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Developing An Effective Risk Management Framework for an Insurance Company

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Title: Developing An Effective Risk Management Framework for an Insurance Company

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A research report submitted to the Faculty of Commerce, Law and Management, University of the Witwatersrand, in partial fulfilment of the requirements for the degree of Master of Business Administration

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ABSTRACT

This research focuses on the development of an effective risk management framework for an insurance company. The emerging regulations namely Solvency II in Europe and Solvency Assessment and Management (SAM) in South Africa are being produced with the objective of ensuring that the policyholders and beneficiaries of insurance companies have adequate protection. The European regulators have produced the Solvency II directive setting out the principles that insurance companies should follow. As such the development of an effective risk management framework for an insurance company is the heart and core of these regulations.

The researcher sent a questionnaire to the respondents to obtain their input and practical insights to the outcome of the literature review. The views of the respondents brought into consideration the practicalities associated with implementing risk management frameworks. The respondents all brought their wide and diverse experience and skills and critiqued the outcomes of the literature review to a greater degree of detail. This process has led to a more robust conclusion on the effective risk management framework for an insurance company. The researcher sent the research questionnaire to stakeholders that included people working in the following categories: Chief Executive Officer, Financial Director, Chief Risk Officer, Compliance Officer, Partners at Audit, Consulting and Advisory firms and Rating Agencies. The respondents were chosen from England and South Africa, with an appropriate representation across each of these categories. The targeted respondents have all responded and each of these stakeholder groups operates from different perspectives on a daily basis. As a result, this mix provides appropriate coverage and balance, and thus the outcomes of this research have been tested robustly.

The conclusion of the research is that the risk management framework as identified in the literature review is applicable.

The components of an effective risk management framework for an insurance company comprise the following elements: Strategic (risk vision, objectives, strategy, appetite, tolerance limits, business strategy); Governance (policy, governance framework and capital integration); Operational (organisation, culture, processes, inputs (data, models, methodology)) and Economic (cost benefit analysis, measuring value of risk management and performance measurement). These conclusions are consistent with the emerging regulations under Solvency II in Europe and SAM in South Africa. Given that the emerging regulations are set at a principles level, the research provides some useful and detailed insights into the considerations as well as some of the challenges associated with implementing risk management frameworks in an insurance company.

The key message from the research has been that there is a lot of detail that should be considered when developing an effective risk management framework for an insurance company. The main focus areas have been identified to be: defining the risk appetite, setting the risk strategy, defining the tolerance limits, organisation, culture, processes, inputs (data, models, methodologies), implementation and ensuring that insurance companies derive value from implementing a risk management framework.

DECLARATION

I, Taurai Michael Gondo, declare that this research report is my own work except as indicated in the references and acknowledgements. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration in the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in this or any other university.

Taurai Michael Gondo

Signed at …Sunninghill…On the …21st ….. day of …May… 2012

DEDICATION

I dedicate this MBA research to my wife Cleopatra and my children Jack, Ethan and Noah.

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I acknowledge my wife and children for bearing with me during the time I spent attending lectures, syndicate meetings and completing assignments.

I acknowledge all my lecturers at Wits Business School who took me through the various modules during my MBA studies.

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CHAPTER 1: INTRODUCTION

This research focuses on the development of an effective risk management framework for an insurance company. The development of an effective risk management framework is one of the objectives of the emerging regulations for insurance companies known as Solvency II in Europe and Solvency Assessment and Management (SAM) in South Africa who are aiming to ensure the protection of policyholders and their beneficiaries. The development of an effective risk management framework for an insurance company is one of the most topical issues in the insurance industry at present.

1.1 Purpose of the study

The purpose of this research is to determine an effective risk management framework for an insurance company based on a review of literature from a range of global industry bodies, rating agencies, professional services firms, principles emerging from the Solvency II (Europe) and Solvency Assessment and Management (South Africa) regulations and other relevant sources. The views of professionals and experts operating in risk, actuarial, finance, accounting, compliance functions as well as those of executives and board members on the outcomes of the literature review will be considered via survey based on a research questionnaire in determining the recommended risk management framework for an insurance company.

1.2 Context of the study

The recent global financial crisis experienced in 2008 to 2010 as well as the responses by regulators of insurance companies in introducing new regulations aimed at improving the protection of the policyholders point to the need to ensure that insurance companies have appropriate risk management frameworks. In this section we provide some background to the emerging regulations and also some of the problems experienced by insurance companies (and the wider financial

services) in order to highlight the importance of effective risk management frameworks in the insurance industry.

Regulatory background

The European Union is introducing a new set of regulations under Solvency II, to be effective in January 2014, that are aimed at establishing a revised set of EU-wide capital requirements, valuation techniques and risk management standards that will replace the current Solvency I requirements. The new regime is expected to apply to all insurance firms with a gross premium income exceeding EUR5m or gross technical provisions in excess of EUR25m (Financial Services Authority (UK) September 2008).

The main objective of the insurance regulation and supervision is the adequate protection of policyholders and beneficiaries (any natural or legal person who is entitled to a right under an insurance contract) (EU Solvency II Directive November 2009).

The Financial Services Board (FSB) in South Africa is also introducing similar Solvency Assessment and Management (SAM) regulations to be effective from January 2014 providing the same objective as Solvency II (SAM Newsletter 1, 2009). Both Solvency II and SAM will consist of three main pillars, namely:

- Pillar I focusing on determining the quantitative aspects of the regulations that determine the amount of solvency capital an insurance company should hold based on either its own risk profile (if the company chooses to build an internal model) of on a standardised risk profile designed by the regulators (should the company choose not to build an internal model).

- Pillar II focusing on the systems of governance and risk management respectively. The purpose of this research is to recommend a risk management framework for an insurance company.

- Pillar III focusing on external reporting and disclosure of the solvency position and risk management frameworks in the insurance company.

The European Union Solvency II regulations have set out the principles for the risk management system in the primary legal text known as the Solvency II Directive (SII Directive). The primary legal text was subjected to review and commentary by industry, leading to the production of the European Insurance and Occupational Pensions Authority (EIOPA) advice for the Level 2 implementing advice for Solvency II system of governance. The regulators are currently producing draft guidelines which will then be followed the enforcement of the regulations in January 2014.

The principles set out in the regulations specify that insurance companies shall have in place an effective risk management system comprising strategies, processes and reporting procedures necessary to identify, measure, monitor, manage and report, on a continuous basis the risks, at an individual and at an aggregated level, to which they are or could be exposed, and their interdependencies. The risk management system shall be effective and well integrated into the organisational structure and in the decision making processes of the insurance with proper consideration of the persons who effectively run the undertaking (EU Solvency II Directive November 2009).

An effective risk management system requires at least the following: (a) clearly defined and well documented risk management strategy that includes the risk management objectives, principles, risk appetite and assignment of risk management responsibilities across all the activities of the undertaking and is consistent with the undertaking's overall business strategy; (b) adequate written policies that include a definition and categorisation of the material risks faced by the undertaking, by type and the levels of acceptable risk limits for each risk type, implement the undertaking's risk strategy, facilitate control mechanisms and take into account the nature, scope and time horizon of the business and the risks associated with it; (c) appropriate processes and procedures which enable the undertaking to identify, assess, manage, monitor and report the risks it is or might be exposed to; (d) appropriate reporting procedures and feedback loops that ensure that information on the risk management system, which is co-ordinated and challenged by the risk management function is actively monitored and

managed by all relevant staff and the administrative management or supervisory body; (e) reports that are submitted to the administrative, management or supervisory body by the risk management function on the material risks faced by the undertaking and on the effectiveness of the risk management system; and (f) a suitable own risk and solvency assessment (ORSA) process (CEIOPS October 2009).

Risk management is the key focus of the emerging regulations of Solvency II (Europe) and Solvency Assessment and Management (South Africa). In order to comply with the emerging regulations, insurance companies in Europe and South Africa respectively have invested in programmes aimed at developing the appropriate risk management frameworks.

As insurance companies constitute a significant part of the financial services industry, a closer look at some of the problems that have been experienced in the wider financial services industry in recent years support the need for effective risk management systems across the board.

Recent global financial crisis and previous failures

The recent global financial crisis that was experienced during the years 2008 and 2009 and whose effects are still being felt to this day demonstrated the impact that a lack of effective risk management systems has on the economy as the effects have been severe. During the global financial crisis, the overall market value of world's banks plummeted at one point by $5.5 trillion since the start of the global financial crisis according to report published by the Boston Consulting Group (BCG). The losses, which were equivalent to 10 percent of the global Gross Domestic Product (GDP) during that period, precipitated a radical restructuring of the world financial order and the rapid decline of the global titans. Only four banks had market values greater than $100 billion each at the end of 2008 namely Industrial and Commercial Bank of China (ICBC), China Construction Bank, JP Morgan Chase and HSBC compared to eleven banks at the end of 2007 (BCG February 2009).

In the report, “Living with New Realities”, the seventh in the annual creating value in banking series, BCG found that the banking industry’s market value fell from $8.8 trillion in the third quarter of 2007 to $4.0 trillion by the end of the year 2008. It fell by a further $700 billion in the first three weeks of this year 2009. The market value of the 30 largest banks, measured by market capitalisation, dropped from $3.2 trillion in 2007 to $1.7 trillion in 2008 – a decline of about 47 percent. ICBC remained the largest bank in the world, measured by market capitalisation – although its value fell by nearly half, from about $339 billion in 2007 to about $174 billion in 2008. Several large banks gained ground in the rankings. JP Morgan Chase rose from seventh to third, forcing HSBC, previously the biggest non-Chinese bank, into fourth position in the world rankings. Two banks leapt into the top 10: Well Fargo at ranking 6 (up from 11 in the year 2007) and BBVA at ranking 10 (up from 15 in 2007) (BCG February 2009).

Since August 2007, the global financial system has experienced a sequence of critical failures. The causes of the financial crisis were both macroeconomic and microeconomic. The microeconomic causes fell into three areas: incentives, risk measurement and regulation (Bank of International Settlements (BIS) 79th Annual Report 2009).

Financial firms saw the need to drive up their returns on their equity to satisfy their shareholders by increasing the debt financing. Compensation schemes further encouraged managers to forsake the long-run prospects for the short-run returns. In addition to failures in monitoring by individuals and flawed compensation schemes, there was another problem in the form of the skewed incentives of the rating agencies. The jobs of rating agencies was made difficult and profitable through the complexity of financial instruments and their pace of issues – the flood of asset backed securities and structured finance products issued over the past decade (BIS 79th Annual Report 2009).

The measuring, pricing and managing of risks all require modern statistical tools based largely on historical experience, even where long data histories are not available due to the permanent down-weighting of the distant past. The natural assumption is that the returns of many different assets are normally distributed

and so have thin tails. Although the tail events are infrequent, in reality they are more frequent than predicted by a normal distribution. The difficulty in assessing the tails of the distribution is even greater for new financial instruments, given their lack of history. The innovation of pooling together large numbers of what were objectively low-quality loans and then creating a mix of high-quality and low-quality securities backed by the pool, allowed debt markets access to an entirely new class of borrowers. The originators retained little of the default risk and so as the boom developed, the quality of loans progressively worsened. (BIS 79th Annual Report 2009).

There was a surge of in the US bank failures in 2008. A total of 25 deposit-taking institutions failed, with combined assets of US$372 billion, about ten times higher than during the previous peak of banking failures in 1993. The failure of Washington Mutual accounted for US$307 billion of the total and was the largest failure in US banking history. One of the results of the credit crisis is the demise of the stand-alone investment bank (BIS 79th Annual Report 2009).

The global financial crisis resulted in the G20 meeting in November 2008 and setting an ambitious agenda for determining the 21st century economic order, agreeing on more stringent regulation of financial markets and tieing banker compensation to long-term performance (Leb Boselovi September 2009).

A year after the global financial crisis, Morgan Stanley experienced successive quarterly losses in earnings during the year 2009. However, despite these quarterly losses, Morgan Stanley earmarked US$3.9 billion for bonuses and other compensation. This earmarked amount was almost three-quarters of its quarterly revenue, far more than banks typically shell out (Hamilton September 2009).

