for victim protection insurance became apparent quite quickly and, by the 1930s, compulsory motor third party liability policies were adopted throughout Europe.

Increased cross border traffic exposed the limitations of these policies. Financial protection was only provided to the victims of motorists in their resident countries, and not to the victims of motorists visiting from other countries. Potential solutions were examined, but the arrival of the Second World War put an end to all discussions.

After the war, the issue was taken up again by the Economic Commission for Europe (ECE) of the United Nations. The ECE took into account an existing insurance system in Scandinavia that predated World War II and stated that if a driver had an insurance policy in his own country, then his insurance would be valid in another country as well. This system served as the format for what was later to become the Green Card System.

The Council of Bureaux (CoB) was established in 1949, serving as the managing organization of the Green Card System and the Motor Insurance Directives. By 1953, the Green Card System was operating with 15 member countries (Belgium, Czechoslovakia, Denmark, Finland, France, Greece, Ireland, Luxembourg, Norway, the Netherlands, the Slovak Republic, Sweden, Switzerland, Liechtenstein and the United Kingdom), and served to significantly develop victim protection insurance.

The original 15 member countries were soon joined by all of Western Europe, and eventually by non-European countries such as Morocco, Iran and Tunisia in the 1960s. The Eastern European countries joined the system at the end of the 1980s, following the fall of the Iron Curtain. The latest addition is Montenegro, which joined in 2012, bringing the current total to 47 member states.

The Green Card System covers a vast territory, but not all member states are covered in the same way. Member states of the European Union, Andorra, Norway, Iceland, Serbia, Switzerland and Liechtenstein have agreed that valid registration plates from those countries can replace the Green Card as sufficient proof of insurance coverage. This is not the case in some countries like Russia, where drivers still need a Green Card document provided by their insurer to show proof of insurance, or to purchase local insurance at the border.





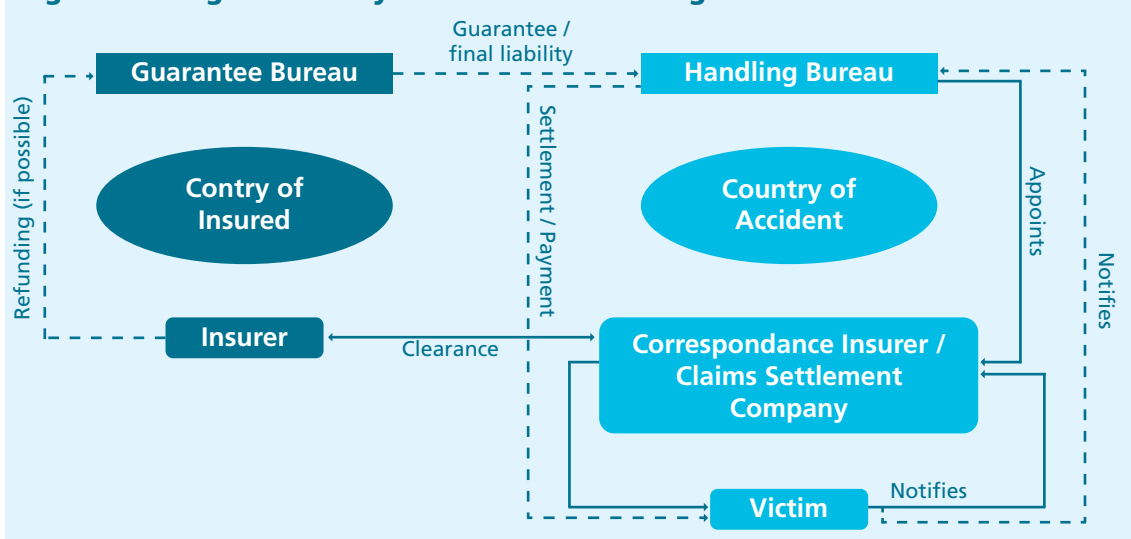
A National Insurers' Bureau was established in each of the member states, having two basic but independent functions.

- As a "Handling Bureau" in the country of the accident, it is responsible for the handling and settlement of claims arising from accidents caused by visiting motorists, in accordance with national legal provisions for Compulsory Third Party Motor Insurance.
- As a "Guaranteeing Bureau" in the country of the insured, it guarantees certificates of Motor Insurance (Green Cards) which are issued by its member insurance companies to their policyholders. It also guarantees reimbursement to the Handling Bureau for all paid claims.

Figure 1 illustrates how the Motor Third Party Claim is handled:

- the victim informs the Handling Bureau of the accident
- the Handling Bureau takes over the settlement of the claim, ensuring compensation to the victim
- the Handling Bureau contacts the Guaranteeing Bureau for reimbursement
- the Guaranteeing Bureau will, in turn, exercise its right of recourse against the insurer of the liable motorist for full reimbursement

Figure 1: The green card system – claims handling



In practice, there are several shortcuts to this process because most often the claims handling is given to claims settlement companies or local insurance companies to manage. An insurer may also choose a representative insurer in another country (to which the Handling Bureau must agree). For example, if a motorist insured by ERGO Germany causes an accident in Italy, ERGO Italy could handle the settlement of the claim.

According to the Council of Bureaux, each Bureau must guarantee compensation of injured parties in accordance with the national laws and regulations of that country, up to the local minimum legal limits. However, there have been instances where a claim has been brought before a court, which has then obligated the Handling Bureau to pay compensation in excess of these minimum limits.

The primary objective of the Council of Bureaux is to ensure the financial stability of the system by:

- Monitoring members (all new members for 5 years)
- Verifying that monitored members hold bank guarantees and sufficient reinsurance
- Imposing market reinsurance covers
- Controlling reinsurance conditions
- Coordinating the system, advising the European Commission

The Council of Bureaux stipulates stringent rules of admission for prospective member states. Potential Green Card state members must prove they have sufficient security to fulfil the function of a Guaranteeing Bureau. In some cases they are required to provide a letter of credit from a bank. They must fulfil certain reinsurance conditions, sometimes being required to undertake market-wide reinsurance cover. The Council of Bureaux constantly monitors the deadlines for payments, ensuring that each Bureau is able to meet its financial commitments.

A European loss landscape

The Council of Bureaux also collects data from the local Green Card Bureaux, which has proved to be very useful. One of the most important element is a matrix in which all Green Card claims reported each year are allocated to the country of accident and the country of the policyholder. A snapshot of this matrix is depicted in Figure 2 from which can

see, for example, that Bulgarian policyholders were responsible for 2,236 accident claims in Germany in one year, while German policyholders caused 111 accidents in Bulgaria in the same reporting year. Since these matrices are published annually we can also look at time series by country of accident and/or by country of policyholder.

Figure 2: Allocation of green card claims to the country of accident and the country of policyholder (2011)

CODE	A	AL	AND	B	BG	BIH	BY	CH	CY	CZ	D	DK	E	EST	F	FIN
A		2	1	99	303	89	11	397	6	755	4 006	49	247	12	200	5
AL	7		0	0	6	1	0	5	0	2	24	0	1	0	1	0
AND	0	0		5	0	0	0	3	0	2	8	0	449	0	104	1
B	13	2	0		301	11	6	23	2	93	831	23	255	20	2 263	6
BG	34	3	0	6		1	3	5	0	25	111	0	45	1	34	0
BIH	282	1	0	8	1		0	97	0	11	277	11	0	0	33	1
BY	6	0	0	1	11	0		0	0	14	46	0	1	11	2	0
CH	653	0	2	185	85	2	8		0	168	4 356	37	273	9	4 936	6
CY	0	0	0	0	0	0	0	0		0	3	0	0	0	0	0
CZ	269	0	0	20	97	3	19	49	2		1 173	21	41	13	55	0
D	2 187	17	0	2 041	2 236	161	234	1 636	32	4 419		1 240	1 414	229	3 776	233
DK	71	0	0	46	87	12	2	80	0	71	2 088		82	54	238	48
E	74	0	177	421	534	13	10	241	0	136	1 088	61		43	355	25
EST	1	0	0	1	2	0	1	1	0	1	16	0	3		4	26
F	521	2	63	8 061	1 111	40	32	3 226	306	538	7 349	253	8 059	204		48
FIN	2	0	0	3	5	0	2	3	0	6	53	4	6	648	14	
GB	252	1	1	979	1 210	49	4	156	11	1 210	2 872	100	1 602	116	2 363	22
GR	65	271	0	98	1 665	13	0	57	24	49	765	4	49	2	171	0

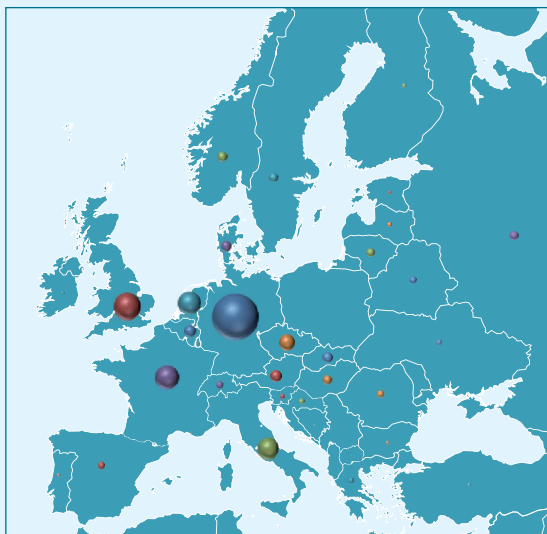
- horizontal: country of policy holder - vertical: country of accident

Source: Council of Bureaux.

In Figure 3, the map shows claims caused by Polish, Albanian and Russian policyholders. The circles are proportionate to the average number of accidents in a specific country over the last three years (caused by Polish policyholders, for example). We can see obvious differences, depending on the home country of policyholders and reflecting different travel destinations for each country.

