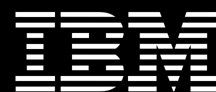

Solvency II

Enabling Transformation Through Regulation

Executive Summary

Solvency II legislation was initiated in 2000 by the European Commission to implement a fundamental change to the current European insurance solvency framework and has evolved from the Basel II three pillar approach to banking regulation. Solvency II will produce a more consistent solvency standard for insurers across Europe, ensuring that capital requirements are more reflective of the risks being accepted.

The date for the legislation to come into effect has been set at 31 October 2012. Whilst this may seem a distant horizon, interim progress milestones are fast approaching in 2010 and 2011. IBM advises that each insurer should decide now what Solvency II means for them. This paper outlines the key decisions that IBM recommends need to be made now to design the appropriate Solvency II programme.

There is not one solution for all. Insurers need to understand the drivers that could influence both the scale of investment and the value to be derived from their Solvency II Programmes. Only then can the insurer arrive at a solution that should provide the right balance of cost and benefits.

In IBM's view, to meet Solvency II the insurer *must* consider the following key drivers that *will* influence both the scale of investment required and the value to be realised:

- ***Vision and Desired Business Benefit:*** *The ability to better understand risk provides significant advantage in the development and pricing of products. Insurers need to be clear on their appetite to invest, to achieve competitive advantage. If there is ability to gain business benefit and competitive advantage by managing a specific risk particularly well, it makes sense to align Solvency II investment to develop this capability (e.g. investing in a best-in-class Asset Liability Modelling capability if credit risk is seen as a key risk for competitive advantage).*
- ***Complexity and Stability of Risks:*** *This relates to the risk profile of the insurer's product portfolio. For example, a company that sells guaranteed investment products is likely to get more benefit from measuring and managing its risks more frequently and accurately than a company selling purely unit linked accumulation products.*
- ***Market Peer Group Sensitivity:*** *Solvency II is a principle-based regulation. There are not hard and fast rules. Experience of other large, principle-based regulatory changes has been that evolving market practice is the key driver of the regulatory standards. Under Basel II, compliance is a moving target – as soon as the banks had done what they thought the regulator wanted, the standard was raised because others in their peer group had moved to the next level.*
- ***Operational Efficiency Ambition:*** *The insurer should assess what level of operational costs they are targeting. Is there the appetite to invest in automation to reduce strain on resources or to increase operational costs by deploying additional people in a more manual approach?*
- ***Gap Analysis:*** *If achieving updated risk measurement calculations on a daily basis is the target, how do we get there? What do the current processes for measuring and managing risk look like? How quickly can data be sourced and delivered? How often can the books be closed? How well are your models documented etc? The answer to such questions can give the insurer insight into how big or small the gap is and where investment is needed.*

These business drivers should be balanced against any cost constraints and the organisation's capacity for change over the near term.

Irrespective of the size of investment itself, any Solvency II solution should address both measurement and management of risk.

Measuring risk, i.e. Pillar I, is the fundamental building block. You cannot manage your capital without measuring it! Currently, this is focussed primarily around actuarial modelling work, understanding how product profitability changes using the new rules and formulas. Based on this analysis, business strategies may need to change, for example to revise the product mix. Many of the large insurance companies have participated in the QIS exercises and have been lobbying for key methodological choices. The vast majority of larger companies are aiming to use internal models for Pillar I and generally have sound actuarial models in place already. Other insurers have commenced building in-house capital models to provide early insight into these issues.

Measuring the risk is relatively easy. However, there will be undoubted challenges in providing the data to fuel the calculations, in ensuring there is the right control environment around the internal model and that the model is sufficiently documented. The hard part is managing risk, in particular embedding the change into the business and creating a culture which is attuned to actively managing the risks of a company to create value for all stakeholders.

The measure of success is the 'Use Test', where firms demonstrate to the regulator how their models are used in the day-to-day management of the business (Pillar II). The importance of the change management challenge should not be underestimated. This could involve measuring risk more frequently, accurately and timely which is likely to be a big challenge for most insurers.

So what key decisions should be made now?

IBM's experience from similar regulatory change indicates that insurers should address the following as a matter of urgency:

a) To articulate clearly the vision for the Solvency II programme, with buy-in from across the businesses and IT.
b) To agree the calculation model to be used, i.e. Standard vs. Partial, Internal vs. Full Internal.

As stated above, most large groups have determined to use an internal model. There is little real choice as the regulator and analysts are unlikely to look favourably on any big player adopting a more simplistic, standard model-based risk management framework in relation to their peers.