Banking crises have also been experienced in the past. The “Tequilia Crisis” of 1994-1995, which originated in Mexico and spread to Brazil and Argentina, is one of the most significant events in emerging financial markets in the past decade (Calomiris 1999). This crisis initiated debate among economists and policy makers about the sources of financial fragility in the emerging markets and about the need of global financial architecture. This debate intensified in the wake of the problems

in Asia in 1997 and in Russia and Brazil in 1998 (Calorimis 1999). The Chilean and Mexican crises of the 1970s saw the exchange rates and banking systems collapse together and the banking system insolvency problems predated the collapse of the exchange rate peg (Calorimis 1999). The Tequilia Crisis provided policy lessons on dangers of pegged exchange rate regimes, importance of strong prudential supervision of the banking system for prevention of financial crises, importance of managing financial liberalisation and the need for different polices to promote recovery in emerging market countries especially those applicable to industrialised countries (Mishkin 1999). The Tequilia Crisis made the USA aware of the problems that existed in the financial systems and forced the USA to focus on solving these problems (Cavallo 1999). One of the most important lessons from the Tequilia Crisis led to the modifying of the central bank's liquidity policy by orientating it towards liquidity requirements, which are the assets banks have to have, based on their liabilities (Pou 1999), (Kiguel 1999), (Capote 1999), (McTeer Jr 1999).

Insurance company failures

Whilst there has been evidence for banks falling, there is also evidence of insurance companies that have failed. Some of these cases are highlighted in the paragraphs that follow.

America Insurance Group (AIG), the world's largest insurance company at the time of the global financial crisis was prevented from failure and collapse by the Unites States' Federal Reserve. The reasons for preventing the failure was that AIG was the most interconnected to other firms and markets. For example, AIG had insured many billions of United States (US) dollars of loans and securities held by banks around the world, and its failure would have rendered those insurance contracts worthless, imposing large losses on the global banking system.

In addition, banks had extended more than $50 billion in credit to AIG, much of which would have been lost. Many other serious consequences would have followed from a default by AIG such as insurance policyholders would have faced

considerable uncertainty about the status of their policies, state and local governments that had lent more than $10 billion to AIG would have suffered losses, workers whose 401(k) plans had purchased $40 billion of insurance from AIG against the risk of loss would have seen that insurance disappear and holders of AIG's substantial quantities of commercial paper would also have borne serious losses. The disorderly failure of AIG would have put at risk not only the company's own customers and creditors but the entire global financial system (Bernanke April 2009).

The global financial crisis served a wakeup call to the life insurance industry. As fallout of this crisis, the industry will likely re-examine its product design, product line up, and competitive advantages, and re-price its products reflecting the challenging investment reality and higher capital required now for this business. This likely will lead to industry-wide price increases. Insurers who are more likely to survive are those with the scale and scope to offer more diversified products with a larger asset base and stronger capital as well as insurers with more niche distribution or customer services that appeal to and help retain certain consumers. These developments could pressure smaller insurers with small market niches to merge or be acquired by larger companies (Klein 2009).

In England, United Kingdom, there is also evidence of an insurance company that failed due to failure in risk management. The case in point is that of Equitable Life. In 1956-57, Maurice Ogborn developed Equitable Life's original with profits retirement annuity contract. The retirement annuity policy did not begin to make impact until the 1970s. The annuity guarantees reflected in the annuity scale incorporated into other contracts were initially based on low rate of investment return of 2½ %, later increasing to 3%. In October 1975, the rate was increased to 3½%. The implicit interest rate component in the conversion rate in possession, originally 4%, was increased in October 1975 to 7%.

The increase in the investment rate and the conversion rate reflected the generally upward trend in interest rates until the mid-1970s. In the 1980s, however, when market rates began to fall, Equitable Life did not revise the

investment rate or conversion rate implicit in contractual guarantees in response (Penrose March 2004).

In addition to guaranteed annuity rates, Equitable Life followed a general view that the terminal bonus was not and did not need to be provided for in mathematical reserves or technical provisions. Unlike other life insurance companies, Equitable Life adopted an extreme view that funds did not have to be held in any form to cover any material part of future payments of terminal bonus. Equitable Life computed distributable surplus without reference to terminal bonus other than that paid during the period ended with date of the valuation. The Board of Directors of Equitable Life was informed that the terminal bonus was technically efficient because one did not have regard to what was allocated, only to what was paid. By disregarding accrued terminal bonus, the Society was able to over-allocate bonus beyond its available assets at market value, and in particular to make payments on claims that exceeded the relative available assets at the time (Penrose March 2004).

Furthermore, between 1990 and 1996, Equitable Life valued its annuity liabilities in its published financial statements on a basis that differentiated its future bonus rate from the valuation interest rate, using an interest rate higher than the bonus rate. The higher rate was used in its net premium valuation for regulatory purposes. The result was to reduce the liability valuation and inflate the surplus. This was not consistent with best actuarial practice and was inconsistent with Equitable Life's own established practice. The practice generated surplus available for allocation by mathematical means that were inconsistent with an intuitive view of Equitable Life's ability to pay. The allocations, over the period affected were reflected in policy values, and in particular in claims values, throughout the 1990s (Penrose March 2004).

Equitable Life also lagged behind generally accepted thought in adopting updated mortality factors in valuing its annuity business, deferred and in possession, thereby increasing the surplus available for allocation, by reducing the long-term liabilities. In addition, Equitable Life took a number of measures to bolster its solvency position for regulatory purposes and help mask a deteriorating realistic

position. For example, Equitable Life included in its assets for office purposes “aspirational” assets in the form of the new business loan expenditure on computer systems etc, that were not realisable and should have been disregarded on a prudent basis (Penrose March 2004).

The combined effect of these and other factors was that as at 31 December 2000, the excess policy values over assets was about £3 billion (i.e. liabilities were greater than assets), of which £1.8 billion had crystallised and had been lost to the fund through claims. On 30 June 2001, the deficit was £4.4 billion. This resulted in policy values being cut in July 2001, bringing aggregate policy values and underlying assets more into line and for the first time during this period. Despite the company making attempts to correct the imbalance, particularly after 1997, the ratio of policy values to assets never fell below 100% prior to the 2001 adjustment. The fundamental impact of this was that claims continued to be paid out well in excess of asset share, thereby exacerbating Equitable Life’s financial weakness and placing a greater strain on new and in-force business (Penrose March 2004).

This classic example demonstrates a situation where Equitable Life was promising its policyholders more money than it actually had available for more than a decade. Roy Ranson, an actuary and chief executive, formulated Equitable Life’s policy on guaranteed annuities in 1983 which was later ruled as illegal by the House of Lords in July 2000. Roy Ranson did not tell the rest of the Board of Directors of until 1993 and policyholders were only told of this in 1995 at the earliest. Thus Roy Ranson ran a large with-profits fund worth £30 billion without significant control by his colleagues, his board, the auditor or the regulator (Verity BBC March 2004).

In South Africa, an example of an insurance company that failed was Fedsure Life Assurance (before it was taken over by Investec).

Fedsure Life Assurance’s failure was singled down to ineffective asset and liability management. The single biggest lesson learnt in Fedure Life Assurance’s failure was the discipline of asset and liability management must be well understood, practiced, integrated and acknowledged throughout the operational and strategic

management and governance of the company. The asset and liability management for the main life fund and the immediate annuity portfolio were found to be ineffective. It must be noted however that Investec bought Fedsure Life Assurance as a sound ongoing business at a price consideration of R4billion (Marx and Stander).

A number of adverse events that had occurred in a relatively short period of time pressurised the Fedsure Life Assurance's management and systems beyond their capabilities. The key financial effects were therefore poor bonuses paid to policyholders, reputation damage and the erosion of Fedsure Life Assurance's financial strength (Marx and Stander)

The examples as observed in the USA, England and South Africa illustrate that insurance companies can either have challenges or in some cases fail and hence underlines the need for effective risk management.

As could be noted in the different examples, the insurance industry in general provides assurance and protection against losses and failure to different groupings of policyholders ranging from individual personal policyholders to institutional. Therefore, failures by insurance companies have far and wide ranging impact to the economy at an aggregate level. The importance of having robust risk management practices in the insurance industry is therefore critical.

In a study conducted in the year 2002 on practical lessons from recent "failures" of European Union insurers over a six period from 1996, various causes of failure were identified which include inappropriate policy, lack of understanding of insurance, conflicting objectives, failure to properly integrate mergers and acquisitions, poor management attitude, gambling on future economic conditions, focussing on non-core business, ignoring changes in market, mismatching of assets and corresponding liabilities, inappropriate distribution strategies, inadequate reinsurance and outsourcing key functions (McDonnell December 2002).

The insurance industry is generally further behind than the banking industry in the development of international risk driven solvency standards. However, the

European Union has tried to replicate the success of the Basel Committee initiative and has promoted the Solvency Framework project. Solvency I became effective among EU Member states as of January 2004 and provided an initial, more fragmented, risk-based set of capital requirements for insurance providers operating in Europe. The intention of Solvency II, which is under development and refinement, is to focus on an enterprise risk management approach to operational uncertainties. If successful, the Solvency II holistic approach to risk management could foster new federal reforms in the USA, where the insurance industry is regulated by the Insurer Model Act of 1992 (Tonello 2007).

1.3 Problem statement

The purpose of this research is to determine an effective risk management framework for an insurance company based on the review of literature from a range of global industry bodies, rating agencies, professional services firms, principles emerging from the Solvency II (Europe) and Solvency Assessment and Management (South Africa) regulations and other relevant sources. The views of professionals and experts operating in risk, actuarial, finance, accounting, compliance functions as well as those of executives and board members on the outcomes of the literature review will be considered via survey based on a research questionnaire in determining the recommended risk management framework for an insurance company.

The findings of this research will be of use to insurance companies in addressing the issues that need to be considered when developing risk management frameworks that will satisfy the regulatory objective of ensuring the protection of policyholders and beneficiaries while at the same time providing scope for deriving commercial value instead of focusing risk management only for compliance purposes. This approach considers the requirements of all the affected stakeholders. For example, shareholders would look at value-add, whilst regulators would look at compliance and the policyholders look at the protection of their investments.

1.4 Significance of the study

The study has a local and global significance given that a number of countries such as South Africa, EU countries and Latin America countries like Mexico and Colombia are changing their existing regulations governing insurance companies to align these with the emerging Solvency II (Europe) regulations. The emerging regulations will affect long term insurance, short term insurance and reinsurance entities.

In addition, the stakeholders as affected by these regulations include policyholders, beneficiaries, companies or institutions, regulators and the governments. The recent global financial crisis demonstrated that the failure of the financial services industry has the potential to cripple the local and global economy.

The increased regulatory scrutiny on risk management has led to a significant investment by insurance companies in programmes aimed at improving their risk management frameworks and practices.

1.5 Delimitations of the study

This research will focus on the high level components of the risk management work framework and will not introduce significant detail on the implementation thereof as this will depend on the nature of the insurance company. The high level framework will still be appropriate but its application can take different forms depending on the entity. The research provides sufficient insights into the key considerations and the issues companies will need to grapple with.

Risk management information tends to be proprietary. The respondents to the survey have considerable skill, experience and qualifications related to the field of risk management and as such they will be able to provide valuable insights to the research questions based on their individual experience. The respondents are also some of the leading voices in the emerging regulations, participating in different forums and as such their expert views can be relied upon.

Although the Solvency II (Europe) and the Solvency Assessment and Management regulations are currently under development, there is sufficient progress and traction to make reasonable conclusions. Given the research is focussing on the main components that are relevant for management consideration it is unlikely that the final form of these regulations could impact on the recommended risk management framework for an insurance company. The number of respondents will be between twenty-five and thirty. Although these do not represent the entire industry, the respondents operate at a very senior level and across a broad spectrum so that their insights to the research problem will be appreciable across the industry.

Thus the potential limitations have been sufficiently mitigated.

