

# INSURANCE RISK & OPERATIONS, EUROPE 2015

Published by



JUNE 2015



Considering the implications of Solvency II and the extent to which insurance professionals need to comply with major regulations whilst optimising business performance

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# SECTION 1

## SOLVENCY II & BEYOND

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### 1.1 INTERVIEW

The EIOPA perspective on internal models

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How are insurers gearing up to ensure complete readiness for the enforcement of Solvency II?

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## 1.1 INTERVIEW

### The EIOPA perspective on internal models

#### Interviewer



**Noel Hillmann**  
*Managing Director,  
Clear Path Analysis*

#### Interviewee



**Andrew Candland**  
*Head of Oversight Unit,  
European Insurance and  
Occupational Pensions  
Authority (EIOPA)*

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**Noel Hillmann:** Thank-you for joining me today Andrew.

I'll begin by asking, there is no standard definition of how an Internal Model should look. What's the closest in terms of a definition that you can give?

**Andrew Candland:** I would probably give you three ways of looking at it.

First of all with my regulatory hat on, in a sense the answer is there in the Solvency II Directive, within its principles. Then we have a lot of guidance on what should be understood by those principles and how they should be applied.

The second way I would look at it is to say, the answer is in the first word - "internal", so it's really for the firms to decide how the models should be designed and look like. Clearly it must be tailored to their risks, the way they assess those risks, the way they measure them and also the way in which the quantification fits in with their own risk management framework.

In terms of what the ideal model looks like, there are three things. It's got to be technically good. Its performance should be independently assessed and also should carry on being assessed on an ongoing basis. Lastly, it's got to be a model that the firm understands, including its weaknesses. Alongside that, the model is trusted enough to use to run the business. Those three points neatly map onto the six principles that are indicated in the Solvency II Directive.

**Noel:** How will internal models be reviewed against the standard model framework?

**Andrew:** The first thing is that, all firms should be asking themselves the question as to whether the risks that they face are the same as those in the assumptions underlying the standard formula. EIOPA has published a paper outlining those assumptions.

As to what supervisors do, it's certainly the case that a number of supervisors have asked firms to supply a breakdown of their standard formula Solvency Capital Ratio (SCR) alongside the internal model SCR. Of course the question is, why and what are they going to do with that? Our understanding is that supervisors are not considering the standard formula as "right" and just examining how wrong and how different the internal model is. The supervisors rather say "the standard formula is something we understand and, hence, it is a good starting point to explore the assumptions that the internal model is using". It's really there as an anchor point rather than the "right" answer.

**Noel:** Do you have a certain viewpoint that due to many insurers trying to move towards exotic premium areas and moving into more exotic investment areas, that the standard model framework is going to need to be updated fairly quickly? Although we're getting to the final rules there is going to be a need for a lot of upgrading on those definitions as insurers try to move further and further away from more traditional insurance lines?

**Andrew:** Certainly a review of the standard formula is built into the Solvency II directive and even now we have a case in point. We've said publically that we're considering infrastructure investment and how it's included in the standard formula, so that is one area where EIOPA is doing some work at the request of the European Commission. We'll send our recommendations later this year.

**Noel:** It's been said by insurers we've spoken with that it will be a learning curve for both insurers and supervisors to test the internal modelling framework? What is it insurers need to be mindful of to make a convincing case?

**Andrew:** I certainly agree that it has been a learning curve and it will continue to be so, almost indefinitely. It's probably fair to say that part of that learning, if we look back say five years, when people really started to get underway with internal models, is that it's been far more challenging than anybody thought it would be, probably both for firms and regulators. One of the consequences is that even in the time since people started building their models, best practice has already evolved and maybe some of those models that were cutting edge are no longer quite at the cutting edge.

For the second question of how to make a convincing case, something I often say is that in order to convince the regulators you have to explain how you convinced yourself as a modelling professional. How have you convinced your board? How has the validation process been convinced that the model you're using, both in terms of its individual components and also in its

entirety, is appropriate and meets the tests and standards? Clearly the independent validation plays an important role in this, but if you've not been able to convince yourselves, if you've not done the work internally, then you're unlikely to be able to convince the supervisors.

**Noel:** On a slight side point, there's going to be a lot of pressure on insurers to reveal what can be seen as some very cutting edge and confidential information on their risk modelling techniques, how they are working to get a cutting edge advantage over competitors. How will the regulators protect insurers against the risk of sensitive and proprietary data being released? We've seen this issue raised quite a bit in the asset management sector, where staff who are validating investment managers processes subsequently move to private industry and take up a post.

**Andrew:** Certainly all regulators will be bound by some form of professional secrecy. We also have it here for EIOPA staff. But in a way there's no difference from people moving on from the regulator compared to people moving away from the firm. Clearly there are fluid employment markets and people move on, it's not purely a regulatory problem.

**Noel:** Ok, so what levels of 'adequacy' of information must insurers go to, to be seen as satisfactory to supervisors?

**Andrew:** I would mention materiality and proportionality; this should always be the point that we would expect to see insurers start from. Where there are risks that are relatively simple, a fairly small part of the overall SCR, then the level of justification and convincing should be smaller and of course the reverse is true.

The other aspect in terms of information is, it comes back to this idea of the model being appropriate for the risks and therefore it's important that the simplifications and

assumptions on which models are based are really brought out in the documentation. Therefore everybody involved, both within the firm and also the supervisor, has a really clear sight on why the models are appropriate and what their weaknesses are, when the models no longer perform and are inappropriate.