Figure 3: Proportional and non proportional distribution of claims caused by drivers from Poland, Albania and the Russian Federation

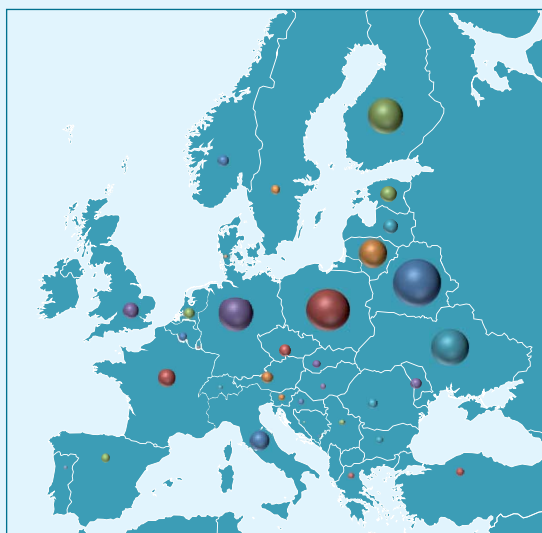
POLAND



ALBANIA



RUSSIAN FEDERATION

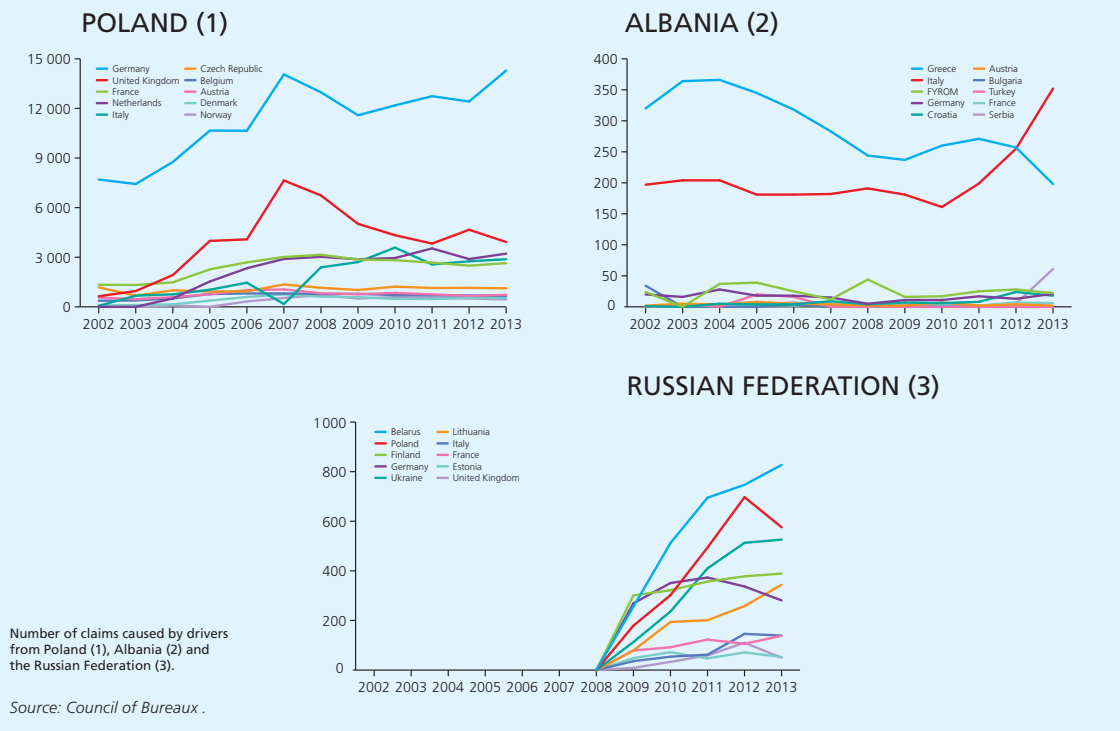


The circles are proportionate to the average number of accidents in a specific country over the last three years.

Source: Council of Bureaux .

It is also worth looking at the time series information, which allows us to detect trends and fundamental changes (see Figure 4).

Figure 4: Trends of claims caused by vehicles in Poland, Albania and the Russian Federation



For example, we see that there was a sharp decline in losses caused by Polish policyholders in the UK after 2007. This may have been caused by Polish nationals deciding to leave the UK that year, or by the fact that they purchased local insurance policies after having decided to stay in the UK, as documented by the number of policy cancellations in Poland that year. Another example is the increasing losses in Italy caused by Albanians.

Having obtained a European loss map, the crucial question is whether or not the country of accident makes a difference in terms of compensation levels. In fact there are many studies comparing national compensation levels, which show that there are big differences between countries (cf Scor Global P&C Technical Newsletter Motor Third Party Liability 2013). There are also national specificities to take into account – for example Italy suffers from a serious level of fraud, with the highest claims frequency and highest average claim size in all of Europe. France has observed a strong increase in the cost of bodily injury claims over the last decade and requires unlimited motor third party liability insurance. Great Britain has moved from lump sum payments to annuities, which essentially imposes risks more connected to life insurance, etc.

The issue for reinsurers is that typical Eastern European non-proportional covers have relatively low retentions (€ 0.3M – € 0.5M) compared to other major market countries, and the loss experience is to a large extent generated by Green Card losses, reflecting the risk that a policyholder from a country with very low risk compensation levels, such as Albania, will travel to somewhere like Germany and cause an accident there. To determine the price of such reinsurance cover, the first step is to set up a stochastic model reflecting possible loss outcomes. However, setting up this kind of model is difficult due to the low frequency of observations, as we would need to observe a sufficient number of losses in order to attain a reliable statistical estimate for the expected frequency and severity of Green Card losses in each country other than the home country of the insurer (bearing in mind that a claim can differ in magnitude depending on where it happens, e.g. a Bulgarian vehicle causing an accident in France will generate a larger claim than the same kind of accident in Albania). What happens if we have not observed a loss coming from a specific Albanian Insurer in France? Does this mean that there is little or no exposure (bearing in mind that a single claim in France could have a big impact on the profitability of the reinsurance program)?

Modelling green card exposure

In order to quantify the Green Card exposure of a certain insurer, we need an estimate of the frequency and the severity of the claims exceeding a certain threshold in every other Green Card country. This brings us back to the matrix mentioned previously, which provides us with the number of ground up losses, split by the origin of the policy and the location of accident. One idea is to use this matrix data as a measure of exposure, in addition to others like written premiums or the number of vehicles insured by a specific insurance company.

This can be done in the following steps:

- Identify the relevant exposure, by looking up the number of losses caused in other countries in the matrices (for an insurer in Albania, cf. Figure 3, this would certainly be in Greece and Italy, but also in Germany as there are only a few losses but they might be of high magnitude).
- Determine the frequency and severity distribution for each (relevant) country via:
- The number of claims from the "Council of Bureaux" statistics multiplied by the market share of the insurance company.
- Multiplication by a factor which tells how many ground up losses will reach the required threshold/priority, e.g. € 250,000 (this factor is country dependent).
- Add a severity model for each country:
- This can be obtained from local market models.
- Apply a loading for non-relevant or non-modelled countries.

Obviously with each of these points come certain challenges, e.g., the market share might not be equivalent to the exposure to Green Card claims for a company which mainly insures trucks. Ultimately, the main challenge is the matrix data itself, because although to our knowledge the data provided by the Council of Bureaux is the only European-wide database of its kind, it is not perfect. The Council of Bureaux simply collects the data it receives from National Bureaux, it does not analyse it. Due to the different possible settlement paths, cf. Figure 1, there is a risk of double-counting and/or claims omission.

Therefore we decided to adjust the factors telling us how many of the ground up losses shown in the matrix could reach a certain threshold, based on our experience. This means that if we have observed many Green Card losses in Germany above a certain threshold, we can set the factor for German losses in such a way that application to the matrix data gives us back our experience value. This is a major task, since we have to take into account the indexation and possible development of claims on the one hand, and market share on the other (e.g. how many of the Green Cards we SHOULD have observed in Germany, given the number of cedants providing us with data). But ultimately we could produce a model as outlined above, which relies on (market) assumptions where there is not enough experience, and is fine tuned in accordance with increasing experience.

The future

We must not forget that the Green Card System is not the only one of its kind in the world. We have the Orange Card System in North Africa, the Blue Card System in Asia and several systems in Sub-Saharan Africa. Some countries participate in both systems, like Morocco and Tunisia. However, as the data is still less reliable than in Europe, we have not yet attempted to create a model for these countries.

There is actually a trend towards harmonization of the loss landscape in Europe (e.g. the harmonization of legal minimum limits). However, because this is still a very long way off, we are still going to need models for Green Card exposure in the foreseeable future.



6

REINSURANCE ASPECTS OF MOTOR

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Key aspects to consider when covering a motor portfolio

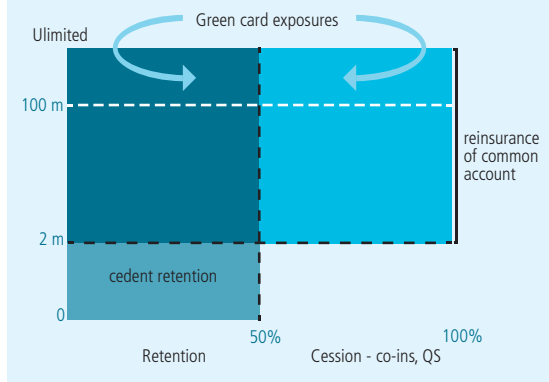
When considering how to cover a portfolio of motor business, insurers can typically choose between proportional and non-proportional coverage, or indeed a combination of the two methods.

With proportional protection, often referred to as quota share, reinsurance protects a stated percentage of each original motor policy. Reinsurers receive the stated percentage of all premiums written by the insurer and pay the insurer the same percentage of all claims that arise under the same original policies, regardless of the size of claims.