For insurers wishing to use an internal model, a fundamental issue is the quality, availability and traceability of data. For example, data granularity is something which is hardwired into policy systems and can be difficult and expensive to change. Similarly, insurers may now need to collect more comprehensive information about the quality and risk sensitivity of its investments portfolio than was required previously, and do so more frequently and faster.

c) To decide the degree to which the risk calculation process is 'industrial strength'. This captures the organisation's ambitions towards end-to-end data integration and can be determined by addressing questions such as:
- ***Frequency** – how often will these calculations need to be done? Is monthly close required or is quarterly sufficient?*
- ***Accuracy** – how accurate do these calculations need to be, can proxies be used on a monthly basis to accelerate calculations, with a full close quarterly?*
- ***Timeliness** – how quickly post a period end are these numbers needed?*
- ***Availability** – to whom should the results be distributed? How can I represent them in order to enable smarter decision-making?*

d) To choose to focus on achieving basic compliance, or decide to invest smartly and gain business benefit. As outlined, this decision needs to be referenced against the insurer's peer group and market expectations.

e) To form a view on what the regulator's likely demands will be, alongside expectations of analysts and anticipated positions of the peer group, by monitoring the external environment and engaging in regular dialogue with the regulator.

f) To understand the MI needs of different user groups so the solution can be designed to support these requirements and deliver MI to an appropriate level of granularity for each constituent group.

g) To establish the appetite for technology to be an enabler to support and embed the desired change. As stated, there is not a single right approach for Solvency II. Smaller, simpler businesses will not necessarily require the extent of technology-driven data integration and business transformation that larger, complex insurers could require.

This all needs to be decided sooner rather than later to avoid re-work. From Basel II experience, the data and results integration is likely to be the costliest part in the Solvency II project. It is on the critical path with long lead times, so decisions around data sourcing and distribution need to be made early.

Insurers should start their journey now. 'Wait and see' is no longer a viable option. Most large insurers are currently in the process of designing their programmes. There are already discussions going on in the industry regarding the scarcity of suitable and available resources to work on these projects, and associated concerns as to the ability of the major consultancies to support multiple concurrent programmes. Those that do not act now could fall behind the competition, run out of time, forcing them to spend money in a hurry. This is both inefficient and tactically unsound and likely to lead to concerns from the regulator.

Given the above, the journey you set out on now needs to be flexible and scalable, to enable rapid adaptation of the developing solution as views and requirements become clearer.

Solvency II Objectives

The primary objective of Solvency II is to strengthen protection for policyholders by ensuring that insurers and reinsurers fully understand the risks inherent in their businesses and allocate enough capital to cover those risks.

Pillar I – Risk Quantification and Capital Adequacy
Solvency II demands that firms explicitly quantify the level of risk they face and identify the amount of capital needed to support that risk. This calculation is described within Solvency II's Pillar I.

To perform these calculations, firms can elect to:

- *Apply a standard model prescribed by the regulator*
- *Operate a full internal model across all business lines*
- *Operate a partial internal model, with some areas remaining under the standard model.*

Using internal Solvency II models should allow a firm to produce a tailored assessment of its individual risk profile and, potentially, lower capital requirements.

The regulations allow a pragmatic approach to be taken as to whether to use a standard or an internal model. The insurer can mix and match the models it uses – for example, by product line – and only develop a more complex internal model where the benefits to be gained warrant the additional effort.

The regulator will need to approve each internal model before it can be used. To gain approval, firms will have to demonstrate that the model is based on sound statistical techniques, uses complete and accurate data to support model assumptions, covers all material risks, and satisfies calibration tests and documentation requirements.