**Noel:** The definition of risk is evolving with financial crime; cyber risk is still an unknown quantity. What new areas of risk most concern you and how do you feel the treatment of those will develop over time?

**Andrew:** In a way it's not so much the definition of risk that's evolving, it's simply the world we live in that's changing. Criminals are always looking for new ways to become rich dishonestly!

Looking at another area, where we see low investment returns insurers become more innovative and invest in new, riskier asset classes. As we mentioned, that brings new risks.

From an internal model perspective, there are two big questions. Firstly, are these risks being included in the model? The second more subtle question is, does the insurer have the appropriate framework in order to detect when the risks on their balance sheet are actually diverging from what they've built into their model, as will be the case when new risks appear in the world and therefore start to have an impact on the balance sheet. Again, it comes back to the importance of validation and the Profit and Loss (P&L) analysis.

Looking at the wider question, really the question isn't purely an internal model question, all I'd say is that you'd want to have insurers watching these new and emerging risks long before the internal model tells them about it. They should be finding these risks, spotting them early enough that they can put them into their pricing framework and change their underwriting where appropriate. It

should be a case of the risks coming onto the balance sheet at the right price.

**Noel:** How is the regulator setting themselves up to spot these emerging risks? Of course insurers need to be conscious of it and cognisant of its impact on their pricing framework. But the regulator of course needs to keep up with what the industry is doing in order to provide a satisfactory oversight.

**Andrew:** I'd give you an example: low interest rates; EIOPA had been raising the issue of a prolonged period of low yields since it came into being in 2011. In 2013 EIOPA issued an Opinion on it and national supervisors reported back last year on the steps they were taking.

We also watch what national supervisors are doing and share experiences. In the UK, for example, the PRA wrote to insurers last year to ask questions about the impact of climate change.

**Noel:** Thank-you Andrew, we'll finish just there. Thank-you for sharing your thoughts.

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## 1.2 EXPERT DEBATE

# Utilising internal models over the standard model: what can be done now to increase efficiency in application once approved?

### Moderator



**Noel Hillmann**  
*Managing Director,  
Clear Path Analysis*

### Panellists



**Tom Wilson**  
*Chief Risk Officer,  
Allianz*

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**Noel Hillmann:** Thank-you for joining me Tom for this debate.

Can I begin by asking you to provide me with an overview of your current progress in developing your internal modelling structure and how it is that you're developing greater efficiencies within that?

**Tom Wilson:** Allianz is an internationally active insurance group and it is one of the largest insurance groups in the world. We operate in over 70 countries with lots of operations in subsidiaries as opposed to branches, which means that the complexities we face are both geographic and product in nature. The fact we have subsidiaries also means that we often times have local systems, products and designs, etc.

It is a complex organisation in terms of products and geographies, with a lot of local administration systems and local modelling capabilities. We face different issues than a purely regional or domestic insurer who may focus on one or two lines.

The challenges that we face, in terms of internal models, is marshalling them together for the Solvency Capital Requirement ("SCR") and the market value balance sheet calculations, marshalling this diverse and complex web of business operations into a closing process, which is efficient, controlled, timely and accurate. A challenge that runs alongside this is that we face doing this marshalling as part of a regular closing discipline coordinated with our other local and IFRS closing activities. These are at a high level the big challenges.

One of the aspects that we have been focusing on is that of the cash flow modelling performed for premium reserve risk monitoring. The life business as well requires a lot of understanding of the local products, portfolios and experiences. These experiences are in fact local whereas on the other hand, a bond issued by a corporate issuer, the interest rate and credit risk for that bond is relatively similar across different locals. We have chosen a business application architecture, which allows us to capture local specificities and global synergies at the same time.

We have one instance of a market risk system, credit and credit portfolio risk system. We have a tool kit for modelling premium and reserve risk as well as cash to cash flows. However, these tools are parameterised locally based on their local needs.

In terms of gaining efficiencies, it is important to look at controls as well as synergies in the property business application architecture. You need to recognise where you can have globally supported synergies versus the need for local expertise. Even if it is a need for local expertise, it's important you can actually provide the tools, which are locally specific.

Another area where efficiencies have been focused on is getting the local subsidiaries to use the tools locally. If we take a consideration for say a life business, normally one has to pull transactions either or alternatively condensed into model points. You have to pull transactions out of the administration systems and put them into a reporting environment which

is segregated from a development environment and testing environment where typically end user computing such as profit, VIP tech or Moses is being used to model those cash flows based on product specific models. You then need to populate databases that are capable of interfacing with group needs, whether they be with regards to QRTs or input for risk aggregation, etc. That is inherently a local process for us, simply because we are geographically diverse enough and the experiences are local that we can't keep global libraries. I am not in the business of keeping global libraries to support every new product innovation across the globe. There is a significant amount of work required to industrialise local processes, to leverage the premium and reserve risk. This is as well for cash to cash flow systems from administration systems, to model point, to line of business reduction, leveraging historical data for parameter and assumption updating. This goes all the way through to calculation point and optimising the run time in terms of the cash to cash flows and ultimately populating databases, which need to interface with the group. All this needs to happen within a controlled environment, including the segregation from development of testing systems and from final production systems and the control of model and assumption changes into the final reporting systems. The automation of the various interfaces between the end user environments, the host mainframes and the database platforms that are used to feed the group.

The second big area in addition to business application architecture overall for the systems is through support for Solvency II.