Alternatively, or indeed in addition to the proportional method, insurers can choose to protect themselves against the impact of severe claims, by purchasing non-proportional cover. Here the insurer will select a monetary amount, known as a retention, which they are willing to pay themselves on each and every claim that they receive from their policyholders. Above this retention, and subject to the upper limit of the reinsurance program, reinsurers will pay the balance of any claim.

In Figure 1, by way of example, where the horizontal x axis represents the percentage of each and every original motor insurance policy and the vertical y axis represents the monetary size of a possible claim arising on said motor insurance policy, the dotted vertical line at 50% represents the proportion or quota share percentage and therefore the split between the insurer and reinsurer of premiums and claims. The dotted horizontal line set at €2m represents the level of retention of the insurer. The insurer will pay up to this amount on each claim with non-proportional reinsurers paying the balance. This example shows what is commonly

Figure 1: Retention, cession and limits



known as 'reinsurance of joint account' where the non-proportional program protects both the insurer and the proportional or quota share reinsurer.

Before considering any reinsurance purchase, the insurer will be responsible for the entirety of any claims that arise, i.e. for 100% of all claims regardless of their size, which would be represented by the entire area of the graph. In the example described above, the insurer's retention has been reduced to a maximum of €1m per claim as represented by the light pink shaded area, through the purchase of both proportional and non-proportional reinsurance.

One further complication, in a European context, is the issue of green card exposures. Different countries require, as a matter of law, motor insurance policies issued in their jurisdictions to provide differing minimum levels of cover. However, should an original



insured travel abroad into a country which requires a greater level of cover than that imposed in his home country then his motor insurance policy would automatically grant the higher limit required.

By way of example, if a German domiciled insured, who is required to have cover of €100m (represented by the white dotted line on the graph), travels to the UK where unlimited cover is required, his policy will automatically give him unlimited cover, (so called Green Card cover) during his stay.

There are several factors that may influence the choice between the types of reinsurance and where the vertical and horizontal lines might appear on our graph.

- Where is the market/ client positioned in terms of development and maturity? Newly established insurers will often utilize proportional reinsurance during their early years of development, until such time as they reach a critical mass and are better able to source growth through retained profits. Eventually such development can also lead to a gradual or indeed complete shift from proportional towards non-proportional protection. More developed markets/economies tend to have greater expectation of compensation for bodily injury and therefore foster greater demand for non-proportional protection. In emerging markets where the majority of claims costs still emanate from damage to vehicles rather than compensation to people in respect of their injuries, it is possible that non-proportional cover is not purchased at all.

- What is the level of intervention from the state? What is the balance between public and private provision? Even in developed markets where the expectations for compensation may be high, aspects of such compensation can be absorbed by the state rather than being passed into the private sector and hence insured. This can influence demand and requirement for non-proportional reinsurance.

- Solvency considerations – does the client write only motor business or multiple lines? With the approach of Solvency II within Europe, the regulatory landscape is evolving and becoming far more complex. If we just consider the business being written by a particular insurer, it is reasonable to assume that the capital requirements of a very well diversified insurer will be somewhat different to those of an insurer who is only writing business emanating from a single sector of the marketplace.

In summary, when considering the type of reinsurances that might be used by an insurer it can be seen that the various combinations can influence both the technical results and profitability but also the levels of capitalization required by the insurer.

Detailed look at proportional reinsurance

Moving on to the proportional line, the classic approach is the following: you have your premium in and your claims out (loss ratio). You will have external costs for the acquisition of the business in the first place (acquisition ratio) and, obviously, the internal costs of running the insurance company itself (cost ratio). The sum of these three ratios will give you the combined ratio.

Classically, the insurer will have received some sort of overriding commission from the reinsurance company because, on a proportional basis, the reinsurer is taking in significant amounts of motor premium, without employing the significant number of people that the insurance company has to in order to efficiently acquire its business. This has always been the trade-off between insurers and reinsurers, in order to reach their respective net profit positions. The table in Figure 2 gives a relatively simple example.

Figure 2: Example : proportional reinsurance

	100%	50% client retention	50% quota share cession
Premium	100	50	50
Claims	65	32.5	32.5
External costs	10	5	5
Internal costs	10	5	5
Combined	85%	85%	85%
Overriding commission		+2.5%	-2.5%
Net profit	15%	17.5%	12.5%

Source: SCOR Global P&C

The example starts off with 100 units of premium; there is a loss ratio of 65, with internal and external costs both at 10, giving a combined ratio of 85, with a net profit of 15. This is before any consideration regarding quota share, co-insurance or overriding commission arrangements between the insurer and the reinsurers. The client retention is pro rata proportional, which means that the premiums, claims and costs are all split down the middle, that is to say 50%. If an overriding commission of 2.5% is added – paid by the quota share reinsurer to the insured –, this will boost the insurer's profit to 17.5%. When the reinsurer has given away the overriding commission in exchange for receiving the volume of premium – as it doesn't have to employ thousands of people like the insurer to efficiently underwrite – it leads to a deviation in net profit between insurance and reinsurance: 12.5% for the reinsurer (15% - 2.5%) and 17.5% for the insurer (15% + 2.5%).

What tends to happen more often in today's environment is what is often called "leveraging". People may wonder why insurance companies would go to the effort and cost of acquiring their business, only to give an increasing amount of it away to reinsurers. But if they do this through a combination of co-insurance and quota share, they are not actually utilizing their capital to underwrite 100% of the level of premium they have advertised for and acquired. It can be a very capital-efficient model for them.

If, by way of further example, we take the same 100

units of premium with the same claims ratio and a combined ratio in terms of internal and external costs, but apply differing percentages so as to emphasise the impact of leveraging, with the insurer retaining only a quarter of the income and the corresponding claims costs, and the other three quarters being covered by a combination of co-insurers and quota share reinsurers, this will result in rather different outcomes.

If you have ceded (reinsured) business of up to 75% in many markets, bearing in mind the various regulatory restrictions, you will typically need to then have co-insurance in addition to quota share, because quite often the regulators will impose constraints on the maximum percentage of quota share.

For the time being, we are all still sharing the same claims and premium pot as well as internal/external costs although the change in the quota share / co-ins percentage will have an impact upon the net result of the insurer and reinsurer (assuming the same 2.5% overriding commission) as shown in Figure 3a. Then ancillary income comes into play. For example, let's take a contribution to the margin by ancillary products of 10%: see Figure 3b. That 10% applies back to the 100% premium generation that the insurance company has been able to achieve, all of which flows through the 25% retention. None of that comes through the co-insurers or the quota share reinsurers.

Ancillary income is not readily recognized as insurance premium and is not as easy to deal with as classical reinsurance structures. This is when the leverage comes into play. By flowing back entirely in the 25% retention,

and with 21.25% of claims and external costs, ancillary income brings the net result back to 13.75% which is a huge performance of 55% relative to the 15% seen by quota-share or co-insurers.

Figure 3a

	50% retention	50% quota share
Net result	17.5%	12.5%
	25% retention	75% co-insurance or quota share
Net result	22.5%	12.5%

Source : SCOR Global P&C

Figure 3b: Margin impact of an ancillary product

	100%	25% retention	75% co-insurance or quota share
Premium	100	25	75
Claims	65	16.25	48.75
External costs	10	2.5	7.5
Internal costs	10	2.5	7.5
Combined	85%	85%	85%
Ancillary Income	10%	10	-
Net result		13.75 i.e. 55%	15%

Source : SCOR Global P&C

Ancillary products

So what are the different types of ancillary income and what can they add to the insurance company results and to the overall relationship with the original insured? They can be considered to fall into four broad categories:

1. Cross selling opportunities with other lines of business

With motor insurance often being a compulsory product, many non-life insurers will have more motor business than any other product. In terms of diversification and cost efficiency, it is fairly logical to contemplate the possibility of offering further lines of business to a segment of your existing customer base.

Diversification benefits can come from the fact that different lines of business will not necessarily be impacted by the same claims or premium pricing trends at the same time. It can also prove beneficial when the overall capital requirements of the insurer are being calculated within emerging solvency frameworks.

Cost efficiencies can be gained from the partial utilisation of existing systems and the fact that the customer is already known to the insurer and does not have to be acquired for a 2nd time.

An insurer will often act as an intermediary for another insurer, who is more established or experienced in the new class of business that is being cross sold with the motor, and just receive a commission payment for the newly acquired business. Over time, as the insurer's experience and comfort levels grow, it might then move partially or completely towards assuming the underwriting risk for the newly cross sold class.

2. Add-ons within the motor product itself

There are many potential add-ons such as legal protection, key cover, substitute vehicle, excess protection and breakdown cover (see Figure 4). For each of these the motor insurer would need to decide whether it is willing to take on the underwriting risk or act as an intermediary and just receive the commissions. The range of add-ons will naturally vary from one market to another. As well as offering potential revenue they provide the opportunity for a motor insurer to differentiate its product on something other than just price.

These products have proved to be effective in terms of reinforcing the motor offering of insurance companies, even though they may actually be standalone products

Figure 4: Example: United Kingdom

Ancillary Products	Illustrative Example of Potential Revenue	Retail Price	Commission Level	Revenue
Other Revenue Streams	Motor Legal	£20-£25	80%-95%	£16-£24
Premium Financing	Key Cover	£10-£15	60%-80%	£6-£12
Mid term adjustments	Substitute Vehicle	£15-£25	60%-80%	£9-£20
Insurance Cross Sales	Excess Protection	£20-£25	40%-60%	£8-£15
Home Insurance	Breakdown Cover	£40-£70	40%-60%	£16-£42
Travel Insurance	Credit Hire Referrals	n/a	n/a	£200-£300
Pet Insurance	Bodily Injury Referrals	n/a	n/a	£700

Source : SCOR Global P&C

that are completely independent from motor. The table in Figure 4 illustrates the UK experience.