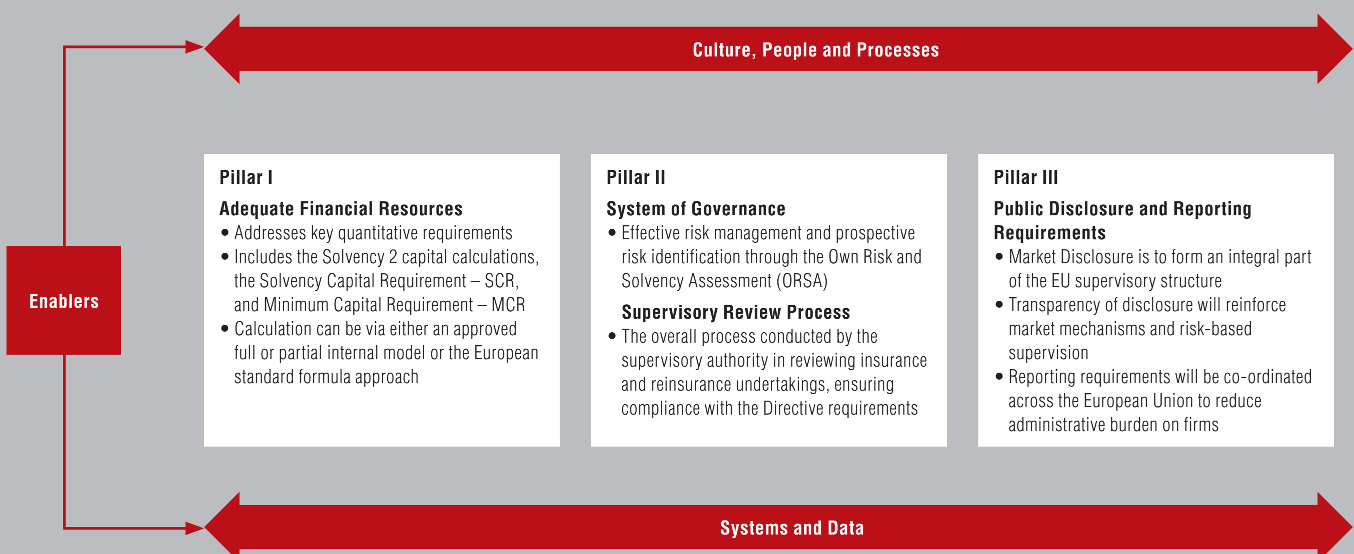

Figure 1 – Solvency II Central Elements

Pillars II & III: Internal Control and Reporting

Pillars II and III address the supervisory, reporting and disclosure requirements that the insurer will have to meet to comply with Solvency II. They also define the risk management processes and practices that a firm needs to have in place and demonstrate to the regulator.

To achieve compliance, the firm will have to prove that it has strong internal reporting mechanisms and a thorough internal audit function. It will also need to demonstrate comprehensive communications and timely data sharing between the various functional departments – from underwriting, claims, actuarial, operations, IT, investment management, finance, risk and compliance, right up to board level.

Solvency II extends a firm's existing risk measurement, management and reporting, requiring risk sensitivity to become an integral part of decision-making across the organisation. This will call for data relating to risk to be generated more frequently and more thoroughly to support new processes. Firms will need to demonstrate that they have instilled risk awareness and sensitivity in all core activities.

Compliance will involve a supervisory review by the regulator of a firm's risk management and controls, including a review of the firm's Own Risk and Solvency Assessment (ORSA) and Regulatory Reporting.

The ORSA is a firm's own review of its capital needs taking into account its specific risk profile and strategy. It also addresses the sufficiency of its risk and management processes. Whilst comparable to the Financial Service Authority's Internal Capital Assessment (ICA) requirement, Solvency II goes into much greater depth in assessing risk management processes.

Regulatory Reporting requires firms to make mandatory disclosures on various aspects of their operations. Standard forms are used to provide specific reports to regulatory supervisors in a prescribed format and frequency.