Another area is within the local systems, optimising and making more efficient the reporting processes there.

The other big area is around aligning the processes and leveraging as much as possible, other than closing processes for investments as well as for the market value balance sheet. There are other components that are getting closed on a regular basis, like our IFRS reporting which is closed on the same basis as our market value balance sheet. Granted, we do override the technical liabilities and we do remove things such as differed acquisition costs as well as intangibles such as goodwill. However, we start from the IFRS. Leveraging existing reporting processes, in terms of our IFRS general ledger and our market value balance sheet, leveraging our reporting process for our global investment derivatives portfolio to the same reporting process to feed the risk system, is therefore our third big source of efficiency.

If I had to summarise, number one would be business application, architecture in terms of the group wide system. Number two would be improving operations, controls and efficiencies with the local modelling, predominantly on the liabilities side of the balance sheet. Number three would be leveraging and consolidating and getting synergies with other reporting processes for IFRS reporting, which would be with the market value balance sheet as well with regards to investment reporting.

**Noel: What advantages are gained by the use of your internal modelling framework versus the standard model? How will you gain competitive advantage through the use of your internal model?**

**Tom:** The advantages are two fold. Firstly, it is a better representation of our actual business. If we take property

and casualty, we model premium reserves line by line and we have a significant amount of experience globally but also locally. This is because we've been established in many countries for a significant period of time. We have got a significant amount of experience with our own experience. If I consider the advantage of property and casualty roughly, around a third of the advantage is actually better experienced based modelling of a premium reserve risk. Also, the modelling of the attritional of the large and catastrophe losses specific to our business, risk profile and to our contracts, because we use an excess of loss as opposed to a quota share. You get better net line modelling on a line of business by line of business basis.

The second category where you get a benefit is by recognising the correlations or diversification between lines of business within a company. Here we use a factor based approach, which actually tries to decompose based on expert judgement as well as historical data the adverse claims development into claims inflation that is linked to various indices as well as other factors such as pricing cycles, etc. This allows us to get recognised on a better base the actual diversification, or in the case of Property and Casualty (P&C) cycles, the lack of diversification between a claims development. This is around a third of the development and the last third is around recognising the diversification across operating subsidiaries across the group where a windstorm in Europe is not likely to impact a California earthquake. This example highlights the role of better modelling of our explicit book of the business and explicit experience as well as the contracts associated with them. For example, excess of loss versus quota share insurance combined with a better recognition of the diversification benefits specifically for property and casualty, gives us an advantage and better reflects our actual business.

Another advantage is that the internal model is better at giving insights towards asset liability management. If

**"We have got a significant amount of experience with our own experience."**

you go to a standard model and you begin to consider transitional, it is not clear to me whether you are going to get insights in terms of an appropriate asset liability management structure. If you have read EIOPAs guidance, internal model reform should reflect sovereign risk, although limited guidance is given with how to reflect that sovereign risk. Nonetheless internal models have the possibility to actually shine a spotlight on large concentrations removing, them from the risk free category to the non-risk free. Another example is that the ultimate forward rate has not been something that has been chipped into stone, as this was set as part of a political compromise as well as long term expectations. In today's environment it is not clear that a 4.2% ultimate forward re investment rate is actually credible. The internal model allows us to take considerations in regards to breaking this ultimate forward rate. These are two examples of where it gives you better Asset Liability Management (ALM) impulses.

Another example is in terms of foreign exchange netting as well as netting across books. With the standard foreign exchange netting model you aggregate to the absolute sums and that is your foreign exchange exposure. But if you are running a positive exposure to U.S dollars versus an offsetting exposure to U.S dollars elsewhere from a group perspective, those two net. It isn't that they are diversifying as they actually net and you are less exposed on an absolute basis. You don't get this under the standard model.

These are all examples of how the standard model versus the internal model may give different and inappropriate impulses with regards to asset liability management. These are the two big areas where we see value and significant value in terms of the internal model. They are better modelling of our positions both in terms of contractual terms as well as expenses and diversification. Also they give better modelling in terms of ALM impulses.

**Noel: Post Solvency II's implementation, what further work do you think will be required to improve modelling further, as new priorities take hold?**

**Tom:** I believe that there will always be a need to upgrade and improve our modelling. We have a list of tasks that we need to work on, in terms of remediating observations but not failures identified by our college of supervisors. It's not a case of remediating but addressing some observations by the college.

In addition, parameter updates and the introduction of new products and even a merger is considered a model change under Solvency II, so I anticipate that we will continue to need to update our modelling to reflect changing business requirements like new products, acquisitions, portfolios, etc.

I am also optimistic that with more discipline around the model and parameter assumption change calendar, that we will focus more on the risk resources away from modelling and maintaining and developing the model and more towards risk management. I make that distinction because managing the model is not the same as managing the risks. It would be good to be out of the project orientated or the internal model orientated phase or work, in terms of getting the documentation, validation and fine tuning of the models to meet regulatory approval.

**"let's face it, interest rates have dropped dramatically, credit spreads are at an all time low and one could argue whether or not we are in a fixed income and equity bubble at this point in time."**

If risk managers take their heads up from narrowly focusing on IMAP to looking at the broader environment, as let's face it, interest rates have dropped dramatically, credit spreads are at an all time low and one could argue whether or not we are in a fixed income and equity bubble at this point in time. I am optimistic that with a stable Solvency II model and a model change and control process that makes us all the more disciplined. We will be able to take resources away from the continual management of the model and put it back into the management of the business. That is where I look forward to gaining a lot of the benefits post Solvency II, in terms of being able to get a project mode for IMAP into focusing on the business.