1.6 Definition of terms

Due to the technical nature of the subject being investigated, the common terms discussed throughout this research are referenced in this section. The definitions provided have been primarily sourced from CEA for insurers (CEA March 2007).

The terms defined are used throughout this research report. Although the main reference for the definitions has been the CEA for insurers, others sources of definitions exist however, these are not different from the CEA's definitions.

Annuity – contract that provides a series of regular payments (both amount and timing) by the insurer (amount payable / benefit) under specified conditions for a specified period of time.

Asset-Liability Management – The management of an insurer's assets with specific reference to the characteristics of its liabilities so as to optimise the balance between risk and return.

Asset-Liability mismatch risk – Risk of a change in value from a deviation between asset and liability cash flows, prices, or carrying amounts, caused by a change in actual cash flows (for assets and/or liabilities), a change in the expectations on future cash flows (for assets and / or liabilities)) and accounting inconsistencies.

Back Testing – The process of comparing actual experience with statistical predictions.

Biometric Risk – Underwriting risks covering risks related to human life conditions, e.g. death, disability, longevity, but also birth, marital status, age, and number of children (e.g. in collective pension schemes).

Business Risk – Unexpected changes to the legal conditions to which insurers are subject, changes in the economic and social environment, as well as changes in business profile and the general business cycle.

Claims Risk - An underwriting risk. A change in value caused by ultimate costs for full contractual obligations (claims without administration costs) varying from those assumed when these obligations were estimated.

Concentration Risk – The exposure to increased losses associated with inadequately diversified portfolios of assets and/or obligations.

Confidence Level – Statistical measure of the level of certainty regarding an outcome, typically expressed as the probability value (1-α) associated with a confidence interval. The confidence level is often expressed as a percentage, e.g. the confidence level with $\alpha = 0.05$, is the 95% confidence level.

Contagion – The propagation of the effect of a failure or financial distress of an institution in a sequential manner to the other institutions, markets or systems, or to other parts of a financial group or financial conglomenrate.

Credit Risk – The risk of a change in value due to actual credit losses deviating from expected credit losses due to the failure to meet contractual debt obligations.

Default Risk – The risk of a change in value caused by the fact that actual default rates deviate from expected default rates with respect to non-payment of interest or principal.

Diversification – Reduction in risks among assets and/or obligations of an institution by accumulating risks that are not fully correlated in an aggregated risk position, e.g. the aggregated amount of risks within a product portfolio or at a company level is similar compared to the simple addition of the individual risks.

Economic Capital – Internally defined capital measure based on the companies' valuation of the market-consistent value of assets minus the market-consistent value of obligations.

Embedded Value - An estimate of the value to shareholders of a book of insurance business at a given date, consisting of free surplus allocated to the covered business, required capital less the cost of holding required capital and value of future shareholder cash flows from in-force covered business.

Enterprise Risk Management – A holistic approach to identifying, defining, quantifying and treating all of the risks facing an organisation, whether insurable or not. Unlike traditional risk management, enterprise risk management deals with all types of risk, such as hazard or event risk, operational risk, credit risk, and financial risk.

Equity Risk – The risk of a change in the value caused by deviations of the actual market values of equities and/or income from equities from their expected values.

Expense Risk – The risk of a change in value caused by the fact that the timing and/or the amount of expenses incurred differs from those expected, e.g. assumed for pricing basis.

Guaranteed Benefit – Payments or other benefits to which a particular policyholder or investor has an unconditional right that is not subject to the contractual discretion of the insurer.

Inflation Risk – The risk of a change in value caused by a deviation of the actual market-consistent value of assets and/or liabilities from their expected value, due to inflation, e.g. price inflation, wage inflation, etc, leading to an unanticipated change in insurance cost and/or impact of an insurance contract, e.g. with respect to contract limits.

Insolvency – The point at which under national bankruptcy procedures the owner loses ownership rights and/or the policyholders are no longer entitled to the orderly settlement of contracts.

Insurance Contract – A contract under which one party (the insurer) accepts significant insurance risk from another party (the policyholder) by agreeing to compensate the policyholder or its beneficiary if a specified uncertain future event (the insured event) affects the policyholder.

Insurance Obligation – An insurer’s contractual obligations/rights under an insurance contract.

Interest Rate Risk – The risk of a change in value caused by a deviation of the actual interest rates from the expected interest rates.

Internal Model – Risk management system of an insurer for the analysis of the overall risk situation of the insurance undertaking, to quantify risks and/or to determine the capital requirement on the basis of the company specific risk profile.

Legal Risk – The possibility that lawsuits, adverse judgements from courts, or contracts that turn out to be unenforceable, disrupt or adversely affect the operations or condition of an insurer.

Longevity Risk – Type of biometric risk. A change in value caused by the actual mortality rate being lower than the one expected.

Market Risk – The risk of changes in values caused by market prices or volatilities of market prices differing from their expected values.

Market Value – The amount for which an asset could be exchanged or a liability settled, between knowledgeable, willing parties in an arm's length transaction based on observable prices within an active, deep and liquid market which is available to and generally used by the entity.

Minimum Capital Requirement - The capital level representing the final threshold that triggers ultimate supervisory measures in the event that it is breached.

Model Risk – The risk that a model is not giving correct output due to a misspecification or a misuse of the model.

Morbidity Risk – Type of biometric risk. A change of value expected caused by the actual disability and illness rates of the persons insured deviating from the ones expected.

Mortality Risk – Type of biometric risk. A change in value caused by the actual mortality rate being higher that the one expected.

Operational Risk – Risk of a change in value caused by the fact that actual losses, incurred for inadequate or failed internal processes, people and systems, or from external events (including legal risk), differ from the expected losses.

Rating Agency Driven Capital – Amount of capital the rating agencies expect the company to hold for a given rating.

Reinsurance – Type of risk mitigation on the basis of an insurance contract between one insurer or pure reinsurer (the reinsurer) and another insurer or pure insurer (the cedant), to indemnify against losses, partially or fully, on one or more contract issued by the cedant in exchange for a consideration (the premium).

Scenario Analysis – Simulation of alternative set of parameters within a model in order to establish the impact on the outcome. The following types of scenarios analysis can be distinguished namely historical scenarios, hypothetical scenarios and once-off events (e.g. simulation of strategic decisions).

Sensitivity Analysis - A simulation designed to test the robustness of a relationship or projection, given various changes in the underlying assumptions.

Solvency Capital Requirement – The amount of capital to be held by an insurer to meet the Pillar I requirements under the Solvency II regime.

Standard Formula – in the context of the Solvency II regime, a set of calculations prescribed by the regulator for generating the Solvency Capital Requirement.

Strategic Risk – Type of business risk. The risk of a change in value due to the inability to implement appropriate business plans and strategies, make decisions, allocate resources, or adapt to changes in the business environment.

Stress Test – A type of scenario analysis in which the change in parameters are considered significant, or even extreme.

Surplus Capital – Term commonly used to refer to that part of the available solvency margin that is held by an insurer in excess of the Solvency Capital Requirement.

Underwriting – The risk of a change in value due to a deviation of the actual claims payments from the expected amount of claims payments (including expenses).

Value-at-Risk – is a quantile of a distribution and used as a (non-coherent) risk measure. For example, if the twelve month value-at-risk with a 95% confidence level ($\alpha = 0.05$) represents the amount of one million Euro, this means that an insurer would only expect to lose more than one million Euro once in 20 years ($1/\alpha$).

Risk appetite – The degree to which an organisation's management is willing to accept the uncertainty of loss for a given risk when it has the option to pay a fixed sum to transfer that risk to an insurer.

Risk Adjusted Return On Capital – A target return on equity (ROE) measure in which the numerator is reduced depending on the risk associated with the instrument or project. This is a term used in the financial services industry and in enterprise risk management. In the insurance industry, RAROC is typically employed to evaluate the relative performance of business segments that have different levels of risk, the different levels of risk are reflected in the denominator.

1.7 Assumptions

This research makes several assumptions. Some of the key assumptions are:

- The sample of respondents to the survey will be of a reasonable size to provide sufficient insight and input into the determination of an appropriate effective risk management framework for an insurance company. This is a reasonable assumption in the context that the information on risk management can be considered proprietary and hence many stakeholders may not want to disclose any information

- The respondents to the survey have the necessary skills, knowledge and experience to provide sufficient critique and insight. This is a reasonable assumption as the respondents to the survey are professionals such as actuaries, chartered accountants, chartered financial analysts, risk managers, compliance officers executives and directors

- There is limited literature on the subject, especially as the regulations are still developing. The research therefore considers an appropriate risk management framework at the same time that the industry is also getting to grips with the form and direction of the emerging regulations

- The referenced papers includes papers from academics, professional bodies e.g. Society of Actuaries (USA); Institute and Faculty of Actuaries (UK); rating agencies, consulting firms, regulatory papers issued by the European Union and South Africa's Financial Services Board. The literature reviewed provides sufficient detail and balance to understand risk management frameworks.

CHAPTER 2: LITERATURE REVIEW

2.1. Introduction

The topics covered under the literature review and their sequence is structured in a manner that provides detailed insight into the components of an effective risk management framework for an insurance company. Each of these topics is discussed in sufficient detail.

2.2. Definition of topic or background discussion

The topic definition and background has been provided in section 1 above. The purpose of this research is to determine an effective risk management framework for an insurance company.

2.3. Risk Management Framework

The literature review provided in the following sections will establish the risk management framework that is appropriate for an insurance company given the emerging Solvency II and SAM regulations. This literature review utilises a broad list of sources such as regulators (e.g. FSA, FSB), supervisors (e.g. EIOPA (formerly CEIOPS)), industry bodies (e.g. Committee Of Sponsoring Organisation (COSO)), standards organisations (e.g. International Standards Organisation (ISO)), rating agencies (e.g. Standard & Poor's, AM Best), consulting firms (e.g. KPMG, PwC, Deloitte, EY), commissions of enquiry into risk management (e.g. Walker Review, Turner Review) and corporate governance (e.g. King III).

The literature reviewed is holistic and thus provides a reasonable basis to make the recommendation on an effective risk management framework for an insurance company. Insurance companies will also be expected to adopt this holistic approach when developing their risk management frameworks.

The outcome of analysing the literature is that an effective risk management framework for an insurance company will have the components described in the sections below.

2.4. Components of a risk management framework

The conclusions drawn from the literature review on risk management framework for an insurance company are that this framework should comprise of a number of components, each as described under the following sections.

2.4.1 Background: Elements of a risk management framework

A risk management framework should comprise of a number of elements such as mandate and commitment to managing risk, designing of a framework for managing risk, implementing risk management, monitoring and review of the framework and continual improvement of the framework (ISO/DIS 31000 2008). The principles and process respectively for managing risk will operate in the context of the risk management framework. The PwC survey reviewed that only 38% of insurers included in their survey had standards for managing risk (PwC June 2008). Without a robust framework for managing risk, the likelihood of failure of companies will be high as happened with the global financial crisis (Turner 2009).

Risk management is not a luxury but rather a necessity. The complexity of today's financial products and financial engineering underscores the need for a holistic approach to risk. The key elements of the risk management framework include a strong risk management culture, setting the tone at the top, use risk management as a preventive measure, understand correlations with the market, robust liquidity management system, counterparty management system, risk categorisation focusing on areas of high risk, aggregate risk exposures, understand the models and assumptions and conduct stress testing (Klein *et al* 2009).

Whether at the helm of a bancassurance group or a financial holding company, one must rely on an integrated risk management framework throughout the whole

organisation. Approaches to risk management structures include group risk reporting, quality control, monitoring and management (Enterprise risk management specialty guide 2006).

2.4.2 Governance, Risk Management and Compliance

Risk management should not be considered in isolation but rather in an integrated manner in the context of wider governance and compliance requirements. This view has been supported by an analysis of Standard & Poor, AM Best, Walker Review, Turner Review, King III and KPMG. The concept of an integrated governance, risk management and compliance framework as opposed to a pure risk management framework should be the focus. This will also lead to a strategy being developed that looks at the composite of governance, risk and compliance (KPMG, 2009).