The levels of pricing and commission in Figure 4 are taken from specific European experience, so they do not necessarily represent the experience across all countries, but they do provide an indication of the situation in the advanced markets using this type of ancillary product.

Two of the more common add-ons that are worthy of further explanation are legal protection and breakdown. These are the more commonly sold add-ons in a UK context and tend to generate the higher revenues, whether underwritten by the motor insurer or intermediated to another insurer.

Motor legal protection cover enhances the protection of the insured when there is an accident. This coverage encompasses a number of legal aspects, which could be useful in terms of reacting to an accident, and is designed to fund the cost of taking legal action against the party that caused an accident so as to recover uninsured losses such as policy excesses and personal possessions.

Breakdown cover is spreading rapidly across the European markets. This cover can be provided by the manufacturers themselves, added on to the leasing or the financing product or purchased by the insured. It is a very good example of how motor insurers have been able to adapt the market place. Historically, much breakdown cover would have been bought directly from the various breakdown companies by the original insureds. Increasingly motor insurance consumers have the opportunity to add such coverage onto their motor insurance policy. Such coverage might be more

restrictive (e.g. just applying to the breakdown of the insured vehicle, whereas standalone coverage can be applied to any vehicle in which the purchaser is travelling) but will tend to be somewhat cheaper as a result.

Looking at the various products on offer, mature markets basically contain products that are capable of producing better results than motor third party liability. This is a key point because it means that insurers are leveraging their motor business to write more (non-motor) business than they possibly could without ancillary products.

Whilst the individual revenue items shown in Figure 4 are relatively modest, they are capable of producing significant revenue streams if they are attached to most of the insurance policies that an insurer sells. Cross-selling ancillary products has clear economic benefits, and should be done in a transparent and fair way to the customers, even though (or especially as!) ancillary products' individual premiums can be modest when compared to the main (motor) policy. In the UK, motor insurers have actively engaged in leveraging their existing motor book thanks to ancillary products, in a context of increased regulatory and consumer protection rules.

When linked to the distribution network of each company, ancillary income is a very flexible product. It can be distributed by existing networks, such as agents or brokers, but it can also be very effectively used by internet aggregators, which is the trend in European countries. This trend is likely to develop over the coming years. In principle, it could be just an additional click on the list of potential guarantees that one could buy through an aggregator, a computer or a smart phone.

3. Revenue streams flowing from the administration of the business

If an original insured chooses to pay his premium on a gradual, let's assume monthly basis, rather than in one lump sum at the beginning of the contractual period, insurers will charge the original insured more for this flexibility. This additional element is not an uplift in the risk premium, it is the cost of finance. For example, EUR 100 of premium could be paid in one full payment or it could be financed over several payments, raising the total price to, perhaps, EUR 110. This would be an extra source of revenue for the insurance company.

Also, if an insured makes a change to their policy mid-term due to, for instance, changing address or buying a different vehicle, as well as making an appropriate adjustment to the insured's risk premium the insurer will invariably charge an administration fee.

4. Revenue streams flowing from the claims handling aspect

There is no retail price or commission level for credit hire or bodily injury referrals, as these are not sellable products as such rather they are revenue streams directly related to claims activity.

They have been very much the preserve of the UK market and are illustrative of the fact that not all developments in the sphere of ancillary revenues have a positive impact.

If we consider that the UK motor market generates annual premium of circa GBP 15bn and historically is marginally profitable, if at all, then this market is also generating circa GBP 15bn of claims and claims related costs per annum. In recent years, a portion of this GBP 15bn has been targeted by:

- companies that provide hire cars to insureds, who are not responsible for an accident, whilst their own car is being repaired;
- claimant solicitor firms in their pursuit of compensation for victims of so called low-level 'whiplash' type injuries.

Much has been written on these topics but suffice to say that they both lead to an increase in both claims frequency and overall claims costs.

There is a lot of inefficiency in such developments as, in theory, for each case where the insurer of a not-at-fault party can receive the referral fee as ancillary income, they have the corresponding claim where they are the insurer of the at-fault party and where they have to pay inflated claims costs.

This then leads to a need to further increases in premium levels to try and maintain performance levels. Given that much of the increased cost is not actually being paid to claimants this has led to recent legal reforms to attempt to curtail such activities.

5. Data supply and analysis for quota share

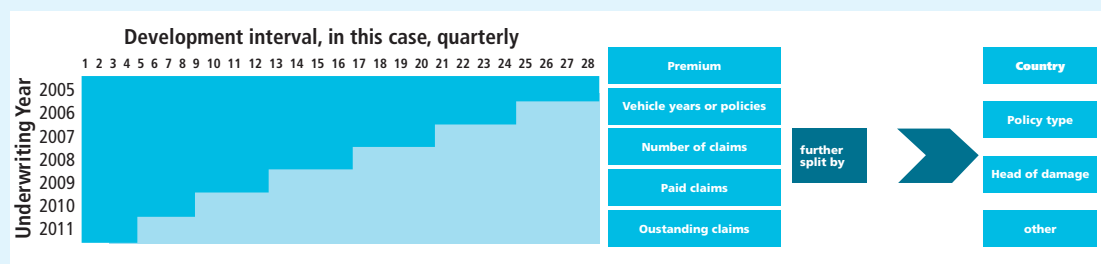
As well as the insurance company's profitability profile and its ability to provide coherent management information data, to facilitate appropriate analysis it is also important to have a view of how ancillary revenues contribute to the ultimate financial performance of the insurer.

Reinsurers then try to assess the performance of the business over time to ascertain how it is likely to run. Figure 5 shows a classic triangle.

This example shows a number of historical underwriting years, where data is received on a quarterly basis, which is fairly standard. Sometimes, however, for large enough accounts with an established market, the development interval may be monthly.

The blue area shows the client-reported data. What level of granularity would be ideal for receiving this information? If it is not a huge account and the reinsurer is operating within one single market or territory, it might just receive one triangle.

Figure 5: The performance triangle analysis



These are the sort of features a reinsurer would be looking to capture:

- The entirety of the premium income being written and how this develops over time throughout the four quarters (or 12 months if data is supplied on a monthly basis) of the underwriting year;
- The measure of exposure, either in vehicle years or vehicle policy years, depending on the make-up of the market and how the policies tend to be underwritten;
- The number of claims, which allows the reinsurer to calculate loss frequencies, i.e. what percentage of vehicles / policies have had a claim;
- Aggregation of the total paid and outstanding value of the claims, which also enables calculation of the average cost of a claim.

Having that data then allows the reinsurer, through actuarial techniques, to project and complete the triangle, and then effectively turn the triangle into a square by populating the pink shaded area with projected values. In 2005 it would be rather surprising to see any evolution in terms of the premium and the number of policies, because these policies were written years beforehand. It's more about the number of claims and the value of those claims. So you take the developments that occurred in the more developed mature years and apply these to the more immature and relatively undeveloped years, in order to form a view of what might realistically or reasonably happen for the year that you are trying to write. Of course, this approach needs to be overlaid with your general knowledge of the market and interaction with the client. This cannot be achieved through data alone - you need to know and understand how the insurance company operates.

If relevant and if the data is available it might be appropriate to split the overall aggregated premium, vehicle years and claims data into more than one dataset (triangle). Examples could be by country (if an insurer is operating across multiple territories), policy type, type of vehicle (bus, taxi, private car etc.) and by head of damage. Claims, in particular, will perform and develop very differently between, say, property damage and bodily injury.

The premium and the number of vehicle years can be used to generate a projection of the ultimate values. With regard to claims the reinsurer is essentially looking at the extent to which it needs to incorporate incurred but not reported (IBNR) claims. So for example, if you are in a market where a significant proportion of the claims costs come from motor third party liability on the bodily injury side – and in certain markets that can still take quite a long time to come to fruition - it would be reasonable to assume that you will receive compensation for the property damage relatively quickly, but not for the third party liability, which is why sometimes it's quite valid and useful to get these claims split out by heads of damage.

Within the table (Figure 6) there is also a column for the IBNR claims as a proportion of the outstanding. With this cross-check, one would expect over time to go back through the years looking at the IBNR proportion of outstanding, and to reduce it gradually as the outstanding position becomes more defined. You then have a variety of claims measures to assist in your assessment. You can look at claims frequency over time to see if it is increasing, decreasing or stable. You can also look at the average cost of claims and how this is changing.

Figure 6: Data gathering for triangle performance projections

UW Year	Country, policy type or head of damage																				
	Client reported data			Projected data																	
	Gross Written Premium		Number of Policies		Gross Claims				Number Claims			Claims ratios				Average Cost per claim		Average premium			
Latest	Future	Ultimate	Latest	Estimated Ultimate	Paid	Outstanding	Incurred	IBNR	Ultimate	Latest	Future	Ultimate	Paid	Incurred	Ultimate	IBNR/OS	Claims Frequency	Average Cost per claim	Change in ACPC	Average premium	Implied rate change
2003													0.0%	0.0%	0.0%	0.0%	0.0%	0	0.0%	0	0.0%
2004													0.0%	0.0%	0.0%	0.0%	0.0%	0	0.0%	0	0.0%
2005													0.0%	0.0%	0.0%	0.0%	0.0%	0	0.0%	0	0.0%
2006													0.0%	0.0%	0.0%	0.0%	0.0%	0	0.0%	0	0.0%
2007													0.0%	0.0%	0.0%	0.0%	0.0%	0	0.0%	0	0.0%
2008													0.0%	0.0%	0.0%	0.0%	0.0%	0	0.0%	0	0.0%
2009													0.0%	0.0%	0.0%	0.0%	0.0%	0	0.0%	0	0.0%
2010													0.0%	0.0%	0.0%	0.0%	0.0%	0	0.0%	0	0.0%
2011													0.0%	0.0%	0.0%	0.0%	0.0%	0	0.0%	0	0.0%
2012													0.0%	0.0%	0.0%	0.0%	0.0%	0	0.0%	0	0.0%
2013													0.0%	0.0%	0.0%	0.0%	0.0%	0	0.0%	0	0.0%

Source: SCOR Global P&C

Excess of Loss, data supply and analysis

Data provision usually takes two forms, client specific and market wide studies. Both of these can play an important role in informing reinsurers views of premium and claims evolution over time and therefore assist in the course of action to be taken for any individual business proposition.