**Noel: Thank you for sharing your thoughts on this subject.**

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## 1.3 ROUNDTABLE

# How are insurers gearing up to ensure complete readiness for the enforcement of Solvency II?

### Moderator



**Noel Hillmann**  
Managing Director,  
Clear Path Analysis

### Panellists



**Markku Miettinen**  
Chief Risk Officer,  
LocalTapiola Group



**Sylvie Focquet**  
Head of Solvency  
II Governance and  
Validation, AXA Belgium



**Gez Llanaj**  
Director, Mazars

**Noel Hillmann:** What stage are you at in your individual preparation or Solvency II and what hurdles are you still to tackle and overcome?

**Markku Miettinen:** We are proceeding to our schedule and have done a lot of work on Solvency II. We have worked on the requirements like governance, Solvency II functions, risk management and ORSA as well as the written policies that are needed for our company.

The focus for this year and the next is around reporting. This year we have Solvency 1.5 and with this we are on schedule whilst at the same time we are preparing for the reporting requirements coming next year.

The biggest hurdle we have is related to reporting because the reporting templates and the technical requirements aren't yet complete. Next summer or in the autumn these will be final. It is now a difficult situation not only for us but for our system suppliers because they haven't been ready with the new requirements.

**Sylvie Focquet:** We are in the final stage for approval of our models. Actually in the coming two weeks AXA will apply for its internal model. Pillar I and II are already well developed but Pillar III is perhaps the most uncertain, given the uncertainties on some regulatory requirements which

aren't yet finalised. Those will only be finalised in July.

There are also regulatory uncertainties for the Pillar I, particularly around the interpretation of the Solvency II directive and around some options left to the national supervisors. For example, it is not clear at this stage if we can use the volatility adjustor in the computation of our capital requirements with our internal model as we can use it in the best estimate (in most countries). This could have a big impact on the Solvency II ratio.

Another issue is around competitive advantage, as the alignment with our competitors who are using the standard formula as opposed to an internal model of their own could put us at a disadvantage. This is because there are more compliance requirements for the firms which have an internal model. For example, the companies with an internal model should normally have a capital charge to take at least partially into account the risk of government bonds, which is not the case with the standard formula. Therefore there is a discrepancy over this. Linked with this point is the question around the business case for having an internal model and the costs of having one. You can have a capital charge which is not so different than the standard formula. This can be an issue for the company because there is a cost for raising an internal model.

Nevertheless, by having an internal model you can better manage the risks and know your risk profile.

Another aspect is related to context as because we have a low interest rate environment there is also a question about whether Solvency II is adapted to this. Is it a good time to launch Solvency II knowing that with Pillar III the companies will have to disclose their Solvency II ratios to the public? That can lead to some issues in communicating the volatility of the ratio to the public.

**Gez:** We, at Mazars, are seeing different stages of firm's Solvency II preparation, from large internal model application insurance groups to medium to smaller insurance entities across the UK and Europe. The Solvency II preparatory phase has contributed extensively towards establishing the governance, processes, knowledge required for Pillar I and Pillar II and the industry has benefited from such an approach. However, with only seven months remaining to complete a transition to the Solvency II regime, significant challenges remain, such as the outcome uncertainty of internal model or approval of other applications, either already submitted or to be submitted by the end of May 2015. The first results of ORSA have not been satisfactory for all the firms from a Solvency II capital adequacy perspective or the appropriateness of standard formula.

We have seen a significant number of firms, which are currently moving towards applying for USP's, providing a more sensible capital adequacy output for them. The most concerning and the biggest hurdle remains the operational readiness of Pillar III reporting. The majority of firms have not grasped the extent of work required to establish and industrialise the processes, systems and data governance framework in order to meet the timescales for regulatory reporting in 2016. The delays regarding final reporting templates and XBRL taxonomy has not helped, but the operational readiness of Pillar III is lacking behind. This is mostly due to the fact firms have not yet properly brought together business and IT with a common objective to establish an end-to-end system and data processes that enable a timely, sustainable and cost effective Solvency II reporting framework. We expect reporting templates to remain the same in this final stage and XBRL taxonomy to be swiftly integrated and provided by any of the reporting software packages on time for 2016 quarterly submission.

**Markku:** Another hurdle is that the Solvency II regulations are intended more to stock market companies than mutual companies and that is why the regulations are not precise for our situation. There are also quite big differences in the mutual groups of the various member states. It is difficult to know what the regulation means for our groups. One of the problems relates to eligibility of companies own funds to group own funds. It is quite a difficult question to answer and needs to be done case by case.

We have quite small companies, 20 small ones, and we don't know what the proportionality principle means exactly and in which sense we can take advantage of it. What it means for our governance requirements; how we organise the risk management or other Solvency II functions; whether we can do this in a more centralised way or if we must have in every company some resources. From the cost point of view

these are all significant questions. The size of the companies being effected are very small.

**Sylvie:** Yes that is something that I can confirm as being the case too. When we speak to the college of supervisors, who have to decide about the internal model for AXA, we can see that they have different views on the interpretation of Solvency II. There might be situations for example where we would have an agreement with our own national supervisors but where we would not have confirmation from them that ours is a good interpretation because later on there would be a global agreement at the college level.