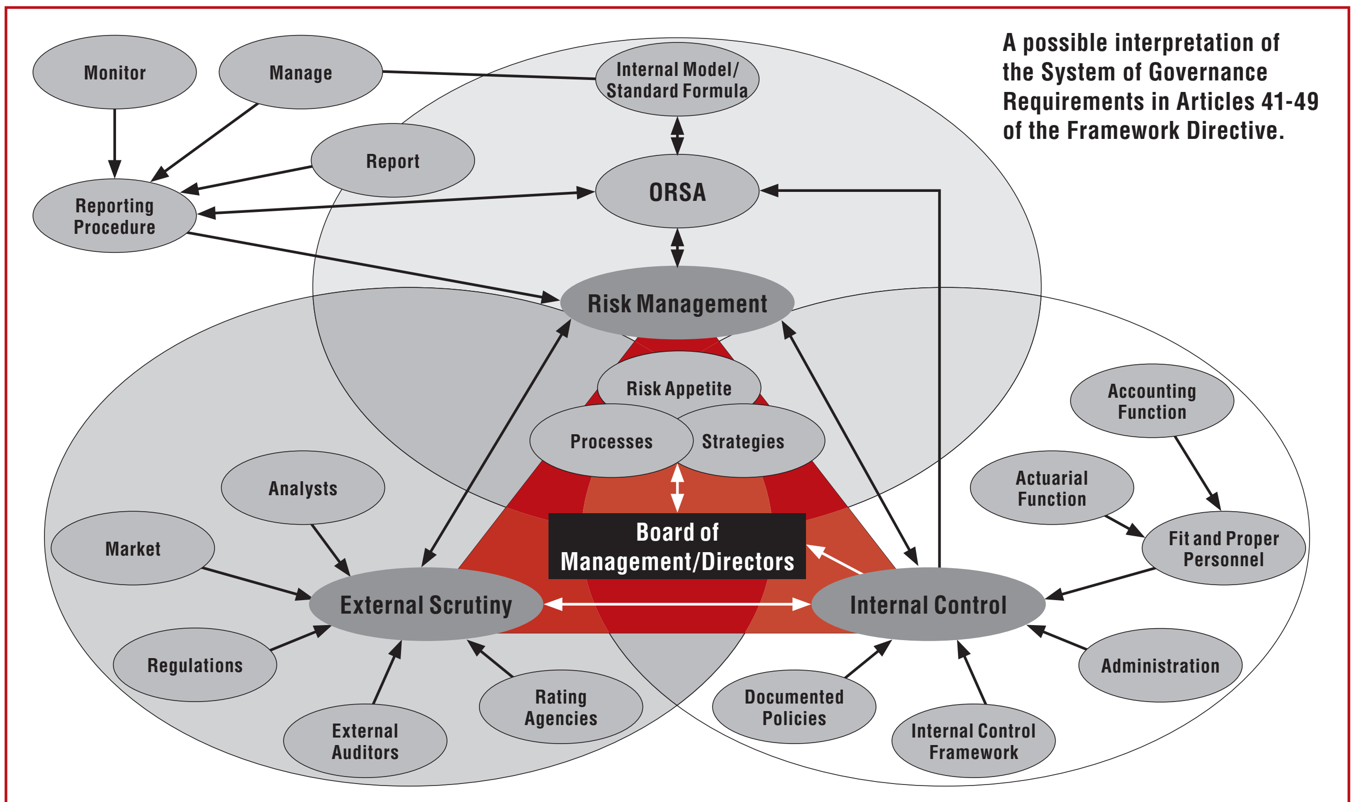

Figure 2 – Illustrative Solvency II Governance Model

Call to Action

After a lengthy period of initial development, the waiting is now over. The official date for implementation of the Solvency II Directive has been set for 31 October 2012. This may seem a long way off, but for those insurers wanting to test their proposed internal models with the regulator beforehand, 'Dry Run Entry Compliance Criteria' will need to be satisfied in the second half of 2010 (see Figure 3). A surge of Solvency II initiatives is now under way within the leading firms of insurers and reinsurers.

According to a recent statement from the Financial Services Authority: *"The aim is now clear and the risks of waiting before starting to plan for implementation are considerable in terms of non-compliance in 2012 and/or being forced into costly high-risk programmes of work at short notice. So, starting work now on a measured and a flexible basis is a sensible course for regulator and firms alike".*

Experiences implementing Basel II has taught us that systemic, pervasive change takes time and commitment. Preparations should begin today if the commercial and competitive benefits of implementation are to be fully realised by the due date.

Taking action now – Pillar I Internal Model Dry Run

Most insurers are conscious of the need to 'do something'. The question is "What can be usefully done?" as Solvency II, by its nature, does not engender a 'one size fits all' approach. The Solvency II solution for any insurer will depend on numerous drivers as noted above, including product complexity, appetite for operational efficiency, vision and desired business benefits, market sensitivity etc.

One-step that should have commenced or be starting imminently is the Pillar I Calculation, especially so where the insurer aims to apply for internal model approval. For example, UK insurers aiming to use internal models have to notify the FSA of this intent by end of June 2009 and also advise of whether they wish to take part in the dry run exercise in the second half of 2010.

