Solvency II: Don't let it become insolvency too.

The date for Solvency II implementation is now set at 2012. As the calendar marches on the debate is shifting to the practical measures that companies need to put in place to comply with the new regulations. Those that get left behind could fall by the wayside making it insolvency too.

Solvency II

Solvency II is a fundamental change to the regulatory landscape for insurance businesses in Europe. It is clearly based on Basel II. The three pillar approach is unmistakable. It has components of the UK Individual Capital Assessment (ICA) regime from the UK and the Swiss Solvency Test. Both the UK and Swiss regulations were probably introduced in order to give their national insurance and reinsurance businesses a lead into Solvency II and also to give their governments and regulator some power at the negotiating table.

"Solvency II is Solvency II. It is not Basel II; it is not ICA; and it is not a Swiss Solvency Test."

Christopher Cloke-Browne
Managing Partner
BRAVE Partners LLP

However, Solvency II is Solvency II. It is not Basel II; it is not ICA; and it is not a Swiss Solvency Test.

BRAVE Partner, Christopher Cloke-Browne, continues to run into those who grew up on Basel II who claim that Solvency II and Basel II are the same. This is not the case. Most importantly, the authorities within Lloyds of London that are responsible for approving the approach that Members take to Solvency II are adamant that Solvency II is fundamentally different to Basel II.

The three pillars of the Solvency II directive look pretty much identical to Basel II. These cover risk modeling (Pillar 1), integrating risk management into business process, often called enterprise risk management or ERM (Pillar 2) and risk reporting both to investors and regulators (Pillar 3).

In the view of BRAVE Partners the fundamental difference between Solvency II and every other regulatory framework that has gone before it is that the regulator does not just assume that the company will integrate the model that it will spend a lot of time and resource on; Solvency II stipulates that this is an absolute requirement. BRAVE Partners believes that in a post Solvency II world managers will use and understand models.

Preparing for Solvency II

> *"If the regulators had to pick a theme tune for Solvency II, then it would be Start Making Sense"*

Solvency II will prove to require substantial changes for many insurers. There are a myriad of tasks and projects to be established, managed and completed. Many consultants, service providers and IT vendors have produced a range of options from shrink wrapped, off the shelf, products for risk modeling and Solvency II implementation. Many will boast experience from Basel II, the equivalent of Solvency II for banks that was published in June 2004 and is currently being implemented around the world. Within all the work required, the actual choice of internal risk, or VaR, model might seem like a decision of secondary importance, with many to choose from when the time comes. BRAVE Partners believes that the choice of model is critical and now is the time to be considering options.

The Board must listen to the Chief Actuary

BRAVE Partners has heard of great glee in actuarial departments following from Solvency II. Chief Actuaries were highlighting the fact that Boards must now "listen to me". All of this is absolutely true, but Solvency II also stipulates that what the Chief Actuary says makes sense to them – so BRAVE partners would be a little harsher and suggest that Solvency II requires Boards to listen the Chief Actuary only if he makes any sense to them. If the Chief Actuary does not make any sense to the Board, then something else must be done. That is where BRAVE Partners can help.

Start making sense

The band Talking Heads had a major hit with their concert movie "Stop making sense". The album sleeve is covered with random and coherent, but non-sensical and non-sequitor statements. One of the favourites at BRAVE Partners is: "Cats prefer houses to people".

> *"I have never seen a trade where both sides can book $5m in profit before"*
>
> Senior bond trader and stalwart of the credit markets on the mark to model of CDOs

If the regulators were to pick a theme song for Solvency II, BRAVE Partners believes that it would be "Start making sense".

The key to successful models is to ensure that all inputs and parameters have a clear interpretation in the everyday language used by the leaders of the business. During the height of the collateralized debt obligation (CDO) boom in the investment banking industry, one of the most popular pricing models was completely driven by a parameter that the quantitative teams called "default time correlation". The model itself was technically elegant in many ways, but this elegance arose from the use of a "default time correlation". The issue that was largely overlooked was the fact that "default time correlation" is not a concept that was regularly discussed, or even understood by the business management. The potential difference of opinion on the value of CDO structures was wonderfully highlighted by a highly experience bond trader who said: "I have never seen a trade where both sides can book $5m in profit before".

The CDO business ultimately failed spectacularly, taking a few banks down with it on the way. Some of the seeds to this destruction may have been sown when management and modeling disconnected.

Three steps to Solvency II

At first glance, Solvency II can look daunting. Just the amount of paperwork that is being issued is enough to fill the bravehearted with fear. Ultimately, the regulation just wants the firm to operate on what most should do naturally as sound business practices; namely:

1. Identify the risks that the company is exposed to.
2. Manage those risks.
    a. Model
    b. Manage. Actions driven by model and management
3. Report on those risks both internally and externally.

Step 1: Identify the key risk drivers

Identifying the risks starts with identifying the key risk drivers for the business. The management should be focussing on the events that might have a catastrophic impact on the business. In particular the management should be looking for a single cause of multiple major losses. This is what BRAVE Partner Christopher Cloke-Browne used to call co-occurrence risk when he was a credit strategist. In credit it is hard to talk about correlation, but 2000 to 2002 showed that bad things tended to happen to bad companies: Enron, Worldcom, Global Crossing, etc… at the same time. An example in insurance that might become very pertinent is a link between badly structured credit assets and professional indemnity claims. The key risk there might be skill, care and diligence in the credit structuring market. Once the list is produced it should contain about five to eight, at an absolute maximum, items. The management alone should undertake this process without input from any modelers to tell them that certain models are or are not possible. The job of the modeler is to model the business. The management should not, and in fact will not, manage to the constraints of a model.