With the low rate environment there is also the fact that it is quite difficult now to find attractive returns, especially if you take into account the Solvency II rules which means that you are limiting the assets in which you can invest with enough flows in capital. There is a big effort still to be made with regards to areas like infrastructure projects and securitisation. Now it is very costly in terms of capital charges from Solvency II. There is a need for the insurers to invest long term in different assets than what we were sourcing initially when Solvency II was made.

**Gez:** Distribution of own funds between group and subsidiaries remains an area that needs considerable attention by the firms, so is the complexity of Group supervision. Sylvie raised a good point on long term assets investment for life companies. For non life firms, the ORSA process is helping them to review investment strategy and place the projection and scenario analysis at the forefront of 2015 ORSA preparation.

**Noel: What readiness assessment benchmarks are you using, i.e. minimums or ability to deal with more advanced risk challenging events?**

**Sylvie:** We have a model that we call a 'maturity model' to assess our readiness in the different risk categories. This model takes into

account the modelling part, so whether it is properly modelled, but also the use of the model and whether there are any limitations as well as to the production and speed of the numbers. For now we can see that there is a need for improvement in speed, as we spent too much time in producing the numbers. There is also a consideration for how we use it in our underwriting and claims management procedures.

What we have identified is that, now we have a good level of readiness but there are improvements which can be made. Production in speed being one area but linked with that is the proactive use of the modelling within the business. This means that for now we use the model mainly as a second opinion, for example when an investment is made or a product is developed. However it's used less as a first opinion from the business. It is important to develop proxy or tools which are easy to use by the business so that they can really leverage on what is done by the risk team on the internal model.

**Markku:** We are using the standard model for our companies and mainly, for business purposes, our internal models. We are not aiming to use them for Pillar I calculations. Of course we will use as much as is possible in our business steering.

In principle for Pillar I and III it is the compliance which is our emphasis but for Pillar II we will try to embed it as much as possible in the business. We have succeeded quite well in that and that was an essential part of our last autumn ORSA process.

Getting prepared for the ORSA requirements was very useful, as we took the results from the planning processes to the ORSA report and used the ORSA process to help us develop our business processes even more.

We have many small companies and it is quite a challenge in the first year, that all of them will have compliance with those necessary requirements. We

aren't aiming for more than that, except with the ORSA and the practical implementation of risk management we are aiming to gain advantage in the business.

**Gez:** As the firms progress with Solvency II, we have seen Internal Audit placing Solvency II readiness at the top of their agenda and being more involved in the process (assisted by outsourced solvency II subject matter experts) conducting quarterly Solvency II readiness review. A Solvency II readiness benchmark has been created based on considerable clarity across three levels of the Solvency II requirements, Delegated Acts and local supervisory policy statements. There is a great demand for a holistic readiness benchmark since all the work streams and on-going Solvency II project work needs to converge into one complete transition, which is the aim of an integrated solvency II framework. This approach is helping insurance firms to establish assurance regarding solvency II compliance. In the meantime, Risk and Capital Management is progressing further ahead through forward looking approach, stress and scenario testing.

**Noel:** Given the immense resources placed on preparing for Solvency II's implementation, how do you anticipate to re-allocate resources and talent that has been dedicated to Solvency II preparation post your individual readiness stage?

**Sylvie:** When we speak about reallocation, what I have been hearing more about is decreasing the number of resources as many feel that when Solvency II is in place then the project will be finished and then there is no more work to do. There will still be a large quantity of work to do but the nature of the work will change and the profiles that we need will change. As part of modern development we will still need to develop the model because as the company and products evolve things will need to change. However, this will be smaller than in the preparation of the application for

the internal model. Instead we will have more users of the model that will have the ability to extract the value from the internal model as well as advise and train the business so that they can also use the model.

We also need people who can analyse and interpret the results of the model. For that I would make a big distinction between the compliance and the economic view of the numbers because even with an internal model there are some rules that are applied, like the volatility adjustor which we can ask to have it but in fact for the company it might be better to have a matching adjustment. It is more difficult to apply for this because of regulatory reasons. Perhaps the company wants to know its ratio under the matching adjustment and not only under the volatility adjustment, so that they can make a review in terms of real risk management and not only compliance results.

**Markku:** It will take two years until all the quantitative or narrative reports needed in Solvency II are produced at least once. Therefore, we will still need some resources for this over the next two years for the development phase.

We don't have as much resource for the production stage of Solvency II and actually most of those who have taken part in this process also have a lot of line responsibilities and have done this alongside the development period.

In our group we have many companies and the main resources who have done this development have been the centralised resources. In the production stage we will do all reports and other aspects for more than 20 companies, so we do need a number of resources for these areas all the time as well.

When everything is ready we won't need so many of the external resources and of course there is a normal reduction of the resources but we don't see this as being a big problem.

**"When everything is ready we won't need so many of the external resources and of course there is a normal reduction of the resources but we don't see this as being a big problem."**

**Sylvie:** In parallel with Solvency II there are some other projects which will have an impact on the risk management team, especially that we now have a system of risk for insurers. With the requirements to develop a recovery and resolution plan, it can impact the way that we do our ORSA and how we set our risk appetite. It could also affect our monitoring as well, in terms of liquidity where we will have to pay much more attention to liquidity needs, especially if you want to use some Long Term Guarantee measures like the volatility adjustment.

**Markku:** Almost all of our resources who have worked for the past couple of years on these compliance requirements did not have time to focus on the risk based performance management or internal business models. When these compliance requirements have been met we can focus on other areas that are more useful for business purposes.