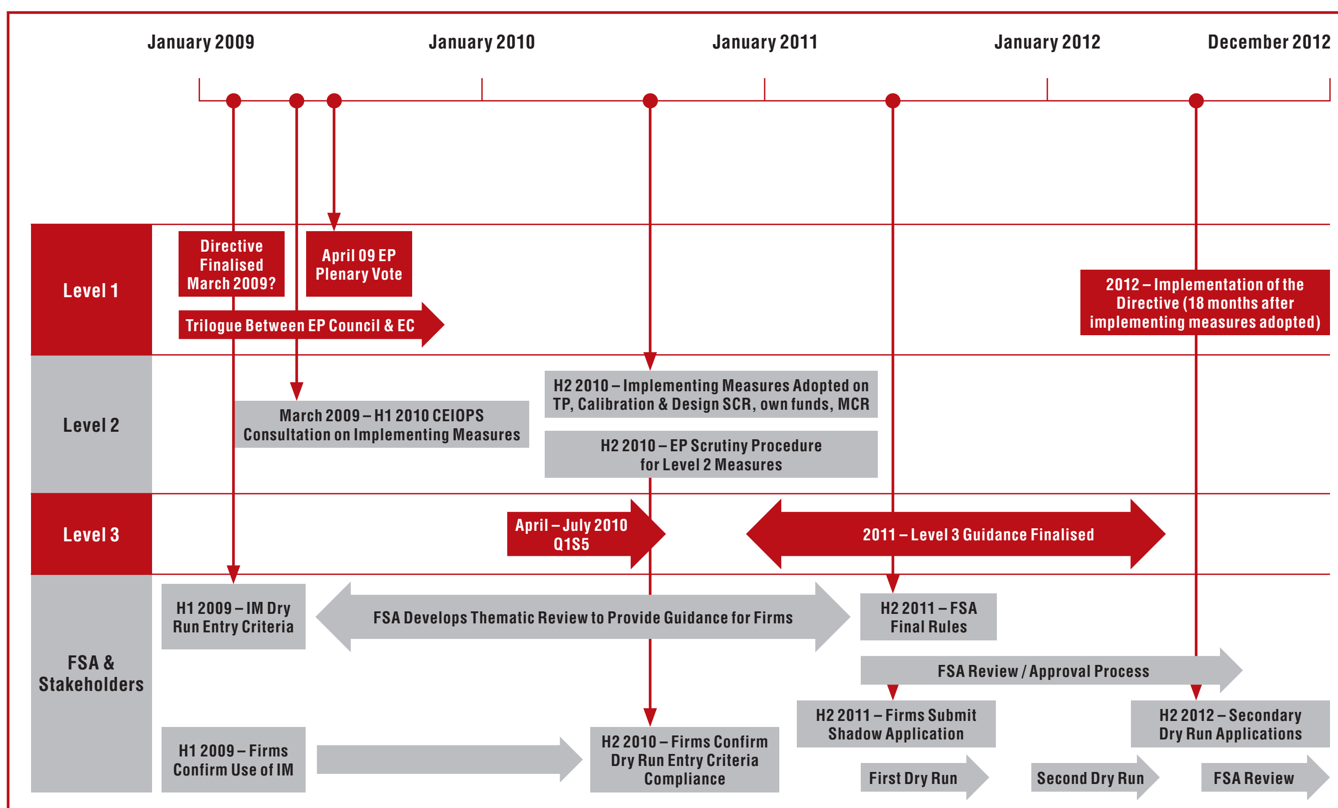

Figure 3 – Call to Action – SII Timeline

The dry run is the opportunity for insurers to demonstrate their calculation models to the regulators in advance of official compliance. It could help the insurer identify likely constraints and opportunities and provide insight into the expected financial impact of the Pillar I calculation. From the regulator feedback and their own internal lessons learned from the dry run, the insurers should be able to refine their models, and take steps to mitigate risks, to increase the likelihood of model approval by October 2012.

Insurers not participating in the first dry run have been warned that they risk not getting approval for their internal models before 31st October 2012. If the model is not approved, then it can't be used at all. It will not simply attract an additional capital loading as per Individual Capital Adequacy. The insurer should use the standard model in calculating Solvency II capital.

Firms should note that there is expected to be a QIS-5 exercise in April – June 2010 which should be included in Solvency II planning. This is particularly relevant where firms are planning to join the dry run from mid 2010, where QIS-5 is likely to form part of the qualifying criteria to enter the dry run process.

From June – Nov 2010, those firms seeking to apply for internal model approval will be expected to demonstrate compliance with dry run entry criteria as follows:

- *High-level implementation plan*
- *Internal model development plan*
- *QIS-5 exercise completed*
- *Model documentation essentially complete, with indication of how Directive requirements / tests will be met.*

Two basic philosophies towards the dry run are available:

- *A quick and disposable approach in which the calculation is largely performed by actuaries using desktop tools to establish the logic and gain a feel for the numbers. Whilst the logic involved in data extraction and calculation might be preserved, the toolset used is likely to be thrown away for rebuild on a more 'industrial strength' distributed platform*
- *A prototype approach, where the Pillar I Dry Run is built on the technology that is anticipated to be used in the full, strategic solution. This has the advantage of inducing less subsequent rework, but will require the insurer to have clear vision as to its Solvency II technology stack early in the programme, which by definition is likely to require a slower, more structured development than a desktop development.*

At the risk of repetition, there is no single 'right' way. However, bear in mind that calculating the numbers alone is not the problem. Actuarial departments are geared towards revising models and calculations on a routine basis. The issue is whether they can do it faster, more frequently and to a higher level of quality.

Having in mind the need for an end-to-end process and technology solution, with special focus on the data integration challenges, is likely to put the organisation at an advantage when it comes to delivering the Pillar I calculation inside a framework capable of embedding within the decision-making cycle (Pillar II) with comprehensive disclosure of results (Pillar III).

More than Measurement

Compliance is not simply a case of an insurer demonstrating the consistency and accuracy of its Solvency II capital calculation models. Per Pillar II, firms will also have to demonstrate to the regulator that the internal model is used in the day-to-day management and decision-making of the business – also known as the ‘Use Test’.

IBM’s experience, derived from multiple Basel II projects in the banking sector, strongly suggests that insurers will probably feel most comfortable in addressing the Pillar I Capital Calculation, as it can be viewed as another in a long line of actuarial modelling projects.

However, it is the Use Test where Insurers may find the greatest challenge, as it will force firms to confront longstanding working practices and change entrenched behaviours. This is also the most powerful element of Solvency II regime in preventing business failure.

The metrics which link capital and value need to be clear. Insurers can adopt RaRoC style metrics, but metrics including IFRS Earnings at Risk and MCEV are also common. The insurer needs to be clear on its primary profitability/value measures, as these can give conflicting messages. For example, driving the business to increase value on an IFRS basis can lead to different business decisions than driving it using Market Consistent Embedded Value.