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Step 2: Manage risks

Build a risk model from the identified key risk drivers

The risk model should follow directly from the key risk drivers that were identified in step 1. The primary drivers for the model should be the key risks to the company; nothing more, nothing less. It is unlikely that a key risk identified by the management will be the correlation between hurricanes in the Gulf of Mexico and the NE USA. It is far more likely that a key risk will be an active hurricane season.

BRAVE Partners would suggest using a dependence style structure for the risk model. The reasons for this are discussed in more detail in the commentary “Don’t build a condo on Mars” also available from this website. In summary, a dependence model structure allows the risk drivers to clearly drive the risks that the business is exposed to, without the need for the management to work out nebulous and opaque definitions of correlations between risks. The end effect is similar to correlation, but the structure is transparent and the implementation is straightforward.

BRAVE Partners has provided some, highly simplified, demonstrations of Solvency II risk models under a dependence framework on the website (www.bravepartners.com).

Utilise the model and act appropriately on its output

The only worse thing that an insurance company management can do than ignore a risk model is to act unquestioningly on the model output. A model, no matter how advanced, is not the actual business. It necessarily has some inaccuracies and omissions that need to be filled in by human understanding and intuition. BRAVE Partners suspects that not too many managements would climb aboard an A380 super-jumbo just after being told that it was designed solely by a computer. Why would the same people allow their business to be "flown" on the same basis?

The model output is a starting point and a guide to management discussion. Moreover, if management identify a systematic weakness in the model, then it should be rectified and upgraded. Now the catastrophe models probably look at levies (dams) and assess whether or not they break during a storm after the experiences of Katrina hitting New Orleans.

In discussing the model output, managements should determine:

i. That the model output does make sense where the results agree with their own views.
ii. The drivers of the differences where the results diverge from management intuition.

Proposed action plans to manage and mitigate risk should also be tested in the model to ensure that the model results reflect the predicted effect of the action. This is further validation of both the action and the model.

The BRAVE partners have considerable experience in utilising models to develop action plans. A case study is described in the box.

Step 3: Reporting

Reporting follows naturally from steps 1 and 2. A highly integrated risk model allows for straightforward reporting that is clear and comprehensible to all stakeholders. A reputation for clear reporting is of immense value to a business, driving it to premium valuations.

Case Study on Model Application

A major European commercial bank was looking to reduce their USA loan portfolio exposure by 10%. A debate raged within the organisation whether it was better to hedge 10% of all exposures, or all of a few select exposures that the bank thought could deteriorate significantly.

The BRAVE partners modeled the portfolio and ran some risk-reward optimisation algorithms. The result suggested a list of select names that should be hedged 100% to reduce the overall portfolio by 10%, agreeing with one opinion in the bank.

The bank hedged the selected names. Within 18 months, the selected names had deteriorated significantly, some becoming as low rated as CCC by some of the ratings agencies.

This is an example of integrated risk management. The business leadership understood the model and its results and used it as a part of their decision making. The result was a highly effective risk management decision that was ultimately extremely beneficial to the business.

Solvency II is an opportunity

New regulation is often seen as a cost and a burden by business. Solvency II is new regulation and in fact a radically new set of regulations.

However, those businesses that embrace the spirit of Solvency II and take it as an opportunity to build efficient and effective risk management models and processes will create a significant competitive advantage over their rivals. BRAVE Partners believes that the case study bears out this possibility. The case study took two months from the initial approach to the hedging program execution. Businesses, even smaller business, that are committed can extract value quickly and effectively.

Smaller businesses that do not embrace Solvency II and use it to their advantage run the risk of taking the double whammy of high cost of implementation and increased capital requirements, putting them at a significant competitive disadvantage and at extreme risk of being acquired by their larger, or more efficient, rivals.

Don't let the opportunity of Solvency II become insolvency too.

BRAVE Partners services

The BRAVE partners have extensive experience in building and implementing risk models for Basel II. Whilst we have argued strenuously that Solvency II is a step change from Basel II, we believe that our models can and do meet the Solvency II criteria. Moreover, the BRAVE partners have the commercial experience in using models to aid management decisions that is essential to a successful Solvency II project.

Integrated services

BRAVE Partners is building a consortium of advisors to cover all of an insurer's Solvency II needs. These needs are set out on the next page.

- *VaR models for Solvency II need to be integrated into the management (Pillar 2) and reporting (Pillar 3) processes from an early stage*
- *If modeling is an after- thought then it is likely that the model inputs and outputs will bear no resemblance to the discussions of the business leadership.*
    - *The cost of construction and operation will become a business overhead as the system will have no decision making value.*
    - *Business decision making and capital calculations will be disengaged.*
    - *The model might as well be a condo on Mars.*
- *BRAVE Partners Managing Partner, Christopher Cloke-Browne, has considerable experience in building risk and capital models for financial businesses and integrating these with business decision and reporting processes.*
- *A simple example of the dependence model described in this article is available to certified, signed up clients of BRAVE Partners.*
- *Contact BRAVE Partners LLP at:*

  enquiries@bravepartners.com

  www.bravepartners.com

Activities required for Solvency II implementation

1. Identifying the individuals and structures required internally to satisfy the Solvency II criteria.
2. Identifying the key risk drivers for the business.
3. Building the data infrastructure to feed the model.
4. Buying or building a risk model.
    a. Documenting the model.
    b. Developing the maintenance and upgrade plan for the model.
5. Integrating the model into the business and management processes.
    a. Identifying risks.
    b. Developing risk management and mitigation strategies.
6. Reporting.
7. Ongoing maintenance and advice.
    a. Model upgrades.
    b. Risk identification.
    c. Risk mitigation.
    d. System maintenance.