**Sylvie:** A trend that we see is with regards to the digitalisation of our society. To gain a competitive advantage it is important to extract the good information from the tools and data that you have. In this sense there will be some resources allocated to use of the model but also to data mining which will also have an impact on the risk management.

**Gez:** We see this question asked often and yes there will be some change in terms of resources this year and in 2016. Solvency II work does not stop on 1st January 2016 and despite all the efforts placed on the 2015 transition period, there will be a significant amount of work going forward. Reporting is the most obvious example but similarly work will continue to embed ORSA process, improve Risk Management system and capital modelling. What we have noticed is that there is a trend towards a slow-down in contract work and partnering with one management consultancy firm in order to create advisory consistency and sustainability for the remainder of Solvency II work this year and next. A full knowledge transfer programme is at the core of these programmes to ensure that insurance firms are self-sufficient on all aspects of Solvency II. BAU resources who are also working on Solvency II are stretched and their remit is focussed in a narrow area of their expertise. The new regime is a living environment and although there is some restructuring to ensure that best skills are used in the context of the new regulatory requirements, we have also seen a shift in terms of level of resources needed to take Solvency II forward such as greater capital management skills, integrated risk and finance skills, integrated Solvency II and IT data governance skills, investment management skills, digital technology skills that will demonstrate Solvency II use test into day to day business going forward.

**Gez:** In the UK, Senior Insurance Management Regime is helping insurance firms towards such allocation or restructuring of resources through the preparation of a governance map and the review of skilled personnel across all significant functions that will be crucial in executing the operational business plan for the next three to five years.

**Noel:** Thank you both for sharing your thoughts on this topic.

"Solvency II work does not stop on 1st January 2016 and despite all the efforts placed on the 2015 transition period, there will be a significant amount of work going forward."

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# SECTION 2

## FRAUD PREVENTION

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### 2.1 INTERVIEW

Improving fraud prevention measures in claims management

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## 2.1 INTERVIEW

# Improving fraud prevention measures in claims management

### Interviewer



**Noel Hillmann**  
*Managing Director,  
Clear Path Analysis*

### Interviewee



**Karl Helgesen**  
*Casualty Claims  
Director, Zurich  
Insurance*

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**Noel Hillmann:** Why do you feel fraud has been on the rise in the area of claims management and what can insurers do to address the problems?

**Karl Helgesen:** The reality is that the claims environment still presents a lucrative opportunity for organised and opportunistic fraudsters. Despite legal reform over the years, sufficient costs remain within the system and these costs ultimately fuel fraudulent claims.

Another driver is the nature of the injuries associated with these claims. If we take whiplash as an example, often these claims are associated with a lack of credible medical diagnosis and the judiciary are reluctant to go against medical advice so this makes challenging the claims problematic.

Given the nature and frequency of fraud, insurers need to continually invest in their detection capabilities. Opportunistic fraud remains a constant threat across all of our product lines so it is one of the key challenges that the industry faces and one that drives a significant amount of cost.

**Noel:** Is there a possibility that the standard for diagnosis by the medical community is set too low and that there needs to be greater scrutiny of those diagnosis before payments are being made? Does that have a counter productive effect in terms of trying to secure business in the first place?

**Karl:** The difficulty is that often these injury types are soft tissue injuries so they don't present themselves or manifest themselves in a way that is easily diagnosable. Ultimately the medical practitioners will face

challenges in establishing whether the claimant has genuinely suffered pain or on-going discomfort as a result of their accident. This is an area that has been recognised by the regulators. The Ministry of Justice has recently put forward proposals to introduce an accreditation scheme for medical practitioners, which will be implemented fully in 2016. This scheme will ensure that those doctors who are undertaking the diagnosis for individuals who have potentially suffered whiplash claims are accredited and also undergo training to increase the level of rigour that is applied to the evaluation of these claims. It will take some time for the results of the accreditation and increased level of rigour to play out in terms of ultimate of fraud levels and it is somewhat of an unknown quantity.

**Noel:** What technology approaches have you taken within Zurich to address fraud prevention?

**Karl:** Technology and data analytics have proved vital in the arms race with the fraudsters and we have invested in both. We have a very clear strategy around predictive analytics and its use to support our fraud detection efforts. There are also many other tools and techniques that are deployed from front line indicators to fraud identification networks within our operations. We're also working very closely with our partners within the industry to gain greater insight into fraudulent activities as well as working with the Association of British Insurers ("ABI") and the Insurance Fraud Bureau ("IFB") to start to increase the level of rigour and scrutiny that the industry applies in a collective manor towards this threat.

We invest specifically in the technologies that we deploy, the training and development of our fraud handlers and the operational practices that we deploy. We also engage and fully support the industry efforts and strategy to tackle this issue for the benefit of our customers.

**Noel:** What different ways could your strategy move in the future?

**Karl:** The fraud capability will continue to evolve over time and will remain dynamic.

A big area of development over the last 5 years has been the introduction of sophisticated predictive analytics. More recently, the effective use of information that is available through the internet has played a large role in supporting fraud detection efforts. In particular our ability to analyse data from social media has proved to be very effective in assisting in our efforts to fight fraud.

**Noel:** Social media has not been a dead area to look into then but in actual fact quite useful. Why is this the case?

**Karl:** This is because the Internet holds a rich source of freely and openly available information. Ultimately if fraudsters choose to live their lives through social media and make it visible to everyone then that is an area that allows us to gain greater visibility of their activities. It also allows us to support the defence of the fraudulent claims for the benefit of our consumers and society at large. Social media has proved to be a very useful tool and has been very complimentary to our existing strategies.