Irrespective of the profitability basis selected, in order to embed Solvency II risk awareness into the insurer’s decision-making process, the organisation should present complex capital, risk and performance measurement data and results in a form that is timely, accurate, concise yet comprehensive to help facilitate business decision making.

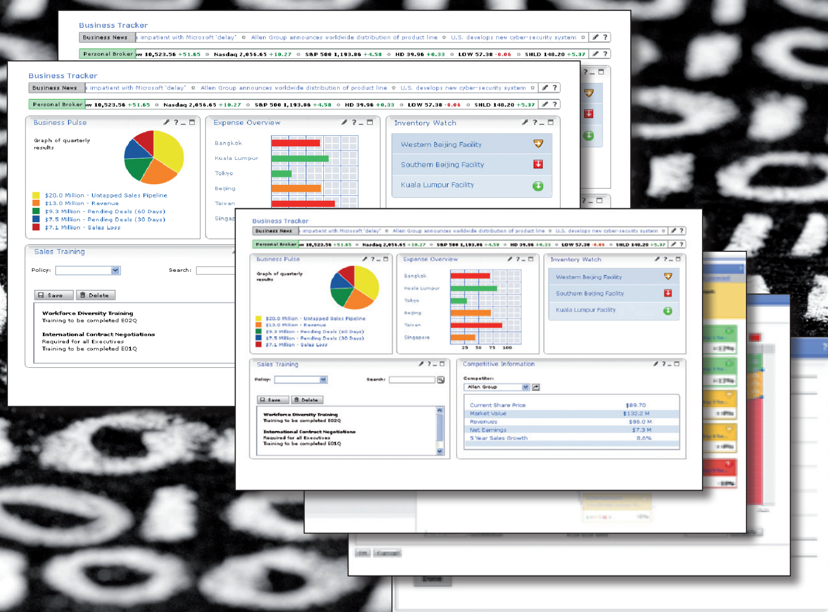

Figure 4 – Management Cockpit Example

Potential Business Benefits from Solvency II

In developing the Solvency II business case, business leaders have a choice. They can elect to do the minimum required to implement the legislative changes arguing that, without compliance, the firm may endure sanctions as the regulators will in effect punish non-compliance.

Alternatively, firms can aim to understand if and where they can invest to achieve competitive advantage and, as a result, maximise the potential benefits.

Solvency II solution can provide significant business opportunities for insurers:

- *Provide a common basis for comparing projects / business strategies of different levels of risk, and give management a deeper understanding of risks to identify areas where competitive advantage exists*
- *Deliver improved MI to facilitate business decision-making at all levels in the organisation*
- *Create value through improvements to product design and pricing*
- *Assist the organisation to better align employee remuneration with risk-based performance*
- *Help to minimise the cost of raising capital, reinsurance and other risk transfer products by making the firm's risks more transparent to (and hence assessable by) the market*
- *Drive investment in scalable/extendable models to minimise cost of future change programmes (such as IFRS Phase 2)*
- *Provide faster, higher quality financial reporting through improved data integration*
- *Give efficiency improvements, such as removal of duplication of effort across different reporting processes*
- *Increase automation to reduce strain on resources*
- *Help improve capital allocation by identifying those risks that can earn appropriate risk adjusted returns.*

Process and structural changes can be designed to improve risk-based business planning, accelerate product development, deliver more focused customer engagements and provide improved insight into risk transfer alternatives. Information systems can be repositioned as strategic assets that better support business management and decision-making.

Realising these benefits need not require an instant, wholesale business transformation. Many firms may prefer a more pragmatic, phased approach. This will use some 'workarounds' to deliver immediate Solvency II compliance whilst more comprehensive, automated processes and workflows can be implemented more gradually according to the firm's ambition and appetite.

Designing your Programme

Insurers should plan out their programme of change now. Larger groups have already started to prepare for Solvency II and are making solid progress in mobilising their projects. In general, they have completed visioning and gap analysis exercises to map out at a high level the plan for 2009 – 2012. The management of Risk (Pillar II) is usually the source of the most significant gaps because of the size of effort needed to support a deep cultural change, but as we have outlined throughout this paper, there is not one solution or one journey.

Insurers now need to form a view on what compliance looks like in a Solvency II world, even though the guidance is still under development, in order to plan for the next 3 years and beyond.

Experience has proven that the technology and data integration solution can be a major component of costs. Its delivery may be on the critical path. Hence it is important to agree the key requirements which influence the scale of the technology solution.

These tend to be the non-functional requirements around the capture of data into the risk calculation engines and onward delivery of MI, for example:

- *Frequency – how often will the MI be required to drive decisions/behaviour? How frequent are these decisions actionable?*
- *Accuracy – does monthly MI need to be based on 'hard/close' information or are estimates in some areas sufficient for decisions to be taken*
- *Granularity – how granular will the MI be required – at what product level can decisions be made?*

Many of the core systems operating within insurance and reinsurance firms were developed in-house more than 20 years ago, and many firms have a history of deferring systems investment.