In excess of loss, we tend to see considerable variability in terms of the quality and detail of information provided from market to market. Generally, the better the quality of the data provided, the more accurate the assessment of the potential exposures.

When considering client-specific information there are big advantages in the standardization of data collection through a unified format. If everyone is providing information on different bases, it is not so easy to aggregate and form a view of market statistics and market conditions. Some markets have adopted standard questionnaires which allow for more effective analysis by reinsurers. There are also market organizations which capture data at a broader market level. Contributing insurers tend to be willing to allow usage of their data, as it is anonymised before publication.

By way of example, in the UK several studies have been published over the last 15 years by the ABI / IUA

and IoA with a particular focus on the evolution of claims costs. These types of works can be very useful in markets where claims cost evolution, particularly for bodily injury, may bear little resemblance to ordinarily accepted measures of inflation such as consumer price indices.

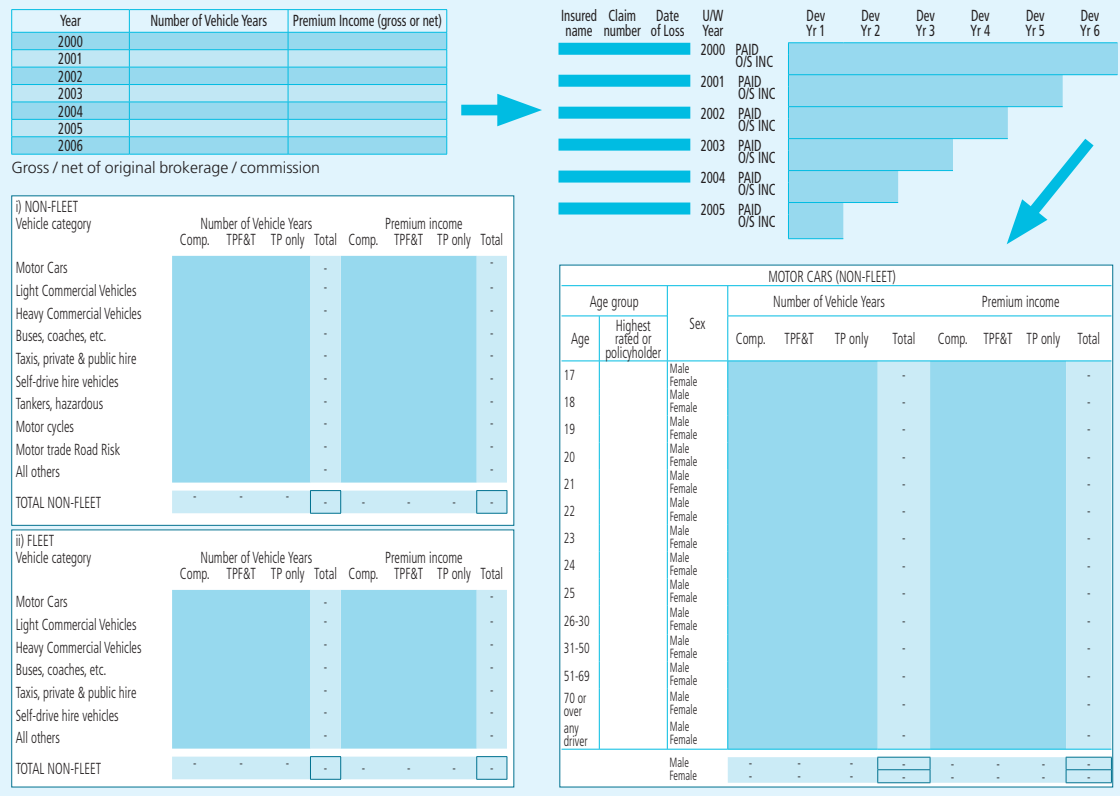
There are also regularly published studies and indices from a variety of sources, including Deloitte, Confused.com, one of the leading aggregator sites, and the Automobile Association, which seek to monitor the movement of premium pricing levels in the market.

In terms of benefits, if you have credible, verifiable data it is harder for people to rebut your assumptions regarding premiums and claims. It gives you a good, grounded view of the technical price you need. Maybe you won't achieve it, but it gives you good grounding for the line in the sand that you draw in terms of the theoretical technical price you need.

Over time, markets tend to improve their level of information provision.

Taking the UK as an example Figure 7 shows some of the evolutions in the market questionnaire.

Figure 7: The market questionnaire evolution



The diagram above starts with a table that simply requests from insurance companies the premium and the number of vehicles year by year. This is the most basic level of information a reinsurer could expect to receive, which is a very rough measure of the exposures for each year. To the right we see the development of claims which is normally presented on this triangulated basis and which shows for each individual claim its development over time with a split of the incurred value between the paid and the outstanding amounts as at the end of each year.

Below this we see the request for information becoming more granular as regards the composition of the portfolio, splitting both the premium and vehicle year numbers between different vehicle and policy types.

Where available, more usually for the private car portion of the portfolio, SCOR also asks for a split by both age and gender.

To complete the picture and allow a more fully informed and granular analysis of the portfolio, Figure 8 shows the expansion of the claims information triangle Figure 7. This seeks to tie in the claims experience to the exposures that have been written, but to a more granular level.

As, over time, an increasing proportion of the market completes this unified data set the reinsurance market is provided with a powerful analytical tool which facilitates a more informed approach to underwriting.

Figure 8: Information of a claims triangle

Insured name	Claim number	Date of Loss	Age of insured	Gender of insured	Age of driver at time of accident (if different from insured)	Gender of driver involved in accident (if different from insured)	Type of policy Comp / TPF / TPO	Category of vehicle	Fleet / Non fleet	Number of claimants	Age of major claimants	Gender of major claimants	Major injury suffered by major claimant	Country of policy issue	Non bodily injury above reporting level? (Yes / No)	Currency	Periodic payments Ordered or Agreed? (Yes/No) If Yes, please also complete Appendix No.5	UW Year
																		1996
																		PAID
																		O/S
																		INC
																		1997
																		PAID
																		O/S
																		INC

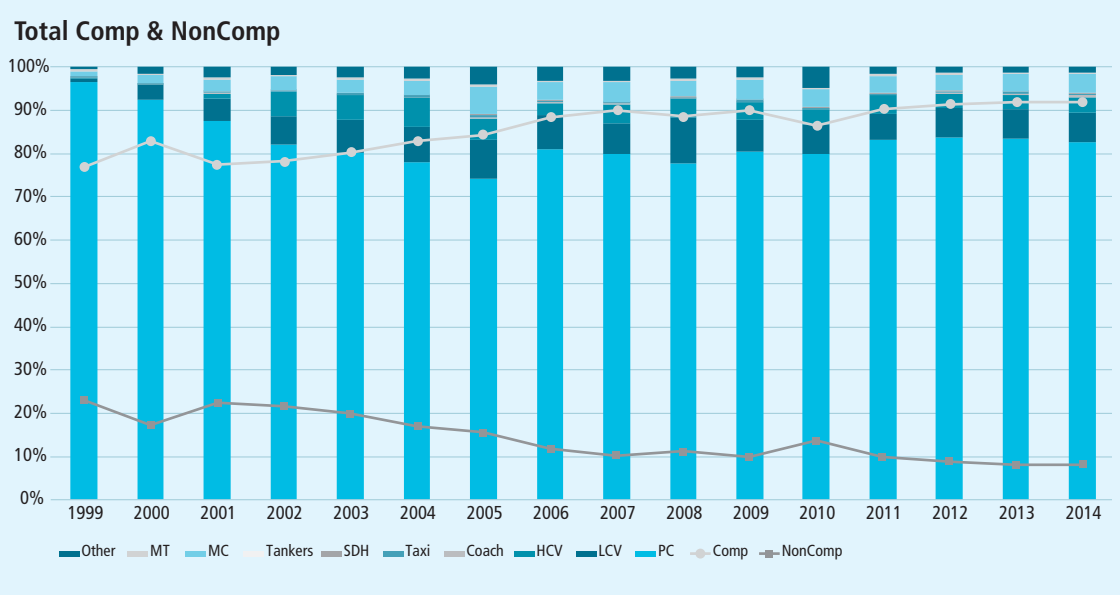
Source : SCOR Global P&C

An additional important observation when seeking to utilise such data sets in other territories is the absence of any question regarding policy limits. Given the period over which motor policies in the UK have been issued on an unlimited basis, there is no need to ask about such limits. In other territories where finite limits apply and where they may well have changed over time, it is

important to seek such information as historical claims might be effectively capped by the lower limit that had existed when the business was written.

As the whole market provides data on this unified basis SCOR is able to monitor the composition of the underlying exposures over time split by policy type, vehicle type, gender and age.