We have very strict controls in place in relation to the access rights that we have, how we use that intelligence and how we ensure that everything that we do is legal and compliant. We also only use in house highly skilled professionals who provide services in this area.

**Noel:** I would assume that these highly skilled professionals would be a legal team who were advising you on what you can and cannot do?

**Karl:** Yes, we do have advice internally from our governance, legal and compliance teams and we do take those obligations very seriously. Equally we have a team of specialists who are very experienced in being able to undertake diagnostic analysis using the Internet and social media to be able to focus and support specific fraud enquiries.

Social media itself is not the be all but a complimentary activity that supports the technology, predictive analytics and all of the additional routes to identify and defend ourselves against fraud.

**Noel:** Is the use of social media analysis being done at the human interaction level or is this something that is a development for predictive analytics and is something where systems are monitoring social media in order to pick out the information required to make such claims decisions?

**Karl:** Social media analysis is undertaken both from a human enquiry and predictive analytics basis. However, our enquiries are always targeted and undertaken in support of further information that we have. Once we understand the circumstances and believe that there is a justification for undertaking broader analysis in relation to the circumstances for any particular claim, then we will do so.

**Noel:** Do you feel that there is a role for technology to play in the future in scrolling social media to search out pieces of information that are very useful to the claims management process or does this only cause problems in regards to access for information?

**Karl:** This area will continue to evolve but you have to be very careful in relation to the searches that you are undertaking and be comfortable as to why you are undertaking those searches. It is an area that will continue to develop but it is an area that will need to be considered very carefully in relation to data access and compliance.

**Noel:** Do you feel that those at the regulatory and government level can do more to support insurers in tackling fraud in the claims management process?

**Karl:** The government should be applauded for their efforts in supporting the insurance industry in tackling fraud. We have seen more recently as an industry engagement with the government, to really understand what further actions can be taken to tackle fraud. More recently the government has established an insurance fraud task force and they have recently issued a call for evidence to undertake some very targeted and focused work to identify further opportunities where the government can support existing efforts to really fight insurance fraud.

**Noel:** Thank you for sharing your thoughts on this topic.

**"The government should be applauded for their efforts in supporting the insurance industry in tackling fraud"**

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# SECTION 3

## ENHANCING OPERATIONS

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### 3.1 INTERVIEW

Predictive analytics - the game changer for commercial insurance

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## 3.1 INTERVIEW

# Predictive analytics - the game changer for commercial insurance

### Interviewer



**Noel Hillmann**  
*Managing Director,  
Clear Path Analysis*

### Interviewee



**Anthony Siggers**  
*Group Director of  
Knowledge, Willis Group*

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**Noel Hillmann:** Thank-you for taking time Andrew to join me today.

**I'll begin asking, how do you use predictive analytics in your own organisation?**

**Anthony Siggers:** The first is in the more traditional area, which is that as insurance brokers we are trying to advise our clients on how to be resilient in terms of future risk. Part of this process is to forecast what those future risks might be. We will take, say, their property portfolio and run it through predictive models to assess the models of various loss scenarios occurring. This is done using third party models of the likes of RMS or EQUecat. Others we build ourselves and we also build in collaboration with our network of academics in various universities that we sponsor.

It has now got to a point where the real skill is in choosing which models to apply to different scenarios. Both the brokers and the insurers do the modelling and they trade off the results of them to negotiate around the price of the ultimate cover for that risk.

The other area, which is much more unique to Willis and is what I am involved in, is around how to we go about ensuring that we find the best deal for our clients. As we deal with around 3,000 insurance companies around the world, and whenever we have a clients risk, we have to take it out to those insurance markets and get the best possible deal for our clients. Of course we can't take it out to all 3,000 so the art of the broker is to figure out which of the 3,000 to approach with which particular risk. We are now bringing science into that approach,

whilst in the past it has been done as an 'art' and based on the individual's experience. Now we are trying to bring the might of the institution to it by using predictive analytics and statistics to figure out where we believe the most likely insurers are going to be, to respond to that risk in the best way. We have an item called Market Match, a predictive analytics tool whereby you enter in the profile of the clients risks and it will come back with a ranking of who it is believed will most likely offer the best solution.

**Noel:** Where should predictive analytics be used for best effect and how can they be used to generate competitive advantages given their now abundant use across the industry?

**Anthony:** The better you can predict what is going to happen and the risks the client will face, the more scientific you can be about the pricing as ultimately you can put in place insurance structures to protect yourself against future scenarios of loss. There is clearly going to be more science analytics around the whole area of predicting risk. Of course you can then also place some preventative measures to protect against extreme scenarios.

There are particular functional areas on the insurer side where you are trying to identify the areas where you need to spend more time. The best example of this is in the claims world, as you need to be able to predict where potentially claims have been over inflated and you need to get a loss adjuster involved or spend a serious amount of time working out whether it is a true and justifiable claim or not. They are using predictive analytics to spot claims and

where they should focus their time on those deep dives to understand what is going on.

The area that I am most focused on is in regards to the brokers, who are very keen to make sure that they approach the right markets and use predictive analytics to pick out what those right markets are. Equally the insurers have figured out that if they spend more time on the priority submissions – whenever they get a quote they always have too much on their desks – they have figured out that if they focus their time on the most important submissions then they are going to be more likely to win the deal and it will also be more profitable. Part of this is because if you spend more time on a submission you can stay better priced because you will understand that risk better than anyone else. The key is getting involved early on with the right level of effort and you will win the deal.