Efficient on-demand data management requires automated data capture, coordination of workflows and accelerated validation processes. A wide range and large volume of data may need to be managed, including data on assets, policies, claims, reinsurance and operational risk events. This should be supported by a strategic approach to data governance, workflow orchestration and information management to ensure the requisite quality and diversity of data is delivered to the right place at the right time.

Solvency II may require firms to:

- *Improve and automate existing systems, or build new end-to-end processes*
- *Create and populate data marts to perform risk calculations and handle risk modelling activities*
- *Communicate results to the appropriate reporting mechanisms.*

It will be important that any solution design considers the impact on all layers of the organisation so there are no surprises. Figure 5 highlights the breadth of change involved.

Plans may need to factor contingency in from the start and the solution may need to allow for some flexibility as the views of the regulator and positions adopted amongst the insurer's peer group will evolve over the period. Solvency II is likely to impact on a number of ongoing projects in a company so it will be important that these are leveraged appropriately to ensure no duplication of effort.

It will be essential also to make sure that the business impact is understood, that the business is ready for it and that the key business decision makers are involved from the start.

Key

H	High Business Impact
M	Medium Business Impact
L	Minimal Business Impact

Activity Vs Regulatory Dimension	S II	IFRS	SOX	PSB
Data Management – Acquisition, Distribution and Marts	H	M	L	M
Operational Reporting	M	L	L	L
Segment Reporting	H	M	L	L
Finance & Risk Reporting	H	H	L	M
Disclosure	H	H	M	M
Reinsurance & Risk Transfer	H	M	L	M
Insurance Product Portfolio Management	H	H	L	L
Investment Portfolio Management	M	H	L	M
Provisioning	H	H	L	M
Modelling	H	H	L	M
Valuation Bases	H	M	L	M
Stress & Scenario Testing	H	M	L	M
Capital Adequacy	H	L	L	M
Supervisory Review	H	L	H	M
Internal Controls	H	L	H	M
Corporate Governance	H	L	H	M
Risk Management and Reporting	H	L	L	M
Decision Making Culture & Employee Rewards	H	M	M	M

Figure 5 – Anticipated impacts as compared to other programmes of change

Restructuring a business to comply with the Solvency II directive can carry significant structural and financial challenges. The business case for change, both to meet the regulatory requirements and to deliver additional commercial benefits, should be clearly articulated and documented at an early stage. Engagement of senior sponsors throughout the programme will be important to help make sure that key decisions can be taken quickly. Securing the active sponsorship of a senior executive with proven experience in delivering change and the right business level engagement can be crucial to achieving success.

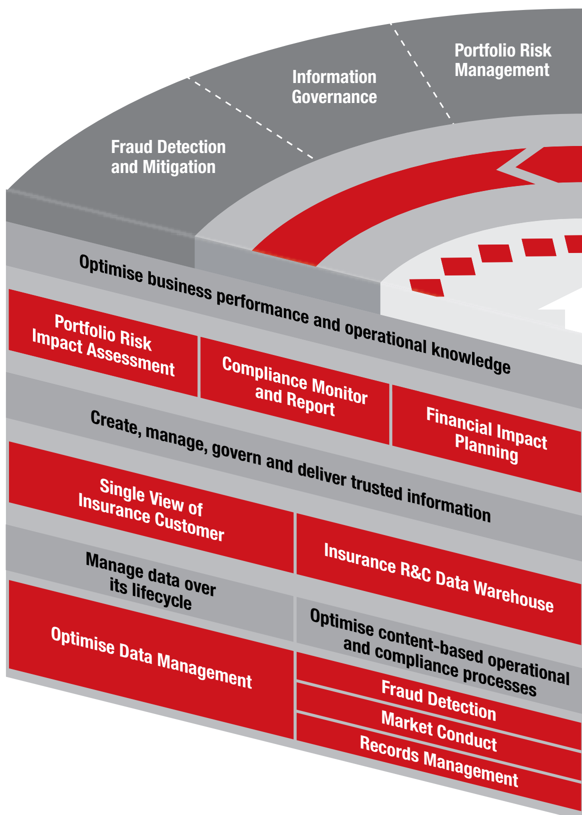

Figure 6 – Key components of a successful enterprisewide risk solution

How IBM can help – Delivering Information Management

IBM has a proven track record in designing and delivering business transformation programmes and has worked with many leading organisations in finance and insurance implementing processes and systems to satisfy regulatory requirements. We are able to leverage that experience to help insurers successfully achieve Solvency II compliance and aim to deliver additional benefits from a parallel best-in-class business transformation.