The literature sets out the importance of a governance framework. The governance framework provides the integrity and context within which the risk management framework will operate. Governance needs to be considered for each of the components of the risk management framework. Failures in governance can lead to the failure of the entire management framework.

Traditionally, each of governance, risk and compliance have been implemented and managed separately in organisations. The recent views emerging from the literature is that these should be considered jointly together. This view is based upon the manner in which these elements dovetail and that companies cannot manage risk without managing considering the compliance and governance functions.

2.4.3 Organisation and Responsibility

The ultimate responsibility of risk management falls with the board of directors. The board of directors may delegate this to a specific committee such as the risk committee (Walker 2009). The responsibilities of the board of directors on risk management are onerous and require that directors know the levels of

responsibility they are taking (King III 2009). Ongoing training and education is therefore critical for the directors.

The directors are required to translate their approach to risk in a risk management policy (King III 2009). Plans for developing the risk management framework should be part of the periodic strategic and business planning. Furthermore, the board should not place over reliance on the various committees that have been set up and should regularly review the effectiveness of their oversight of risk management (FSA November 2006).

In addition to setting up a board risk committee, the board also relies on a competent, experienced and skilled chief risk officer in the day to day execution of the risk management activities (Walker 2009).

The three lines of defence should be in place, with committees at each level, as appropriate to the particular organisation (Deigthon 2009).

In an environment where the capital in each legal entity is based on the required risk-based capital, then the linking these two will be discussed at an appropriate committee. Risk committees have tended to focus only on risks but not on capital. However with Solvency II, where the approved internal models will need to pass the use test, risk committees will take more control and have more focus on the integration of risk management and capital management (Deighton 2009).

2.4.4 Risk Management Policy

The risk management policy provides an important opportunity for the insurer to establish and communicate the philosophy and minimum requirements for the management of the portfolio of risks to which the insurer is exposed. Risk management policy should be set and approved by the board (King III 2009).

The risk management policy should include risk management philosophy, relationship between risk management and the mission, values and strategic objectives, embedding risk management in processes of capital management, pricing reserving and performance management, scope of activities covered by

the policy, supervisory requirements and considerations, risk categories, risk terminology, risk appetite framework, risk tolerance, governance and oversight, behaviour of staff, roles and responsibilities of staff, roles and responsibilities of internal audit, compliance, minimum process level requirements, requirements to conduct an own risk and solvency assessment, reviewing and updating of the policy (International Association of Actuaries August 2008).

2.4.5 Roles and responsibilities

Risk management is not limited to the risk department but rather is a responsibility of all the employees of the entity. The challenge for any governance system is to ensure that these responsibilities are very clear to everyone. The starting point must be the board (Deighton 2009).

It is increasingly common that organisations have their Chief Risk Officer as a member of the executive management. The Chief Risk Officer can be responsible for the entire risk profile or some components of it. In organisational models where a Chief Risk Officer has partial responsibility, they will either focus on managing non-financial risks instead of the full-suite of risks. In such models, the financial risks are managed by the chief actuary in life insurance or the underwriting director in general insurance (Deighton 2009).

The reporting line of the Chief Risk Officer (CRO) also varies with each entity. The reporting lines are often to either of the Chief Executive Officer (CEO), Chief Operating Officer (COO) or Chief Financial Officer (CFO). Many CROs report to the CEO signifying the importance of the CRO. In models where the CRO reports to the COO, this is often a natural consequence of the CRO being responsible for non-financial risks only and usually an entity having finance or actuaries or underwriters managing the financial risks. There are also many models where the CRO reports to the CFO (Deigthon 2009).

In other organisational models, the CRO reports to the CEO only, and in other, the CRO reports to the CEO, Executive Risk Committee, Board Risk Committee and Audit Committee (Tonello 2007). In other models, the CRO reports into the

Regulator, Board, CEO, Internal Audit, External Audit and an ERM Executive Committee (Kruse 2009).

2.4.6 Risk strategy

Defining a clear risk strategy and vision is a key step for successful implementation of a risk management framework. The risk strategy is there to paint the vision as clearly as possible. The risk strategy needs to cover an agreed overall value framework for enterprise risk management and should include a discussion of objective setting, and how individuals will be driven to achieve those objectives (Deighton 2009).

The relationship between the CRO and CFO is a very important one as amongst other things the CRO and CFO share the objectives of improving earnings predictability and limiting exposure to adverse variations in earnings. Managed well, the relationship can be a source of value creation for shareholders and security for policyholders. CFO and CRO strategies therefore need to be integrated (International Association of Actuaries August 2008).

2.4.7 Risk Appetite

Risk appetite defines the level and nature of risks to which the board considers it acceptable to expose the firm (FSA November 2006). Standard & Poor's defines risk appetite as the framework that establishes the risks that the insurer wishes to acquire, avoid, retain and/or remove (Standard & Poor's March 2010). Most literature suggests that an important first step of a successful enterprise risk management program is the determination of the organisation's risk appetite (Kamiya 2007). The common thread across the definitions of risk appetite is the need for the company to decide on the appropriate amount of risk it can accept in order to enhance the organisation's value over a given time frame (Bennet 2007). In their assessment of companies, rating agencies also consider the risk appetite as an important element (Standard & Poor's 2006, AM Best 2008).

There are some decisions that can be considered in defining the risk appetite, including defining in terms of risk only, risk-return trade off, relative to regulatory capital, economic capital, rating threshold or earnings. In practice, qualitative and quantitative measures are used (Bennet 2007).

This view is also supported by (Hopkin June 2009) who proposes that measuring can be done by setting boundaries on a probability and impact grid and drawing a line to demarcate the boundary between those risks that are deemed “acceptable” and those that are not, economic capital measures or (balance sheet based expressions), changes in credit ratings, profit and loss expressions of risk appetite which are often popular with shareholders and boards of quoted companies and value based measures of risk appetite. The value based measures have received much less attention in the practical literature than areas such as economic capital or profit or loss.

According to Hopkin, measuring can also be done through the setting of limits, targets or threshold for key indicators which take the form of key risk indicators (indicators which help an organisation to monitor changes in its exposure to a specific event), key control indicators (indicators that help an organisation to determine whether specific controls are operating effectively), key performance indicators (indicators that an organisation monitors to keep track of its financial performance or operational efficiency) and qualitative statements that include statements like “we have a very low appetite for risk”, “we have no appetite for fraud or financial risk”, “we have zero tolerance for regulatory breaches”.

Cascading down risk appetites from pure statements to operational level has proved challenging for most firms (FSA November 2006). The global financial crisis exposed a number of weaknesses in insurers’ risk appetite frameworks with some insurers having been quite active in seeking risks that they have not fully understood and could manage within their specified risk tolerances (Standard & Poor’s March 2010).

One of the drivers of the increased attention to risk appetite is regulation, particularly the adoption of risk based capital requirements by financial services

regulatory bodies. The Basel II regime required banking organisations to clearly link capital levels to risk profile, take a hard look at risk management frameworks, and increase disclosures related to risk profiles (Bennet 2007).

Although risk appetite is sometimes equated with risk tolerances or risk threshold, risk appetite is more complex than these alternatives. Risk tolerance and risk threshold imply that risk only has a negative or painful aspect and that there is a certain amount of risk that can be borne and no more. Risk appetite recognises that risk has a positive element as well, and not just a downside, so the decision about assuming risk involves much more than simply measuring potential negative results. Risk appetites can take different forms that include qualitative and quantitative and/or a combination (D'Acry March 2009).

The insurance regulators are also requiring for insurance companies to be clear on their risk appetite. Within the industry, risk appetite is a topical issue.

2.4.8 Risk Tolerance

Risk tolerance is the acceptable level of variation around profit targets, aligned with the risk appetite (Watson 2006). Risk tolerance can also be defined as the acceptable variation relative to the achievement of objectives (Kamiya 2007). By defining risk tolerance, the board and senior management attempt to manage the risk appetite at the enterprise or "top-down" level by defining a combination of qualitative and quantitative risk tolerances by business unit or from a bottom-up level (Bennet 2007). Standard and Poor's view risk tolerances as quantitative risk appetite statements and risk tolerance may help an insurer to translate the board's risk preferences into action through constraining the insurer's exposure to risk (Standard & Poor's March 2010).

Risk tolerances have implications for economic and regulatory reporting, capital management, financial planning and budgeting, and risk monitoring. Some of the types of risk tolerances used by insurers include maintaining capital adequacy consistent with target economic capital adequacy following a 1 in "X" year event over the following year, maintaining regulatory solvency following a 1 in "X" year

event over the following year, constraining losses to within one quarter's budgeted earnings following a 1 in "X" year over the following year and maintaining the ability to pay a percentage of current dividends following a 1 in "X" year event over the following year (Standard & Poor's March 2010).

Other examples of measuring risk tolerance levels exist, for example, a specified percentile (e.g. 98th percentile), often related to the financial strength rating of the company (Mueller 2004).

It is important that each insurer develops a statement of risk tolerance appropriate to the insurer's own circumstances. Some insurers may choose to develop high level statements of risk tolerances whereas others may define risk tolerance at the risk category level (Source: Deloitte Touche Tomatsu).

2.4.9 Embedding Risk Appetite into Business Strategy

In a study by the Financial Services Authority in England in 2002 on practical lessons from recent failures of European Union insurers, one of the conclusions was that management problems appear to be the root cause of every failure or near failure, so more focus on underlying internal causes is needed (FSA December 2002).

Standard & Poor's assesses whether or not companies are making strategic decisions based on economic risk/reward metrics and requires supporting evidence (Standard & Poor's March 2010).

The Basel Committee indicated that there are three main areas where the use of model components for internal risk management purposes should be observable namely strategy and planning processes, exposure management and reporting. In their view, uses of model components for internal risk management in any of these areas provide evidence of internal use model components. If the model components are not used in some of these areas, the supervisory authority may require an explanation for such non-use, or may arise concerns about the quality of the model components (Basel, 2007).

The risk appetite needs to be split between geographies and operating divisions, so that it can be delivered at every level within the company. The risk appetite will need to be linked to the value framework to help achieve a better focus on managing risks important to the company, rather than just specific to the individual. The value frameworks should include how local management performance targets can be adjusted to reflect group actions and group requirements, otherwise local divisions will feel isolated and alienated from the overall group strategy, and will continue to act in their own interests rather than the overall benefit of the group (Deighton 2009).

The Solvency II regulations have produced guidelines on how the use test will be applied to insurance companies. The usage and application of the risk appetite forms one of the critical decisions by an insurance company (EIOPA 2011).

A study by the FSA found a number of difficulties in implementing the risk appetite framework such as the numerous ways available to describe the meaning of risk appetite. A good risk appetite statement should make clear the tolerance levels and be capable of being used as a trigger for escalation or notification of issues to senior management, should be taken beyond a written definition and should be promoted to create a common understanding throughout the business. Firms also struggle to produce risk appetite statements that have practical application to issues that have more than monetary implications (FSA November 2006)

Risk appetite is hard to integrate through the organisation due to a combination of external and internal issues. External considerations include balancing the needs of the various stakeholders, market pressures and decisions such as hedging that cover short durations. Internal considerations include lack of skills, top down communication, consolidation of bottom up numbers and aligning these with the overall strategy (Bennet 2007).

Other challenges could arise as a result of the limitations around modelling (Bennet 2007). Any risk appetite would have to note that the underlying model itself may be wrong. For example, a £100m loss, although modelled being a 1 in

50 year loss, may in reality have a much higher or lower probability (Deighton 2009).

2.4.10 Risk Management Culture

A risk culture must be implemented and maintained by the board and senior management. Enterprise risk management training may help boards and management appreciate the implementation and the value of a risk culture. The training will however not create the culture but rather raises an awareness. The actual culture will be the product of board and management initiative (Harner 2010).

Deciding on the behaviours is not sufficient to create or reinforce an appropriate risk management culture. There needs to be an effective implementation of risk management frameworks and processes. Furthermore people need to be willing and able to use the appropriate behaviours to support risk related activities. It is these behaviours over time that will create a risk management culture. Human behaviour and capability are therefore key to effective enterprise risk management (International Association of Actuaries August 2008).