For the likes of AIG and Zurich, who run predictive analytics across their whole books, they look through their entire submission flow and the nature of these submissions to see who it is coming from, what is the nature of the client, industry and business. They then run predictive analytics to tier submissions, so that with anything coming in they can put into a tier 1, 2 or 3. It is tier 1 that we want our underwriters to focus on as we want them to go straight to the top of the list.

Our underwriters are getting much more clever in terms of how they pick the submissions to work with. We are getting much smarter in terms of who we send submissions to, which should lead to a fundamentally more efficient

distribution model between brokers and carriers but also a much a better deal for the client because the right risks will be focused on by the right carriers. A lot more time can be spent getting the pricing right with a lot more science behind the pricing that should lead to a better deal.

**Noel:** Can too much trust be placed on predictive analytics or have the results proven the case?

**Anthony:** On the cat modelling side i.e. modelling of the future scenarios around risk, pretty much all of the models have been proven to be flawed. There have been many scenarios whereby what they have predicted has been less severe than what has happened. There is no way of proving it until the future manifests itself so if you are making predictions from five years ago then you have to look over the past five years to see what has happened and the reality is that they have not been very good. This is why there is much more emphasis now on how you interpret the results and what model you use for different scenarios and a lot of trade off between the modelling approaches of the insurers and brokers together. That world will get better but the results have proven that actually the predictive analytics aren't that good.

In the distribution piece, which I am talking about there is a lot of evidence to show that they are incredibly powerful. So from an insurers perspective they can track on a real time basis their conversion rates. They are looking now at if you took all the submissions coming in, how many would they convert into wins.

A broker will send a risk into a carrier, a carrier can choose to quote it or not and once they have quoted it they may or may not win it. They have a metric called a 'hit rate', which is basically the number of deals that they win divided by the number of submissions that come in. They have absolutely proven beyond doubt that if you use predictive analytics to prioritise then you get

**"We judge that based on the number of times our clients are being bound with a carrier that was in the top 10 of our rankings, it would be around 97%."**

much better hit rates on tier 1 versus tier 2 and 3 risks.

For us, we can prove that our ranking performance has improved over time. We judge that based on the number of times our clients are being bound with a carrier that was in the top 10 of our rankings, it would be around 97%.

There is a risk that our brokers put too much trust on these models and therefore do not challenge what the rankings are saying especially when you are getting stats like 97% of the time that we are getting it right.

We like to think of it as a GPS system, whereby for any particular destination you want to get to it will suggest a route but if you are a local and you know intimately the nature of where you are going and the roads to get there then you may well know of a route that is better than the one the system is recommending. We still want you to take the route you know but we just want you to tell the system what route you have taken. Every time they do this then the system learns from it.

If you see all the locals taking a particular short cut then the system will pick up on it and recommend that short cut to anyone who is not a local in the future. However, if your brokers aren't challenging what is coming to them from the algorithm then you aren't going to get that kind of insight being captured.

We do see this happening a bit around the world and it is driven by cultural differences. For instance in China they follow the algorithm results 100% and they don't challenge it at all. In the

London market they absolutely challenge it and probably not always for the right reasons as there is a lot more personal relationship and entertainment going on in the London market. What we have to do over here is assess who is challenging the algorithm too much and drill down into why that might be.

**Noel:** What further uses of predictive analytics have you explored? What ways are predictive analytics helping to drive down costs and the requirements for resources?

**Anthony:** From an insurer perspective they are making sure that they focus time on the right items whether it be dodgy claims or the right submissions and they have to get their pricing right and be as scientific as possible. Pricing is always a tricky one for them as even though they might have the right scientific price, they may still want to win the deal and that may mean having to price it cheaper than the science is telling them. Given the over capacity in the market, we are seeing areas where rates are massively off and perhaps not at the scientific level.

For us we are acting on behalf of the clients and our key role is to get the best possible cover for their risks. This means that they only buy what they need. There is a conflict of interest as we are acting on behalf of them but our insurers want them to pay as much of a premium as is possible for the broadest cover possible. We are working against the insurers in that regard because we will say to clients that we have analysed, for example, a

Singapore hedge fund and we have five years worth of loss history for hedge funds around the world. We understand the quarters of loss and it turns out that the biggest cause of loss is when the company breaches their investment mandate. The investment mandates might say that they are going to invest in long only European equities and it may turn out that someone put a short in there or invested in an equity that was say Japanese where there could be a big loss on that. The investors could sue them for it. This is the primary cause for loss but the standard Directors and Officers (D&O) cover from an insurance company is far broader than that, as it isn't tailored to a hedge fund. We would then say that actually as a hedge fund, all you really need to cover is the breach of mandate clause. We will go to an insurance company and ask for a deal on that alone which will be a lot cheaper than a broad D&O quote which is for covering everything.

We are using predictive analytics in that respect to figure out what our clients should really be buying for the scenarios that really matter to them. We are also using predictive analytics to get better at working out where the best insurance companies are going to be to provide those solutions.

**Noel:** Thank you for sharing your thoughts on this topic.

“...as a hedge fund, all you really need to cover is the breach of mandate clause. We will go to an insurance company and ask for a deal on that alone which will be a lot cheaper than a broad D&O quote”



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