IBM can help:

- ***Develop a Solvency II Roadmap*** *to define and prioritise what to do and when*
- ***Create an Information Management Strategy*** *to improve data quality, accelerate data distribution, integrate multi-vendor applications, orchestrate workflows to meet defined objectives, and provide better data for decision makers*
- ***Leverage existing systems and technologies*** *to deliver the required speed of reporting*
- ***Define and implement a Business Transformation Programme*** *that should add value to Solvency II projects by improving customer data, accelerating product design, and embedding cultural and behavioural changes that instil risk management and capital adequacy within day-to-day operations.*

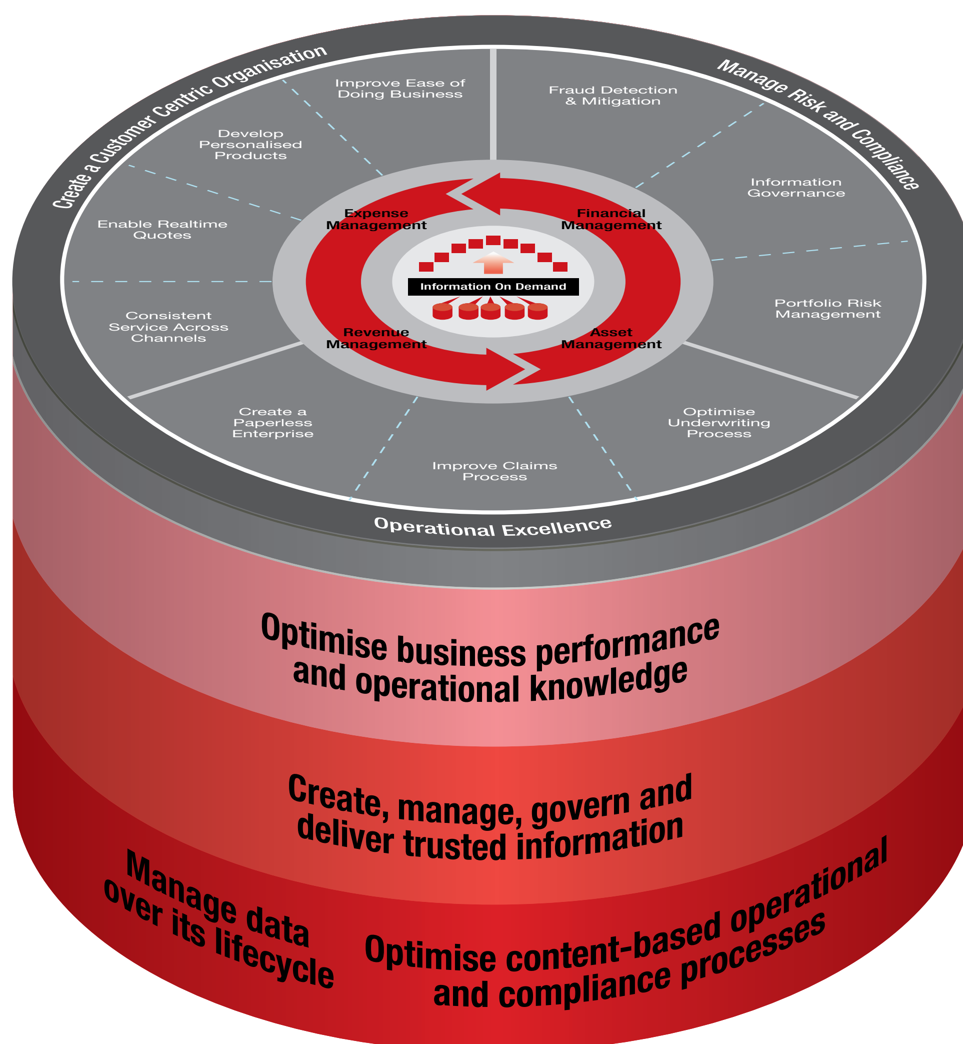

Figure 7 – IBM's Information Strategy

Conclusion

IBM believes that Solvency II should not be constrained to a discrete Pillar I risk calculation or disclosure project, but should represent a charter for business leaders to transform their firms by embedding class-leading, risk-sensitive decision-making into the operational DNA of the organisation.

Compliance requires insurers to identify and measure risk, calculate capital adequacy to meet those risks and use those calculations to drive operational decision-making. As a result, it offers insurers the opportunity to realise much broader, deeper change-related benefits beyond those that regulatory compliance typically delivers. The winners will potentially be those who grab the opportunity with both hands.

It is important that insurers act now and design the programme which provides the right balance of costs and benefits. There is not one solution which fits all or one journey to follow, but failing to act now is likely to be very costly. The difficulty faced by insurers is designing a programme which is both flexible and scalable enough to deal with regulatory guidance whilst it is still under development.

As Charles Darwin stated *'It is not the strongest of the species that survives, nor the most intelligent, but the one most responsive to change'.*

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