Performance management and/or incentive systems should include a recognition or inclusion of a risk management component. For example, a broad scope enterprise risk management implementation that is not accompanied by management incentives tied to clearly defined risk management outcomes, will most likely, fail (International Association of Actuaries August 2008).

Frequently, companies tout their enterprise risk management capabilities with statements that risk management is everyone's responsibility and that the enterprise risk management is used in the course of all business activities. To check that companies are indeed doing this, Standard & Poor's will look for evidence (Standard & Poor's 17 December 2009).

2.4.11 Risk processes

The design and implementation of enterprise risk management is firm specific, but generally involves the board of directors and senior management first mapping the firm's business strategies and risks. Developing an understanding of the linkages between top risk exposures and key strategies and objectives can help both management and risk oversight by identifying where risks are overlapping with an individual business strategy and where certain risks may affect multiple strategies. With this information, the board and management can evaluate the firm's portfolio of risks by assessing the impact and likelihood of each risk event and set the firm's risk appetite (Harner 2010).

A firm need to align the strategic objectives and the processes forming its physical value chain. A firm must be able to build an information underlay which enables the firm to visualise its value chain from end to end, identifying key processes and critical linkages. Enterprise risk management provides firms with an opportunity of self-conscious and self-critical scrutiny of their own degree of clarity, concerning strategic objectives and the expression of those objectives in the physical value chain (Tripp April 2008).

As an example process, an advanced risk cycle would have processes in the form of risk overview, risk identification, risk assessment, risk evaluation, response planning, risk management, risk reporting, review of risk approach, general approach to risk management and regular reviews (Tripp April 2008).

2.4.12 Risk Models, Data and Methodology

In light of the internal model developments, Standard & Poor's are currently revising their enterprise risk management analysis for insurance companies. For insurers who have credible economic capital models and a demonstrated an enterprise risk management culture, Standard & Poor's believe that economic capital model reviews could yield useful information for analysis. The review of economic capital model is referred as the enterprise risk management level III review by Standard & Poor's. Standard & Poor's believe that an economic capital

model is an integral component of an insurer's enterprise risk management program. If an enterprise risk management level III review reveals risk management issues, or if the economic capital model does not adequately quantify the insurer's risks, Standard & Poor would most likely change their enterprise risk assessment of the company and their views on the insurer's capitalisation. In some cases this could affect the insurer's financial strength and counterparty credit ratings, depending on the severity of the matters identified and their relative importance. The economic capital model review is one of the five elements of rating an insurer's enterprise risk management framework (Standard & Poor's May 2010).

In analysing the insurer's modelling of exposures to distinct risk types and groups, Standard & Poor's will analyse the methodology, data quality, assumptions and parameterisation, processes and execution, tests and validation, governance and results (Standard & Poor's May 2010).

Stress testing and related scenario analysis is an important risk management tool that can be used by boards in their oversight of risk management and reviewing and guiding strategy, but recent experience in the global financial crisis showed a number of deficiencies in the banks. Some firms found it challenging before the recent global financial crisis to persuade senior management and business line management to develop and pay sufficient attention to the results of forward looking stress scenarios that assumed large price movements. This is a clear corporate governance weakness since the board is responsible for reviewing and guiding corporate strategy and risk policy, and for ensuring that appropriate systems for risk management are in place (Kirkpatrick 2008).

Several large insurers in the United States America (USA) (e.g. AIG) have developed sophisticated internal risk models, but nevertheless failed to spot the coming of the housing market crash. This has indicated some weaknesses that are present in a principles' based regulation. The rules based regulations could maintain the focus on a set of basic rules, prevent model disillusion, and promote regulatory uniformity across companies. However rules can be somewhat arbitrary

and suffer from disadvantages such as companies finding ways to circumvent regulatory rules (Klein 2009).

Risk management and capital modelling has evolved as the risk environment of the insurance industry has continued to evolve. Modelling tools such as Dynamic Financial Analysis (DFA) and many other risk-based stochastic capital modelling tools, have been around the insurance industry for more than 10 years but until recently have not generated interest. Several stumbling blocks have been the amount of data required to effectively run the model, a fragmented or silo approach to risk management, difficulty in addressing the correlation of risk and questions on using the model output. Additionally, the focus on insurance industry has been largely on the basics of cycle management, underwriting, claims management and asset management. More recently interest has arisen in risk management and the use of sophisticated capital modelling tools (AM Best February 2006).

Justification of the capital necessary should not merely depend on the robustness of the models. The key issue is the inputs, which is robustness (e.g. adequacy, accuracy, consistency and validity) of data. With respect to operational risk for example, the prioritisation and categorisation is difficult because this involves a significant amount of subjective and behavioural issues. Consequently the fundamentals of the quantification of operational risk need to be supported by strong qualitative risk management while ensuring the quality of data and the effectiveness of the balance and control in place within the organisation (Acharyya 2007).

Managing risk on an enterprise wide basis requires a great deal of information, which should be readily accessible and of high quality. However retrieving the data required to generate enterprise risk related information often takes a great deal of time and effort which can frustrate senior executives. Therefore cross-functional data repositories and consistent data definitions can be considered enterprise risk management enablers, which could eventually be leveraged in both risk management and performance management context (Calandro).

In light of the changing regulatory framework in Europe, it will be important to link the internal risk-based capital models to the new regulatory capital models (Errath 2007).

Risk models are also used to handle the methodology aspects of risk management. The methodology aspects would typically include valuation techniques, model vetting and back-testing and capital allocation (Tonello 2007).

2.4.13 Integration with Capital Management

Following the stock market decline of 2002 and persistent low yields on all bonds, the capital bases of many insurers were depleted. These in turn exposed the shortcomings in risk and capital management at most insurers. Management, boards and regulators had to face up to their organisation's inadequate understanding and quantification of the economic risks their businesses were taking on. A firm's risk and capital management framework can be considered a success when decisions change for the better across a range of subjects and at various levels within the organisation. At a group level, this begins with executive management having a better picture of how much capital it is putting at risk and how much return is being or will be achieved in the different business units. A risk and capital management framework further lays out whether these risks and returns are justifiable in terms of the firm's current balance sheet, target solvency standard and risk appetite. This leads ultimately to better decisions that go to the core of how group management creates value (Schiro 2005).

Standard & Poor's believe that the integration of an insurer's economic capital model into its enterprise risk management and thus the insurer's decision making process is a positive factor for strategic risk management. Standard & Poor's analyses capital adequacy in the context of a desired target such as a desired rating category. It also analyses an insurer's ability to meet its obligations by estimating the effect of stress scenarios on the insurer's balance sheet. In determining the insurer's capital adequacy, Standard & Poor's typically compares its rating criteria based capitalisation analysis to its evaluation of the insurer's own

capitalisation analysis, produced by its economic capital model using the same confidence interval and time horizon. (Standard & Poor May 2010).

AM Best have developed Best's Capital Adequacy Ratio (BCAR) which is an important tool to differentiate between companies and indicate whether a company's capitalisation is appropriate for a particular rating level. However BCAR by itself never has been the sole basis for determining AM Best's ratings. AM Best reviews the BCAR model on an ongoing basis and makes modifications to enhance the model in response to industry dynamics including changes in financial reporting requirements, significant regulatory and product developments, and industry trends (Best Rating Methodology January 2008).

During the global financial crisis, the regulatory capital (BaseI II, United States' National Association of Insurance Commissioners (NAIC) Risk Based Capital) and rating agency models (AM Best BCAR, S&P Capital Model) were shown to have strengths and weaknesses. The adequacy of risk based capital charges is undermined when they are based on flawed credit ratings (Klein 2009).

Banks and insurers have been conducting stress tests prior to the sub-prime mortgage crisis. However, most insurers failed to consider scenarios such as a major contraction in the housing market, company rating downgrades, counter party rating downgrades, or the failure of liquidity suppliers. To the extent that senior management fails to consider such scenarios, it is imperative for regulators to ask the right questions. Some international insurance regulators (e.g. in Canada and Australia) were more proactive in providing guidance on dynamic solvency tests. Stress testing needs to take a holistic view of the organisation, including asset risks as well as liability risks. In particular, product lines such as variable annuities may involve significant exposure to equity market declines (Klein 2009).

Capital allocation can also be improved to maximise shareholder value. Capital allocation can be used to facilitate and improve the measurement of the economic profitability of the business with different sources of risk and different capital requirements. The primary link between capital allocation and value maximisation

is to enable the firm to measure performance by lines of business to determine whether each business is contributing sufficiently to profits to cover the cost of capital and adding value to the firm. To measure the cost of capital, it is necessary to determine the capital required to each type of insurance. Relatively risky lines of business will require higher capital than the less risky. There are a number of capital allocation techniques that can be considered. Capital allocation must consider both asset and liability risk and allow for the covariance between assets and liabilities (Cummins 1998).

A successful risk and capital management framework can be achieved through the getting the balance right between sophistication and intelligibility, creating a collation of change to lead the transformation, changing the pay plan to drive the right behaviour, focusing organisational change to decision making in addition to roles and responsibilities and reasserting central control of selected capital management actions as capital has to be owned by the group (Schiro 2005).

2.4.14 Value of risk management

The cost of bearing risk is a crucial concept for any corporation. Most financial policy decisions, whether they concern capital structure, dividends, capital allocation, capital budgeting, or investment and hedging policies, revolve around the benefits and costs of a corporation holding risk. The costs are particularly important for the financial services firms where the origination and warehousing of risk constitutes the core value added and also because financial service firms turn their assets more frequently than non financial firms, risk pricing and re-pricing are needed more frequently. Insurers and re-insurers are an important class of financial firm. They encounter financial risk in their underwriting and reinsurance portfolios, as well as in their investment and hedge portfolios. Often insurers and reinsures have a large number of clients who view their insurance contracts as financially large and important claims. Two basic features namely customers facing contractual performance risk and insurance companies facing a negatively asymmetric distribution of outcomes make insurers and re-insurers especially sensitive to the costs of holding risk (Froot 2007).

Enterprise risk management creates value through its effects on companies at both macro level or company-wide level and at a micro or business unit level. At the macro level, enterprise risk management creates value by enabling senior management to quantify and manage the risk-return trade-off that faces the entire firm. By adopting this perspective, enterprise risk management helps the firm to maintain access to the capital markets and other resources necessary to implement its strategy and business plan. At a micro level, enterprise risk management becomes a way of life for managers and employees at all levels of the company. Though the academic literature has concentrated mainly on macro level benefits, the micro-level benefits are extremely important in practice (Nocco 2006).

Proponents of enterprise risk management argue that by integrating decision making across all risk classes, firms are able to avoid duplication of risk management expenditure by exploring natural hedges. Firms that engage in enterprise risk management should be able to better understand the aggregate risk inherent in different business activities. This should provide them with a more objective basis for resource allocation, thus improving capital efficiency and return on equity. Organisations with a wide range of investment opportunities are likely to benefit from being able to select investments based on a more accurate risk-adjusted rate that is available under traditional risk management approach. An enterprise risk management strategy aims to reduce the volatility by preventing aggregation of risks across different sources. Improving risk management disclosure can also reduce the expected costs of regulatory scrutiny and external capital (Meulbroek 2002).

Proponents of enterprise risk management argue that enterprise risk management can benefit the firm by decreasing earnings volatility, reducing capital costs, increasing capital efficiency and creating synergies between different risk management departments. Profit maximising firms should only implement a risk management system if it enables managers to maximise the value of their firms to shareholders and stakeholders. Enterprise risk management can be seen as a set of processes with two objectives, first it should eliminate downside exposures and

secondly, the development of initiatives to obtain higher returns from new opportunities (Ryu 2008).