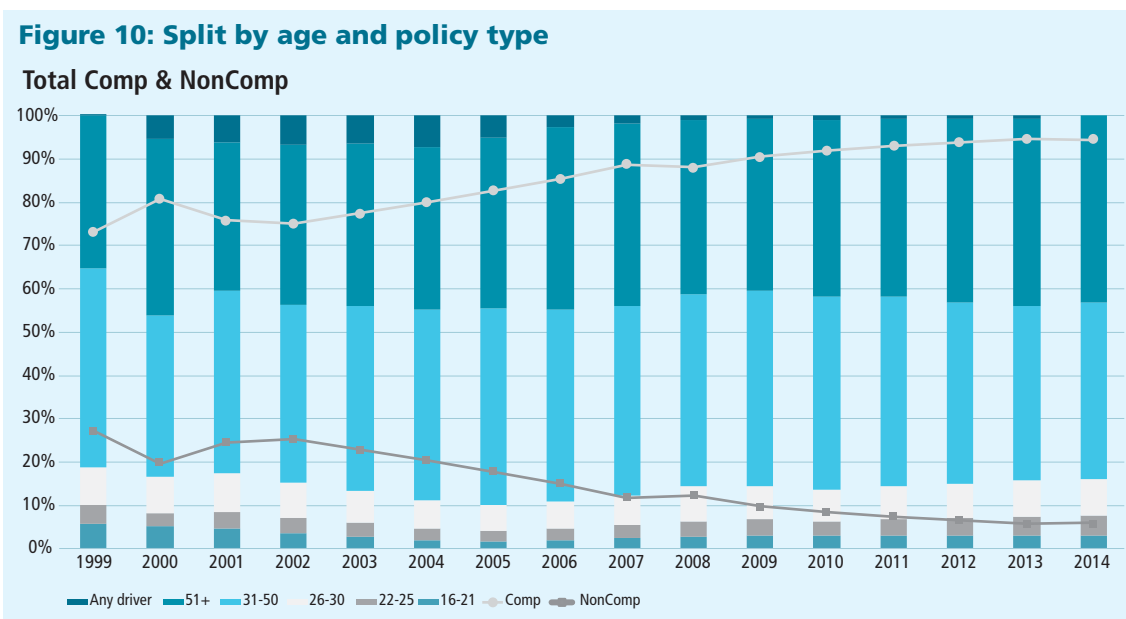
Figure 9: Split by vehicle and policy type



Source : SCOR Global P&C

This kind of split, and the relative importance of one versus the other, is a very important element in terms of understanding how the portfolio develops, and of being able to better analyse its exposure. Having the age ranges of the drivers is another point that can help a lot in terms of segmenting.

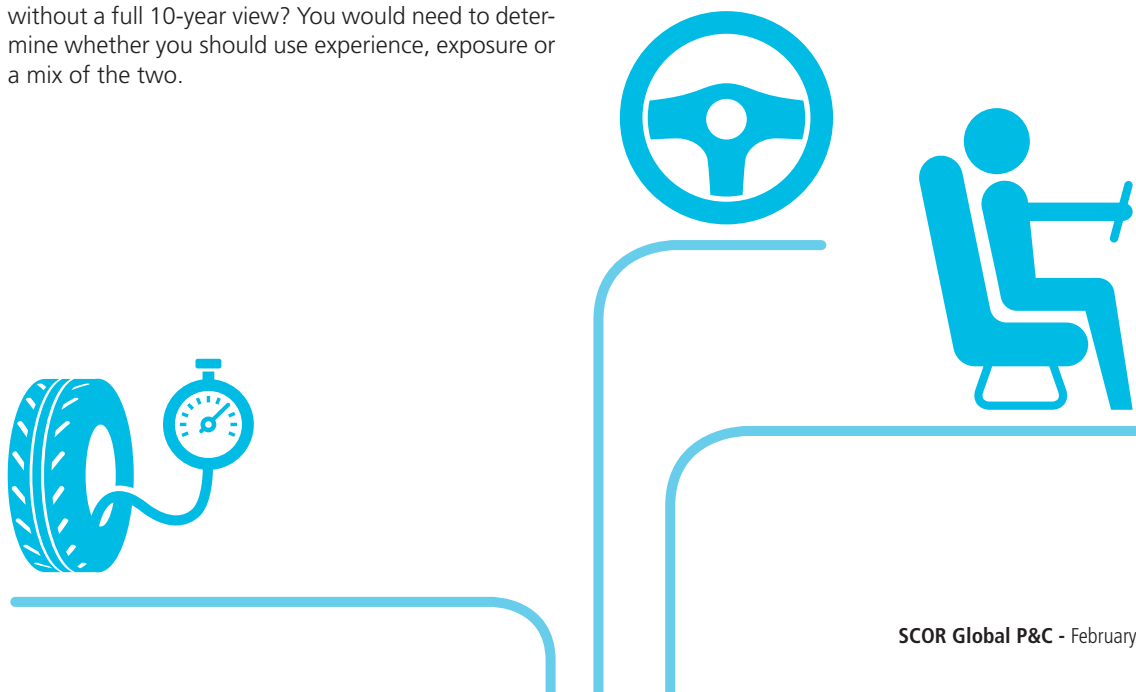
The practical application of this questionnaire tool, has demonstrated the prevalence of comprehensive and non-comprehensive information and data within the markets. Figure 10 shows the same data split by age, and includes not just the difference in the evolution of driver experience between ages 16 and 40, for example, but breaks it down even further for ages 18 to 19, where there is more of a difference in behaviour than between ages 40 to 41.



If SCOR approached by an established insurance company that has both a stable portfolio composition over time and adequate claims experience such that there are sufficient claims for the actuaries to consider in their pricing analysis then overall that company will be more assessable based on its own historical experience.

You might move on to a changing portfolio with adequate claims experience. But if the claim experience information comes from a portfolio with a certain composition in terms of vehicle and age, it is subject to change. In other words, past performance does not necessarily represent the future. This could also be true for a new company. For each of these cases what would you do?

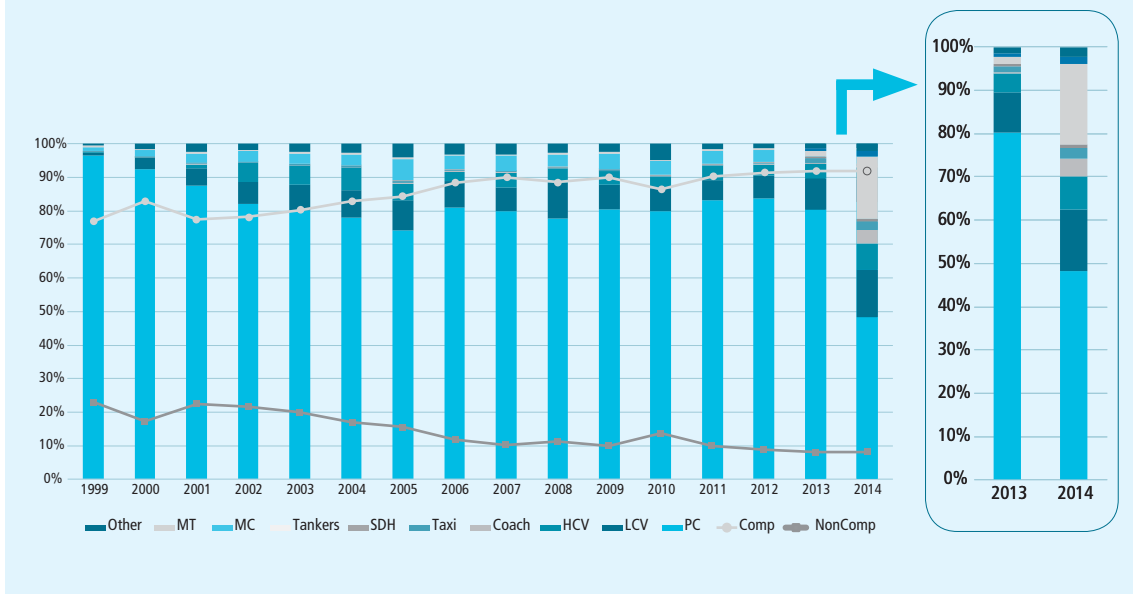
However, what happens if the company has inadequate claims experience, on a seemingly stable portfolio, but without a full 10-year view? You would need to determine whether you should use experience, exposure or a mix of the two.



This is where SCOR's questionnaire tool comes into play. Taking the composition of our broader book, if that is representative of the composition of the account for a

particular client that we are thinking of reinsuring, we look in detail at the overall portfolio (Figure 11).

Figure 11: Split by vehicle and policy type. Focus on 2013-2014



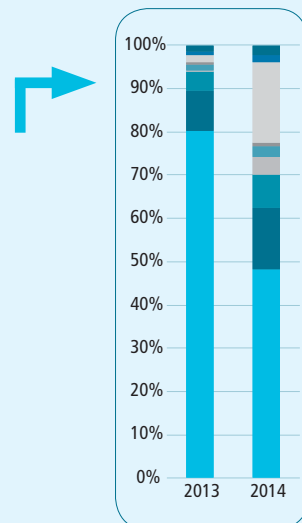
Source : SCOR Global P&C

You might not have the historical claims experience of this client for that type of business, but if you're able to aggregate it across the book, whether on private car, motorcycle or coach, for example, you can then get into more granular analysis. SCOR has derived its view of pricing on the portfolio by layer, by type of vehicle and, if there is enough data there, by age as well. SCOR feels relatively comfortable basing its rate on weighted attributes for that portion of the book,

and takes these from the individual company's own experience. In some cases where the initial intention is to take that individual experience up to a certain point vertically within the program, experience runs out (Figure 12), but before this point is reached. If this happens, the experience gathered can be interlaced with the exposure view gained from the entire book. Because the uniformity of data has been received from elsewhere, it can be interlaced by line of business or age up to a certain level within the program.