Enterprise risk management can also increase firm value by reducing the cost of financial distress. Bartram (2002) argues that risk management reduces the volatility of cash flows, which in turn reduces the probability of financial distress and thus lowers the expected costs of financial distress, which are the sum of the probability of such a situation and the actual costs. Enterprise risk management directly mitigates and attempts to reduce the likelihood of lower tail events and is thus better able to reduce the likelihood of financial distress than traditional risk management. Enterprise risk management can lower possible taxes by reducing the volatility of earnings hence tax and also can increase the firm's ability to raise debt. Enterprise risk management can also reduce management risk and hence generate value for the firm (Ryu 2008).

In respect of insurance companies, a study was done by Hoyt, Moore and Liebenberg ("HML") (2006) to determine if there is evidence for an effect of enterprise risk management on firm value focussing on publicly traded USA insurers. The authors found a positive effect on firm value by the use of enterprise risk management (i.e. enterprise risk management adds value to the enterprise), with the premium derived from the value of risk management being statistically and economically significant at 3.6% of firm value. Moreover they argue that on average, firms with enterprise risk management are valued 6% higher than others. (Ryu 2008).

Contrary to the preceding HML study, Beasley, Pagach and Warr ("BPW") (2007), shows that there is no aggregate significant positive or negative stock price reaction to enterprise risk management adoption. Another study though has, in support of the HML study. also shown that enterprise risk management adds value (Ryu 2008).

Enterprise risk management has added value where management teams make decisions that exploit the firm's true taking capacity, complement existing risk profile and further their overall objectives. Failures have also been encountered

even where risk management exists (Enterprise risk management specialty guide 2006).

Although credit ratings are a useful device for helping a company to consider its risk appetite, management should also recognise the limitations of credit ratings as a guide to maximising the value of risk management and capital structure policy. Credit ratings are often not reliable estimates due to their reliability on accounting ratios as well as analysts' subjective judgements (Nocco 2006).

To determine an optimal risk management policy, the manager must begin by understanding how uncertainty surrounding expected future earnings and how uncertainty surrounding expected future firm value can affect the market value of the firm. That is, to assess whether and to what extent the firm should target its risk, the manager must first understand the channels through which risk management can potentially affect firm value. This understanding forms the critical underpinnings of any risk management strategy. Without it, attempts to evaluate the costs and benefits within the context of a particular firm will prove fruitless. Some of these benefits include risk management creating value in ways investors cannot duplicate themselves particularly the important non-diversified investors and better performance evaluation which leads to reduced monitoring costs (Meulbroek 2002).

2.4.15 Implementation

There are numerous ways of implementing an integrated risk management system. An integrated risk management framework emphasises connections between the three fundamental ways a company can implement its risk management objectives namely modifying the firm's operations, adjusting the firm's capital structure and employing targeted financial instruments. Integrated risk management evaluates a firm's total risk exposure, instead of partial evaluation of each risk in isolation, because it is the total risk of the firm which typically matters to the assessment of the firm's value and of its ability to fulfil its contractual obligations in the future. Thus in implementing hedging and insuring transactions, to manage the risks of the firm, one needs to only address the net

exposures instead of covering each risk separately. Integration of risk management can add value to the firm by permitting the purchase of more efficient insurance contracts that provide a lower cost way to manage its overall enterprise risk (Meulbroek 2002).

On the other hand, one study to examine the change in financial performance as a result of adopting enterprise risk management found little evidence from the sample of enterprise risk management adopters for any significant changes in various key firm variables. There was limited evidence of risk reduction in the firm's earnings of the firms that were expected to benefit from enterprise risk management. The results could have been due to data being too noisy or the tests conducted being too weak. In that case, failing to find a result did not mean that the adoption of enterprise risk management is not beneficial. Another reason could have been that an enterprise risk management takes an extended period of time to implement and reap benefits from (Pagach 2010).

The implementation of an effective and successful enterprise risk management programme will involve appreciating the importance of enterprise risk management, assessing gaps in the existing framework, setting mission and programme objectives, establishing the enterprise risk management infrastructure, assigning leadership, compiling a risk inventory, selecting assessment techniques and defining risk appetite and risk tolerance, determining risk response strategies, developing effective internal communication and reporting protocols, monitoring risk management and execution, choosing compensation policies and performance metrics to promote and tracking the pursuit of risk adjusted corporate strategy and integrating risk management with existing operation systems (i.e. information technology, accounting, budgeting, planning, internal control, regulatory compliance etc) (Tonello 2007).

2.5. Conclusion of Literature Review

The conclusion drawn from the literature review is that an effective risk management framework for an insurance company will comprise of strategic, governance, operational and economic components. Each of these components is elaborated further in the sections below.

The strategic components relate to a risk vision, objectives, strategy, appetite, tolerance, linkage with business strategy and an integration of risk and capital management.

The governance components relate to a risk policy, governance framework and the integration of compliance, governance and risk functions.

The operational components relate to organisational design, roles and responsibilities, culture, process, models, data, methodologies and the actual implementation of all the facets of the risk management framework.

The economic components will include the cost and benefit analysis and performance measurement.

The literature review reveals that there are significant considerations that insurance companies will need to consider when implementing each of these company. The degree of complexity will also vary according to the nature of the company. The construction of a risk management framework follows very much one of the strategy tools namely VMOST (vision, mission, objectives, strategy and tactical). This logic pertains to the need to ensure that the thinking is set appropriately at the top and filters down from the strategic and operational considerations.

2.5.1 Research problem

The conclusion from the literature review is the components of an effective risk management framework for an insurance company are as given below:

Strategic

Risk management risk management vision, risk management objectives, risk strategy, risk tolerance, risk appetite, embedding risk strategy into business strategy and integration of risk management and capital management.

Governance

Risk management policy, governance framework, integration of governance, risk management and compliance.

Operational

Organisation of risk management, roles and responsibilities, risk management culture, risk management processes, risk management models, data and methodology, implementation of risk management.

Economic

Cost and benefit analysis of risk management and performance measurement.

CHAPTER 3: RESEARCH METHODOLOGY

This section covers the research methodology, research design, population and sample, research instrument, procedure for data collection, data analysis and interpretation, limitations of study and the validity and reliability of the finds of this research.

3.1 Research methodology /paradigm

The proposed research on the subject of an effective risk management framework for an insurance company lends itself to the qualitative methodology rather than the quantitative methods or mixed methods respectively. According to Leedy and Omrod (2005) the general characteristics of a qualitative as opposed to a quantitative research are that:

- The key purpose of a qualitative research is to draw information and obtain knowledge about a particular situation, and then develop some possible explanations and theories based on the observations and the information gathered. Quantitative research on the other hand is intended to provide some explanation to particular relationships, theories and / or situations

- The research process in qualitative research is flexible and adaptable as it recognises the need to learn and understand from the circumstances of the situation as they unfold during the research. Quantitative research is more structured and sticks to a pre-defined basis for undertaking the research, to ensure objectivity

- Data collection for qualitative research is in the form of verbal, images and text and less value is placed on the format and structure of collecting data. Quantitative data gathering is more stringent and follows minimum set standard to ensure validity and reliability. Sample size for quantitative data normally small, whereas quantitative data sample normally has to meet minimum size and sampling methods criteria

- Qualitative report findings are interpretations of the observations and experiences drawn from the research and providing the researcher's proposition and perspective. Quantitative finding would normally be statistical based and absolute in nature, with little or no room for individual views

The main objective of this research is to determine an effective risk management framework for an insurance company based on a broad range of literature from a range of global industry bodies, rating agencies, professional services firms, principles emerging from the Solvency II (Europe) and Solvency Assessment and Management (South Africa) regulations, other relevant literature on risk management frameworks. The views of risk, actuarial, finance, accounting, compliance, executives and board members will also be obtained on the outcomes of the literature review and will be considered in determining the recommended risk management framework for an insurance company.

There are a number of research papers on risk management in insurance companies, and these papers have been written at different points in time. The writer is not aware of any paper that encompasses the comprehensive set of requirements underlying risk management for insurers that looks at all the different governance frameworks, latest EIOPA papers and latest commentaries from the different market participants e.g. rating agencies. The research therefore has to be of a qualitative nature. With the emerging regulations still subject to further refinement, the body of study is still open.

The proposed qualitative research has allowed for a deeper understanding of the broad risk management frameworks and integrates these to form a view as to what would constitute an appropriate effective risk management framework for an insurance company. The proposed qualitative research approach will be structured and a questionnaire will be designed to act as a guide and will be open to changes and adaptation as the research is undertaken, but the main research objective will remain unchanged.

3.2 Research Design

The research design shall be by way of a survey conducted on a selected group of professionals that are aware of the developments of the Solvency II and SAM regulations and risk management in general.

The mechanics of the survey shall be first to submit a questionnaire to the identified individuals, seeking specific responses to pre-defined questions on the risk management framework of an insurance company. The questionnaire will be accompanied by a letter requesting responses by a particular date. The types of questions shall be closed questions, requesting specific information. Follow up interviews will only be arranged if these are deemed necessary based on the outcomes, otherwise the researcher will analyse the responses to the closed questions.

3.3 Population and sample

3.3.1 Population

The population for the research includes the insurance industry, the regulatory bodies or compliance professionals with an understanding of the regulations, the rating agencies and consulting and advisory professionals who are skilled and experienced on risk and capital management matters and the emerging regulations.

3.3.2 Sample and sampling method

The sample of interviewed people will include a number of respondents from the insurance, consulting, rating agencies industries. In particular, the interviewees will be from the following entities:

- Insurance companies affected by either the emerging Solvency II regulations in Europe or the Solvency Assessment and Management regulations in South African. The individuals to be consulted will however

provide views in their personal capacity and will not represent the views of the company. This qualification is important as the information relating to risk management is proprietary and hence companies will not want to disclose their intellectual property for competitive reasons

- Consulting firms in the form KPMG, Ernst & Young, PwC, Deloitte, Mazaars and OliverWyman. The South Africa and England based offices of these firms will be consulted where appropriate. These companies have been chosen as they are the thought leaders in the risk management industry, developing risk management frameworks for insurance companies and also being responsible for the auditing and providing consulting advice on risk management frameworks

- Rating agencies in the form Standard & Poor's (Englan), Fitch (England) and Credit Suisse (South Africa). These rating agencies have been chosen by virtue of their significant role in providing leading opinions on matters relating to the rating of insurance companies

- Regulators. To the extent that the regulators will not have any conflicts of interest in being tasked to respond to a set of questions, the regulators will also be consulted. However, whether the regulators will not be able to respond, the research will be limited to entities summarised above for they provide. Where the regulators are not able to respond, the research will ensure that individuals with a Compliance background are interviewed as these professionals will have a good understanding of the regulations and their implications on risk management for insurance companies.

The research will aim to obtain views from approximately twenty five to thirty different individuals from the entities covered in the section above. These individuals will be of different professional backgrounds, experience and practice to ensure that there is an appropriate balance and holistic review that is obtained. The respondents will also be based in South Africa and England given the regulations referenced in this research are affecting these two countries respectively.

The list of potential respondents covers the professional categories covered in the table below. The number of targeted respondents in each category is also provided in the table below.

Table 1: Profile of respondents

Description of respondent type, e.g. Manager, Union representative, student	Number to be sampled
Partners or Directors at Advisory Consulting firms in England	6
Directors or Rating Analysts at Rating Agencies in England	2
Chief Risk Officers at insurance companies in England	1
Compliance Officers at an insurance company in England	3
Board of Directors at an insurance company in England	1
Regulators based in England	1
Partners or Directors at Advisory Consulting firms in South Africa	5
Chief Risk Officers of insurance companies in South Africa	3
Compliance Officer at an insurance company in South Africa	1
Board of Directors at insurance companies in South Africa	3
Regulators based in South Africa	1
Chief Executive Officer based in South Africa	1
Chief Financial Officer based in South Africa	1
Rating agency professional based in South Africa	1

3.4 The research instrument

The research instrument to be used will be a questionnaire, mostly with closed questions. Where the responses received from the survey warrant a follow up, then interviews will be arranged, otherwise the responses to the survey will be deemed sufficient given the questions are extensive. A copy of the research questionnaire that was used for the survey is provided in Appendix 1. The research questionnaire has been prepared based on the outcome of the literature review.

The rationale behind the closed questions is to extract detailed specific information. Further information will only be obtained by interviews if necessary. The interviews (if conducted), will be based on open ended enquiry, mainly arising from after the responses to the research questionnaire.

This sequential approach (research questionnaire followed by interviews (if conducted)) to research is apparently more common in mixed method research, where qualitative approach to data gathering is followed by a quantitative procedure based on the qualitative data gathered, or the other way round (Creswell 2003). However, given the detailed form of the questions prepared for the research, interviews would not be considered necessary unless the responses suggest otherwise.

3.5 Procedure for data collection

The research questionnaire will be sent out to each respondent and the responses will be requested to be in writing, utilising email. A copy of each response will be made available to the business school. Any information that can be obtained from other public sources that may be of importance shall be recorded accordingly.

The subsequent interviews (if any are conducted) shall be based on open ended questions against which notes of responses shall be made. A confirmation of each interview will be requested from the respondent in writing, by email, to provide

proof that the recorded interview is accurate. Any information obtained from publicly available documents will be acknowledged accordingly.

3.6 Data analysis and interpretation

The analysis and interpretation of data shall be descriptive in nature, based on the questionnaire responses, additional material gathered, interviews and observations undertaken. In view of potential volume, complexity and varied nature of data to be gathered, a systematic approach in organising, analysing and interpreting the data shall be followed as recommended by Creswell (2003), and in this particular research should involve the following sequence:

- Transcribe interview and observation data and organise all the data (including questionnaire responses and other company material) in a form that enables overall assessment
- Read all the data to identify key traits and to develop a general perspective of the professionals on the subject matter
- Begin in depth analysis and build up main themes that characterise the risk management framework for an insurance company based on the data gathered
- Contrast the company analyses to the literature review findings to come up with a description and interpretation of possible key factors that may explain variations and / or areas of possible improvements and / or areas of commendable strength
- Build up a generic proposed risk management framework fro an insurance company.

3.7 Limitations of the study

The main limitations on the interpretation of findings primarily relate to the following points:

- The research paradigm is qualitative, hence open to various possible interpretation based on different orientations and perspectives. There are no stringent procedures to minimise the possible inherent bias and preconceptions by the researcher, as would be the case in a quantitative study

- The data collection process is mainly dependent on the cooperation of the professionals to be interviewed and in them offering honest, factual and objective feedback given the need to preserve proprietary information. The conscious and unconscious bias of the surveyed respondents may also distort the data. In addition some important details may be lost during transcribing and interpretation of the data, as this largely at the discretion of the researcher, who again will naturally have some subjective learnings

- The interviewees are broadly from the same or similar professional background and training and this will introduce bias in their responses. Furthermore, the interviewees may be reading from the same or similar documents and this could also bias their feedback

3.8 Validity and reliability

3.8.1 External validity

External validity is the degree to which the findings of a research can be related to situations outside of the sample or case being researched (Leedy and Ormrod 2005).

Given that the respondents are professionals of considerable experience, skill and qualifications and have broader industry knowledge, the findings of the research can be related to situations outside the sample with a high degree of confidence. Furthermore, extensive literature review has been conducted and any deviations from the convergence in literature will be carefully scrutinised and analysed.

3.8.2 Internal validity

Internal validity is a test on whether the research design adopted will lead to credible and accurate findings based on justifiable relationships of the data collected (Leedy and Ormrod 2005).

The research question has been formulated based on the outcome of the literature review. Additional insights will be obtained from the responses to the research questionnaire. If need be, additional interviews will be carried out with the respondents to obtain further insights. The outcomes of both the literature review and the research questionnaire will be analysed in a systematic manner. This process will enable the internal validity of the proposed research findings.

3.8.3 Reliability

Reliability is a check on whether the research instrument/s used would consistently post similar results if conditions and circumstances under which the research takes place do not change (Leedy and Ormrod 2005).

The research instrument will be a questionnaire which is followed by interviews if necessary will provide the researcher with some opportunity to check the data reliability and integrity. Given that the sample of respondents comprises of individuals of considerable experience, skill and qualifications with a significant technical and practical knowledge of the research area, the data will be reliability and have integrity. The data is drawn mostly from individuals' views at a particular point in time, and it is quite possible that the output may vary at different periods of time especially as the individuals acquire more experience on risk management practices.

CHAPTER 4: PRESENTATION OF RESULTS

4.1 Introduction

This section presents a combination of the views of the researcher as well as the results of the findings from the respondents to the research questionnaire on developing an effective risk management framework for an insurance company. The respondents provided further detailed insights into the practical considerations that should be taken into account when implementing the risk management framework for an insurance company. These responses are compared and contrasted with the literature review were relevant. The demographic profile of the respondents is presented in Chapter 5 of this research report. This chapter presents a summary the components of a risk management framework for an insurance company namely the strategic (risk vision, objectives, strategy, appetite, tolerance limits, business strategy and risk and capital management integration), governance (policy, governance framework), operational (organisation, culture, processes and inputs) and economic (cost and benefits analysis, value of risk management and performance measurement).

The results are presented in detailed form and also provide contrasting and comparisons with the literature review as appropriate. This section therefore elaborates on the framework drawn from the literature review.

4.2 Results pertaining to the research problem

This section summarises the responses that were received from the survey in respect of the research questionnaire and includes the views of the researcher based on the literature review. The views expressed in this section are a combination of the outcomes of the research survey and the views of the researcher. These combined views are compared and contrasted with the outcomes of the literature review.

The respondents to the research survey shared their views on each of the components of the risk management framework as identified in the literature review. in doing so, the respondents provided some practical insights to be considered when implementing the risk management framework. These practical insights provided an awareness of the main issues that a company has to consider when implementing a risk management framework.

4.2.1 Strategic

Vision

A vision is very high-level aspirational statement in that it describes the “why” of the business. As with any major activity it is important to know the destination before embarking on a journey. This allows for transparency / clarity with all stakeholders otherwise it is difficult to have a clear view of the risk and reward trade offs the company needs to make. In addition, the articulation of a vision for risk is likely to be attractive to shareholders as it gives investors a clear idea of the type and extent of activities that a company will be willing to undertake and more importantly the kind of activities that a company will not be willing to engage in.

A company should clearly articulate its vision for risk and such vision needs to be linked with the overall vision for the company and this should be done before embarking on business activities that have risk implication whether in the form of taking risk, and/or the management of risk of a company. The reality is that every decision/transaction has a risk/return signature associated with it. This implies that a corporate should embed this vision in its risk strategy, and make sure that it links seamlessly to normal operations.

The vision for risk cannot therefore be taken in isolation. Risk vision should be considered as part of the development of the business vision and objectives. This enables the insurer to manage those risks of not achieving their business objectives. Risk strategy should dovetail with overall vision of the company and the capital requirements and, as such, should therefore not be considered as something in isolation. The implications for the capital requirements of the

company at specific levels of risk need to be understood. Once the company is clear on its overall vision and strategies and capital limitations, it can articulate its risk strategy.

The risk vision should be part of a wider risk strategy and should be closely aligned to the overall business strategy and business planning process. As part of the annual planning process, considerations in respect of risk (through the economic cycle) should be considered. The advantage of this is that risk and reward considerations are closely aligned to the writing of business. The disadvantage is that a balance needs to be struck as sometimes business decisions are taken too narrowly and too short term if risk is the only consideration.

The process of developing the management of risk will be iterative and develops with the company's maturity in approach to risk. Companies should consider having the risk vision sooner rather than later.

Experience indicates that leading companies apply this principle. Risk vision statements usually set the tone for commitment to risk management. Formulating vision statements should consider the risk appetite of the board and shareholders, solvency constraints and regulatory requirements.

Execution of the business vision will determine an organisation's risk profile and therefore both the business vision and the risk vision should be set taking into account the other. It is almost easier thinking about a situation where the above is not applied. Under such a scenario a business will execute its business strategy in isolation of its risk vision which should represent its skills and preference for risk. This scenario will result in a risk position that could well be outside of the appetite and skills set of the business resulting in a forced changed in business plans and activities, or worse.

A pragmatic view needs to be taken in the absence of such a clear and concise risk and business strategy. Even though a company might not have a clear risk strategy linked to the business strategy that does not preclude a company from managing risk. The principle of managing risk must be looked at as a daily, routine

business fundamental and not only from an Enterprise Risk Management (ERM) perspective. Risk governs every decision and must always be considered in order to make informed decisions.

There are arguments that defining vision in the context above can be considered as seeing the vision in the context of culture. An alternative would be to see a risk vision as being the risk appetite comprising at least three elements namely risk preferences (statements of what risks the company wants more of or less of) risk tolerances (objective statements of maximum tolerable loss, such as “We do not want to lose any more than 10% of our capital in a one year period, at a confidence level of 99.5%); and risk limits (objective statements of maximum exposure, such as, “We do not want to have more than 5% of our invested assets in below investment grade instruments.”). The limits and tolerances need to be linked, typically by quantitative models in the insurance industry. Such a vision/appetite is viewed as fundamental to a strong enterprise risk management framework.

Although defining the vision is a good approach in theory, it is not easy to do in practice. The business vision can be expressed in hard descriptors of product lines, markets, the company’s value proposition, etc. The risk vision will be more difficult to define and will probably be a broad statement such as “we will be risk averse and avoid / mitigate risk wherever possible” or “we will seek risk taking opportunities where we believe we have an expertise that will enable us to differentiate ourselves through superior risk management”. Some doubt that a vision for risk makes sense, but the risk philosophy or strategy could perhaps be derived from the company’s Vision statement. Risk should rather be incorporated at the next level in a company’s formulation of strategy, maybe as part of the Mission or as a Strategic Objective.

A view from one of the respondents was that ideally there should not be a separate risk vision, but rather that the single company vision suggests reference to, or aligns to, risk management / understanding. In practice companies usually have a form of an overall operating vision and it is best to start with that and gradually determine what this means in risk terms. This will be an iterative process

and that helps to produce a common language to describe/understand risk before creating the overall risk vision. So for example in relation to the biggest risks an insurer faces (whether it be market risk through the products in a life insurer or underwriting risk in a general insurer), they have for years had processes/activities at a detail level to understand that risk. What has often been missing is the interaction with other risks. This leads to the real benefit of having an overall risk vision being in setting out clearly the relative balance between different types of risk (e.g. Lloyd's underwriters know and understand underwriting risk but tend to want to be cautious in investment risks as that is not their core area of expertise).

Furthermore, it is not practical to define the risk vision before embarking on any business activity. Whilst this could be relatively easily achieved for start-up companies as they have not yet operated, it will be a challenge for established companies who may have had many years of operation without actually having specified a risk vision. For these established companies, the alignment of risk and business vision has not been done and hence it could prove challenging.

Unless a risk vision is clearly articulated, companies could easily end up with either excessive risk taking or avoidance of risk and surprises will be inevitable. Mis-pricing of risks can also lead to lost opportunities or ultimately material loss. This can be a recipe for failure.

The risk vision will also need to clearly articulate the responsibilities of the various parties in managing risks, especially the roles of the three lines of defence (first line of defence being line management / the business, second line of defence being the oversight functions and third line of defence being audit and the board of directors) otherwise basic risk management can be and usually is undertaken without having an overall risk vision. Companies should also avoid having strategy and plans that are written with risk being considered as 'simply' critique and produce a list of risks but rather risk should be an enabler for the business to achieve its strategic objectives.

A vision for risk management is critical for the management to be able to articulate (at a high principle level) their aggregated aspiration for their organisation. The

difficulties of this approach are agreeing a vision based on the common understanding of risk, and high level risk appetites for what management/Boards want to undertake for their business – based on commercial and regulatory constraints.

In an insurance company, especially under the new regulations, the determination of a risk vision is vital for the Own Risk and Solvency Assessment (ORSA), and could be considered as the starting point of the ORSA. There are many pros, and the only cons lie in the execution of the above (ie it inhibits the creation of value).