Figure 12

Unl vs 25m			
15m vs 10m			
5m vs 5m			
3m vs 2m			
1m vs 1m			
1 m retention	Private car	Motorcycle	Coach
Usable and relevant data, hence price able using experience			
Data gap for a variety of reasons, hence exposures could be used			



Source : SCOR Global P&C

Motor compensation practices

One last factor to be reviewed relates to compensation practices. Methods of compensation differ greatly between countries and market practices. The more mature markets tend to have a different way of settling large bodily injury claims compared to others. This can be seen from the following methods:

- **payment on a lump sum** basis, with the likelihood that the size of compensation will be approximately proportionate to the value of the claim

- **annuity payments**, linked to the length of human life – this has the advantage of following the victim through their life, but transfers risk from the victim to the insurance company

The tail risk associated with uncertain life expectancy has to remain somewhere in the insurance claim, which may have an influence on the ultimate level of pricing on the market and on reinsurance pricing. The table in Figure 13 clarifies this breakdown.

Figure 13: Methods of compensation

Type of settlement	How catered for by reinsurance contracts	Who carries the life expectancy risk
Lump sum	Pay as paid	Claimant / state
Annuity	Capitalised	Insurer
	Pay as paid	Reinsurers

Source : SCOR Global P&C

Lump sum settlement considers that a certain percentage of bodily injury corresponds to a certain amount of payment, which is paid as capital and transferred from the insurance company to the reinsurance company, and then applied to the reinsurance contract, regardless of the situation of the claimant over time.

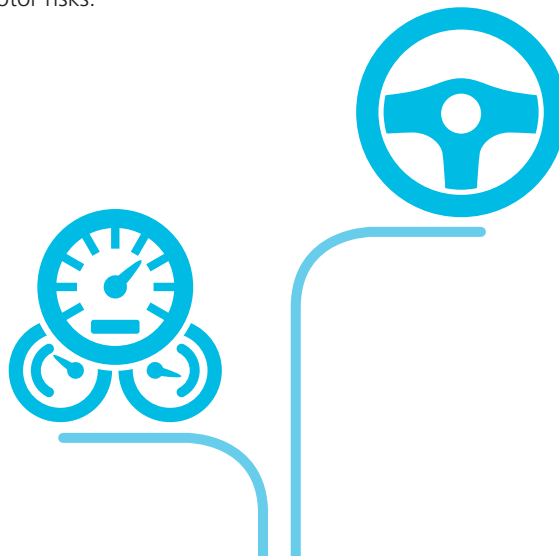
Annuity involves a different split of the settlement by insurance and reinsurance. The claim is capitalized and therefore has continuity. This creates a higher level of uncertainty for the insurer and reinsurer, which has an effect on pricing.

Concluding remarks

As we have seen, motor reinsurance techniques remain very traditional, relying on a tested approach, and a long history. However, motor reinsurance is highly dependent on location conditions and environment, as well as individual market specificities:

- Having a full understanding of the role of ancillary products in the overall profitability equation of an insurance company is key to genuinely appreciating the underlying nature of motor risks.

- The amount and quality of information are critical factors generally speaking, and in particular for non-proportional reinsurance pricing. Actuarial science is well established, but reinsurers typically cross check approaches and data sources, based on their knowledge of local legal, regulatory and economic conditions, to form their own views of risks.



7

AUTONOMOUS VEHICLES AND THEIR POTENTIAL IMPACT ON INSURANCE

RALF ROESCH
Practice Leader Casualty Treaty
SCOR Global P&C

Benefits

According to various studies¹ and statistics, autonomous vehicles could present significant advantages in terms of road safety. In the US, for example, studies suggest that over 90% of accidents are actually caused by human error, while in the UK traffic accident statistics show that cars with driving assistance systems have 30% less accidents.

In addition to a substantial reduction in losses caused by traffic accidents, autonomous cars would also be very likely to reduce the total energy consumption

of vehicles through more efficient driving, as well as improving general productivity (better use of road space, less congestion, etc.).

Because of these potential benefits, autonomous cars have been tested in the US, the UK and Germany. In the UK a larger test will be launched in 4 major cities as of 2015. At the Volvo headquarters in Gothenburg a testing phase has begun phase for 100 vehicles, targeted to drive autonomously in part of the city by 2017/2018. This trend will continue and is likely to increase.

Obstacles

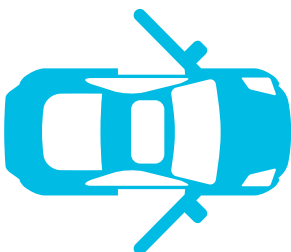
Nevertheless, there are still features which could prevent a rapid move towards the use of autonomous vehicles in traffic.

Very simply the price should not be prohibitive, but in the US an additional charge of more than USD 3,000 would reduce interest in this technology considerably². Other reasons are more vague but should be addressed nonetheless; the first is the perception and image of a car as a tool to express personal freedom, which might

be challenged by assistance systems. The second is a general distrust of new technology by the public.

This phase of distrust is not without precedent in history. Bear in mind that, in the 19th century, many discussions were held about the reliability and safety of trains. Despite the obvious increase in productivity and reliability, concerns about the impact on health were raised. Some doctors even claimed that speeds in excess of 40 kilometres an hour would be fatal for humans.

1 - For the US: census (2012), Choi et al (2008), NHTSA (2007)
2 - J.D. Powers and Associates (2012)





The largest obstacle is most likely the development of law and regulatory environment

Currently, legislation and regulations are pretty clear in most countries: a driver must have total control over a moving vehicle at all times. Some countries have nevertheless decided to support this new technology. For instance, autonomous vehicles are allowed on roads in California, Florida, Michigan and British Columbia. The UK has allowed testing on public roads since 2013, even though its regulations have not changed. South Korea has pushed this concept even farther, developing an ethical code for robots in 2012. This code ensures that a human being can assume control over a robot at any time and that all personal information is safely stored and encrypted.

Most countries, however, have no legislation or regulations with regard to autonomous vehicles. Their legislation has remained in line with the Vienna Convention of 1968, during which several countries agreed that every moving vehicle shall have a driver and that every driver shall at all times have full control of his vehicle.

Moreover, EU regulation 70/311/EWG on electric steering systems in vehicles further narrows the potential use of autonomous vehicles in the European Union.

Basically, most legislation is not yet prepared or adapted to allow autonomous vehicles on public roads.

An exception to this is the state of Florida, whose legislature is intent on encouraging the safe development, testing and operation of motor vehicles with autonomous technology on public roads. Florida's legislation states that:

- "Autonomous technology" means technology installed on a motor vehicle that has the capability to drive a vehicle without active control or monitoring by a human operator.
- This term does not include safety or driver assistance systems (e.g. emergency braking, parking assistance, etc.), unless such systems allow the vehicle to drive without a human operator.
- The state does not prohibit or specifically regulate the testing or operation of autonomous technology in motor vehicles on public roads.
- A person who possesses a valid driver's licence may operate an autonomous vehicle in autonomous mode.
- A person is deemed to be the operator of an autonomous vehicle when the person causes the autonomous technology to engage, regardless of whether the person is physically present in the vehicle while in autonomous mode.

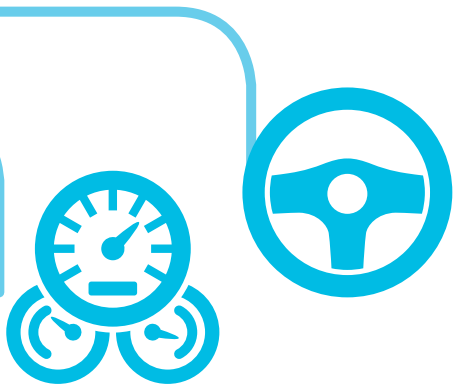
The State of Florida has drawn up specific regulations stating that autonomous vehicles must:

- be registered in the state and continue to meet the federal standards and regulations that apply to all motor vehicles;
- have a means to engage and disengage autonomous technology that is easily accessible to the operator;
- have a means to visually indicate to the operator that the vehicle is operating in autonomous mode;
- have a means to alert the operator if technology failure is detected, indicating to the operator to take control of the vehicle;
- be operated in compliance with all applicable traffic and motor vehicle laws of the state.

One regulation in particular stands out:

- The original manufacturer of a vehicle converted by a third party into an autonomous vehicle shall not be liable in, and shall have a defence to and be dismissed from, any legal action brought against the original manufacturer by any person injured due to an alleged vehicle defect caused by the conversion of the vehicle, or by equipment installed by the converter, unless the alleged defect was present in the vehicle as originally manufactured.

This is interesting because it assumes that there is a separation between the car manufacturer technology and autonomous motor vehicle technology. Perhaps this idea came about after Google's Self-Driving Car, when Google adapted a Lexus and an Audi with its technology. This regulation will not be helpful, however, when these two technologies merge.



This leads on to the issue of liability. Working on the premise that over 90% of car accidents are caused by human error (thus in most cases the human driver), that still leaves the remaining accidents which are potentially due to technical failure. The question then will be: who is to blame?

This article will concentrate purely on civil liability, as this is the most significant area for liability insurance. Currently, in the majority of automobile accidents, the driver having caused the accident is held responsible and required to indemnify the victim. However, most legislation defines driving a car as a dangerous activity, and therefore also applies the concept of strict liability, i.e. there is no need for the victim to prove negligence on the part of the driver.

Apart from the widely applied liability regimes there are a number of countries, including several states in the US, which work on a no-fault basis. The idea is very simple: insurance is compulsory (as in most countries) and insurers indemnify their own insured. This approach eliminates a lot of litigation and legal costs, and in particular allows quicker settlement for victims.

Nevertheless, there are still situations where third parties have to be indemnified, such as pedestrians.

Claims against manufacturers based on product liability have existed for many years, and major settlements have taken place, particularly in the US. Thus claims against auto manufacturers following accidents are not a new feature. It should be noted that, although autonomous vehicles are not going to come into use overnight, many cars already contain autonomous features, thus potentially increasing the exposure of car manufacturers to road accidents.

There is a clear distinction between these product liability claims and claims against the driver or its insurers. For product liability, the concept of liability does not involve driver error or negligence but consists of strict liability on the part of the manufacturer. Even more importantly from the victims' point of view, claims against manufacturers tend to be more complex and thus more costly.

As public policy requires that victims be treated fairly, it seems logical for any proposal to ensure that traffic accident victims receive quick and adequate indemnification. Taking into account the reflection above, it seems clear that a no-fault system would be the best way to ensure this. Following an accident, lengthy disputes over whether the driver is at fault (negligence) or the autonomous car (strict liability), should be avoided. It is interesting to note that Florida has a no-fault system in place.

Any such dispute would then be between the compulsory motor insurer and the manufacturer or his product liability insurer. However, this still leaves the current concerns of auto manufacturers about being flooded with claims unaddressed.

An easy way to shield auto manufacturers would be to follow the path taken by Florida, which is exemption. The underlying argument here is that the benefits of autonomous systems are so great and beneficial to society that any obstacle preventing a quick implementation should be removed.

However such an exemption could prevent or slow down further technological progress, as there is less public pressure on manufacturers. Moreover, it should not be public policy to release parties from their responsibilities.

Thus, clear and certain regulations are needed to avoid unnecessary costs. To this end, several product manufacturers are in discussions with regulators, setting up project groups to study how to solve the issue.

But even without such clear regulations, which should be the goal, underlying economics should already ease most of the concerns expressed by manufacturers:

If the studies are correct, this new technology should dramatically reduce costs related to traffic accidents (not to mention the other beneficial effects for society and the environment).

A large part of current costs are paid by drivers through their motor insurance premiums and by taxpayers (for indirect costs relating to welfare insurance).

This means that manufacturers can shift their costs relating to liability risks onto the drivers of autonomous cars, because the overall burden on drivers will be lighter than it is at the moment. The remaining risk is that the legal costs involved in product liability claims will be greater than the money saved due to massively reduced accidents. This is very unlikely looking at current costs caused by accidents, and based on the fact that more than 90% of accidents are caused by drivers. This risk could be further mitigated by incentives from authorities to the drivers of autonomous vehicles, as this widens the economic margin of manufacturers to pass on their costs to clients. Such incentives are not new at all, and in the past have included tax breaks for more environmentally friendly engines and European government incentives for taxpayers to buy new cars during the financial crisis.

Thus, despite the need for clear regulations to remove uncertainties, current and future economics should allow manufacturers to introduce autonomous technologies, even with the current liability regime (still subject to the minimum condition that autonomous cars are permitted on public roads).

For insurers, this would mean a shift of premium from motor liability to product liability, due to the probable increase in the frequency of claims against manufacturers. Current product liability insurance programs therefore probably need to change in order to better address frequency exposures.

Another area of interest to manufacturers and their insurers is product recall. In the last 10 to 15 years, the number of recalls by car manufacturers has increased almost every year, due to the complexity of the technology involved. It is a trend that will most probably continue as further technology is added to the vehicle; similarly authorities may tighten the rules for recalls as more "responsibility" is handed over to the vehicle.

The insurance concept, however, should not change. The installation of this technology in cars must also address cyber-related issues. For a start, there are privacy issues involved, as huge volumes of personal data could be stored and potentially misused. A further concern could be the malicious misuse of the vehicle itself once intercepted by criminals or terrorists. Original Equipment manufacturers (OEM) and private users would need cover for these cyber-related issues - for the latter this could probably be achieved by enhancing the motor liability policy or a private liability policy. Again, concerns in respect of data and its lawful use would not be a new feature, as this topic has already arisen through the use of telematics, and is still evolving. Much, if not most, of what we learn from telematics will also apply to autonomous vehicles. In particular, as auto insurance based on telematics is expected to play a significant role (according to the large US auto insurer Progressive, which launched the first telematics products in the US in 1998, by 2020 more than 25% of all US auto insurance premiums will be generated by telematics policies).

The issue of data handling raises the following question: Should we consider the possibility that the OEM will act as an insurer?

There have already been examples in the past where car manufacturers have taken over the handling of loans for car purchases, an activity that was exclusively in the hands of banks up to 10 years ago. Now, up to 50% of this market has been taken away from the banks. Original Equipment Manufacturers (OEM) have already shown their capacity "to do more": nevertheless, we won't see them taking Motor Third Party Liability business away from insurers any time soon, as the value chain in MTPL is more complex than in the financing of vehicles, even just considering the long tail involved in bodily injury claims. In this regard, the vast experience of insurers in terms of claims handling will not be easily replaced.

However, on the distribution side, sales side insurers might get a thread, particularly with regard to Google's recent move in the US.

Conclusion

What is even more interesting for insurers and reinsurers is that autonomous systems are likely to be extended to other domains rather than just cars. A future that includes robots in the workplace and in hospitals is not actually that far-fetched. Japan will start selling private robots, targeted to assist its ageing population. Who will be liable, if something goes wrong with these robots? Some lawyers are already envisioning the creation of "e-persons" that could be insured against these types of situations. This might then eventually turn a simple private liability policy into something pretty complex, or at least potentially exposed to some pretty complex liability considerations.

If the anticipated effects of these autonomous "objects" are as positive as the estimated benign impact of autonomous vehicles, then we should expect to see them in several areas of our daily lives, just as we can expect autonomous vehicles to be a normal feature on our roads in the not too distant future.



SPEAKERS' BIOGRAPHIES



FRÉDÉRIC BRUNETEAU

Managing Director – PTOLEMUS Consulting Group

Frederic Bruneteau has gained nearly 20 years of strategic and operational experience in 10 countries in the field of mobility services. He is the **founder and Managing Director of PTOLEMUS Consulting Group**, the first international strategic advisory firm entirely focused on connected car services. Mr. Bruneteau has completed nearly 20 assignments related to **insurance telematics** and is **one of the world's foremost experts on the subject**. He recently published an 800-page report*. Before PTOLEMUS, Frederic was managing TomTom's global Content & Services Product Line in Amsterdam. Previously, for Vodafone / SFR in Paris, he assumed several management responsibilities including Head of Multimedia Strategy & Programme Management. Mr. Bruneteau also worked for **Arthur D. Little** in London and **BNP Paribas** in New York. He is a graduate of HEC Paris and the University of Cologne (CEMS).

* For more information visit <http://www.ptolemus.com/ubi-study/> on the matter.



JEAN MARC HOUISSÉ

Head of Bodily Injury for Europe, the Middle East and Africa – SCOR Global P&C

Before joining the reinsurance market, Jean-Marc Houisse spent a large part of his career working for direct insurers in the French market. During this period, he contributed to the development of indemnification for bodily injury claims within professional groups and created a collective claims management guide in collaboration with the Ministry of Justice. In 2007, he joined SCOR as Head of Bodily Injury Claims for Europe, the Middle East and Africa. In addition, he is chair of the Automobile Commission for the Association of Professionals of Reinsurance in France.



STEFANO LASSA

Market Manager Treaty P&C – SCOR Global P&C

Has worked for SCOR for 18 years. Since the beginning he has worked in the Treaty P&C UW Dept. He has been involved in European treaty business and has focussed on the Italian market since he became market manager for this country (UY 2000). In this context he is responsible of both Property and Casualty including Motor business in the country. Since 2009 he has also taken the role of practice leader for the Environmental underwriting issues within the Casualty Practice of the underwriting Management. He represents SCOR in the technical meetings and forums both environmental pool in France (Assurpol) and in Italy (Pool Inquinamento).



BRUNO LABUZAN

Chief Executive Officer – CAAREA

Bruno Labuzan, 59, has spent his entire career in insurance. After studying law, Bruno joined Cabinet Eurosud Assurance, a brokerage company specialising in industrial risks and vehicle fleets. He quickly became Director and then CEO of the company. In 1991 the Compagnie de Navigation Mixte, at the time the second largest financial holding company in France, appointed him Chairman & CEO of the insurance companies CPA Iard and CPA Vie. One of their subsidiaries was Agir International, of which he also became Chairman & CEO. At the time, Agir International provided mechanical cover to auto manufacturers such as Renault, Volvo, Bmw, Fiat, and so on. Today, Agir is a subsidiary of Covéa. In 1996, he decided to leave the Navigation Mixte group, which had merged with Paribas following a takeover bid, and to move into growth companies backed by venture capital providers. He was approached by the Icare group, a specialist in vehicle services. He bought into the company's share capital and became CEO. His mission was to transform Icare into an insurance company and to promote its growth. Considering Icare to be too Franco-centric, despite its leading market position, Bruno decided to create Caarea in 2002, ex nihilo. SCOR acquired a stake in the share capital of Caarea in 2004, and together they have developed an international strategy.



EIKE MEERBACH

Pricing Actuary – SCOR Global P&C

Dr. Eike Meerbach, born 23.07.1974 in Berlin, moved to the reinsurance industry in 2008 after having had a research position at Free University Berlin in the field of applied mathematics with a special focus on bio-molecular systems. He started as an Underwriter for Structured Reinsurance at Hannover Re and became P&C Pricing Actuary after moving to SCOR Global P&C in 2011. His main focus is on treaty pricing in the Middle East and South Eastern Europe region. The latter one being the motivation for him and his colleague Hannes Basler to start research about the modelling of the Green Card exposure. Dr. Eike Meerbach is certified Actuary (DAV).



PHIL MILLER

Senior Treaty Underwriter – SCOR Global P&C

Has worked for SCOR for 27 years. After a short spell in the facultative engineering department he moved to treaty underwriting in 1990. He is responsible for the company's UK and Irish motor portfolio, both proportional and non-proportional. More recently he has also taken on the role of practice leader for the motor line of business within SCOR's underwriting management division. This is a global remit with the exception of North America.



RALPH ROESCH

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Ralph graduated in mathematics from the University of Freiburg, in Germany, and has more than 20 years of experience in liability reinsurance both treaty and facultative. Ralph has been working for SCOR since 2006.

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