Objectives

The outcome of determining risk vision should include the articulation of a number of objectives that would determine a successful risk vision – i.e. maintain/obtain a particular risk rating, to enter into profitable business based upon the measure of risk assumed by that business. A vision is just a statement and until the risk vision is translated into specific objectives it may not have much influence on the company's actual approach to risk management. Similar to vision, it is difficult to be too elaborate at the objectives level – the detail is more appropriate at the appetite / tolerance level.

The objectives need to be very clear, "SMART" (Specific, Measurable, Attainable, Realistic and Timely) and one should "KISS" (Keep It Straight-forward and Simple) principle. The objectives should also be articulated at a business unit and individual level and preferably included in the individual risk score cards of individuals with independent assessment before annual variable pay is calculated. The setting of objectives can lead to significant value creation as the delivery of the objectives would result in the achievement of the risk vision.

The company should be as specific as possible with its risk objectives, and this may translate into targets such as thresholds for losses of different classes, limits for Key Risk Indicators (KRIs) and Key Performance Indicators (KPIs), thresholds for solvency, variance limits for operating earnings (e.g. claims ratio's) and Earnings at Risk, Cashflow at Risk, Operational Risk and other risk metrics that can be considered as appropriate to the company.

Companies should create basic, yet fundamental risk objectives otherwise one might find that more time is spent on theorising about objectives and not actually doing the fundamental exercise of managing risk. The right balance needs to be achieved.

The translation of a risk vision into risk objectives will enable the successful implementation or execution of the vision. The extent of elaboration will depend on the nature of the objectives. The objectives can be categorised or prioritised in accordance with the impact and focus on the key risk. One needs to avoid the possibility of the formulation and quantification of risk strategies resulting in a "box ticking" exercise. Embedding risk awareness is critical to a mature risk culture. Risk and risk appetite should be directly linked to these strategic risk objectives so that the opportunity cost of failure to deal with risk can be clearly linked to strategy.

Translating the vision into risk objectives is just one part of the bigger puzzle. There is a big caveat in that the risk vision, objectives etc should be aligned and be 100% consistent with other sources of objectives and limits such as those flowing from the risk appetite. If this is not done business will "reject" these risk objectives on the grounds of "just being another layer of policy / objectives". One of the big challenges faced by risk management is the lack of practicality and one needs to bear this in mind when considering setting risk objectives.

The risk objectives should be measurable in both qualitative and/or quantitative terms. To support these risk objectives, risk strategies need to be defined and then systems to capture and measure specific risks must be put in place. The value of setting the risk objectives should be realised in at least clarifying the purpose and objectives of risk management processes, connecting risk management to daily business decisions and connecting business performance to solvency requirements.

The formulation of a high-level strategic statement for risk is useful, because strategic planning should primarily be the identification of strategic opportunities to be exploited or existing strategic positions to be defended. Risk objectives should

not exist separately from the risk strategy and as such, each strategic objective could state specifically what level of risk could be tolerated within the execution of that strategy.

Companies should be elaborate in translating business and operational strategy into risk objectives. Boards must not have objectives that are too granular. They need to be sufficiently high level to ensure that the management and staff easily understand the aspirations of the Board in managing/assessing risk. The risk objectives need to be understood by a very wide spectrum across the company (different levels and operational levels). The risk objectives should mean something to employees' every day roles and allow them to easily see how their decisions contribute to meeting the firm's objectives. How each function can help to maximise (or minimise) the risk to the firm's ability of meeting the business objectives should be appreciated by all and be central to what they do.

Modern, post-credit-crisis companies cannot afford to be mediocre in setting their risk objectives. The risk objectives, framed through the risk vision, should direct the company course, not vice versa. In this regard, the more elaborate and sophisticated the risk vision, the better.

A process that is not elaborate runs the risk of not properly identifying risks involved in a company's operations. In addition, risk objectives that are not elaborately set, combined with inappropriate management incentives, could result in management exploiting any available loopholes.

It is not productive to get too hung up on the precise mechanics of how to do this. In many companies, cascading the risk vision into specific "tolerances" and "things you must / must not do" in the form of risk policies tends to be very helpful. However, the trick is not in the words of the policies themselves but in the understanding gained from the debates during the development and embedding of such policies to get to the essence of the key objectives. One approach that has been found to be helpful has been to look at each risk area in terms not just of the "output" vision (eg we want no more than x% of economic capital due to market risk) but to break the risk down into practical examples of how it arises in

the context of that company's business, which can then prompt consideration of how to translate this into a framework to influence people's behaviours (i.e. the "inputs" to the vision).

The value of the translation is critical because 'objectives for risk' provide the Board, management and the business with a set of targets to build on the risk management framework and monitor risk on an on-going basis.

Risk Strategy

The organisational vision should translate into a risk strategy that incorporates risk objectives. This should set the direction for the risk management framework and environment (culture) in the organisation. In the absence of a risk strategy, the danger is that management are still unable to deal with risk situations as they arise even though they may have a risk vision and objectives.

The risk strategy is important as it will support the business strategy of the insurer. The value for the insurer will be that the business and risk strategies are aligned. The risk strategy starts to be the level at which a company can be more specific about its approach to risk management e.g. in identifying ways to avoid or limit risk, or in recruiting or developing underwriting skills that will enable it take on risks that other companies cannot.

It is very important to produce a risk strategy at a high-level so that the management of risk is at all times associated with the achievement of strategic objectives. The value that this will bring is primarily that it positions risk closely to opportunity, or at least the opportunity cost, and so it will thus be more likely that management see the benefit of appropriate risk management and therefore allocate sufficient resources to risk management.

The risk strategy should be an easy to absorb document that consolidates the overall preference for risk based on available skills, risk return preferences and capital consumption. The risk strategy should be limited to only a few articulated statements (maximum of 5 and should be no more than about three pages long), otherwise it will not be readily understandable/remembered (internally or

externally). The risk strategy should be aimed at the internal and not external audience. The risk strategy should not take too much effort and be too complicated. The value here is that it creates focussed thinking around the advancement of the risk function, and inevitably results in the closer integration of risk management into daily operations.

In the current (2011) uncertain world, the choice of whether to recognise and manage risks, or ignore them, dictates the impact these choices have on the relevant company. As such, the value of a clearly thought out risk strategy that has been deeply integrated into the corporate culture cannot be underestimated. This is essential as it drives the right culture, behaviours and puts everyone (front and back office) on the same page.

The value of having a risk strategy will be evidenced in having no surprises, effective mitigation of risks thus leading to increase policyholder and shareholder value, appropriate pricing, empowering employees to make risk-based decisions, managing capital requirements, useful as a communication tool with senior management and non executive directives to give the overall picture and show how the different elements of risk fit together and prompting useful debates on the financial risk metrics such as levels of reinsurance protection.

The company needs to ensure that the determination of a risk strategy is not about simply creating statements to keep the regulators happy but rather aims to add real value to the practical operations of the business.

Past experience suggests that risk strategies are often vague and ill-defined.

Ownership and the review cycle are particularly important. The risk strategy should be articulated first before the risk vision and objectives are set and should be closely aligned to the overall business strategy. The risk vision and objectives are elements of the risk strategy and components that support its delivery. Under the emerging Solvency II and SAM regulations, the risk strategy should in effect be referred to as the risk and capital management strategy, as these two go hand in hand in the new world. The “less is more” approach becomes important when conducting reviews, in that as years pass by the original long risk strategy

document becomes refreshed with much shorter annual updates focussing on the overall balance of risk and risk appetite.

Risk Appetite

A risk appetite statement should be developed in order to assist the achievement of strategic business objectives. The production of a risk appetite statement is one of the most difficult things to do in risk management, but can potentially add the most value. The value lies in being able to establish a bench-mark against which any potential risk for the business can be evaluated against a common outcome. The risk appetite can be formulated in terms of money, brand, clients or strategic objectives. The risk appetite statement, if formulated correctly, is the 'glue' that connects the business objectives and risk objectives of a company.

The risk appetite needs to be measurable and should be developed in the context of the insurer's risk management capacity and maturity and should be embedded in all levels of the company. It is very important since it provides the framework and parameters to guide decisions about how the business should be managed and grow.

The risk appetite statement sets out a company's current views on appetite for risk and is therefore the reference document of what the company's overall view of risk means in practice for business decision-making e.g. a company will not take on financial lines business on the short term side, or annuity business on the life side. It might not be easy to start with the vision / objectives / strategy, but every company should be able to document what risks it will and will not take on and why i.e. how risk management is applied in practice.

The risk appetite must be articulated at the right level, typically two or three pages of clear statement of the types of risk the company would like to increase and those it would like to decrease e.g. "we have appetite for mortality risk, but want to decrease our appetite for credit risk". As part of the risk appetite statement, hard and soft risk tolerance levels or limits should be set to serve as early warning signals for when the risk appetite limit is close to being breached.

The risk appetite statement should be defined out of the risk strategy, clearly defining wanted and unwanted risk. The risk appetite statement must be measurable and realistic, whilst being common across the organisation. Each operational part of the organisation should have separate risk appetite measures (usually one ought to be a liquidity measure and another a risk-based measure in aggregate and operational risk separately). The operational unit risk appetite should in aggregate reflect the organisation as a whole.

The risk appetite statement can then be used to ensure that deliverables are formulated for the risk strategy that then reduce potential risk within the specific parameters set out in the risk statement.

Effective risk management frameworks provide many tangible deliverables including continuity of knowledge and information management processes, improved compliance and – most importantly – improved customer service delivery. By following – religiously – the spirit of the risk vision, these benefits can be adequately recognised.

Risk appetite is one of the most critical elements to embed. The only way to give life and deliver value through risk strategy is to ensure it is embedded in operations, i.e. it has to have the impact of influencing and driving decision making in the business. Quarterly measurement and reporting against risk appetite limits will deliver some value but this value is limited if the process is limited to measurement and reporting. It has to be embedded through developing a limit allocation framework such that the “group” or business wide statements can be allocated and effectively turned to life within a potentially diverse range of businesses / group entities. To do so the business / entity level statements have to be set taking into account the business plans for each business / entity which in turns aligns with the key risk drivers impacted by the execution of the business plan. Once the overall limits have been translated into limits at say business / entity level these have to measured as often as appropriately required (some could be daily, others semi-annually) and management actions have to be agreed that are linked to these limits. Measurement and reporting combined with management actions will deliver the intended benefits.

The following, for example, should be done to translate risk appetite into tangibles:

- Agree and calculate a desired credit rating under normal conditions and under defined adverse or loss conditions;
- Agree and calculate solvency capital under normal conditions and under defined adverse or loss conditions;
- Set tolerance limits for risk categories, based on their potential impact on the above;
- Set tolerance limits for specific risks based on their potential impact on credit rating and solvency.

Risk appetite is not a well understood principle but it is certainly important. It needs to be simple to ensure that the fundamental task of managing risk occurs as soon as possible and not after lengthy periods of time just to compute a number. To ensure that risk appetite translates into business value the approach that can considered includes focussing engagement with the board on this, formulating of an actionable group level statement, assisting business units to translate the business unit risk appetite in a consistent and tangible fashion, ensuring the control cycle around this is complete and creating the ability to report on actual versus target risk profile.

Risk appetite statement enables delivery of the risk strategy. Delivery will be driven by consistency and appropriateness of the metrics used, rincluding risk appetite requirements in the risk policy suite, cascading the the risk appetite metrics into homogeneous product groups, communication and understanding on the metrics, aligning reward systems, aggregating and reporting on aggregated figures in a tight time frame thus support the objective of optimising diversification benefits and having in place a system to identify, monitor and measure risks and identify risk mitigating actions.

This is critical since, increasingly, employees seek clarity on risk principles to apply in ongoing decision making. Also, since this forms the guiding criteria to measure decisions, it is impossible to execute and integrated company strategy without measurement criteria.

The development of the risk appetite is an iterative process and the first step before being able to set quantitative limits is that there needs to be a risk measurement system which is consistently understood across the organisation. This is where the advances in economic capital and the regulators moves to using these economic measures rather than the historic non risk sensitive measures have been helpful.

A lot of wasted energy can go into the theory of getting risk tolerances all neatly "added up" to an overall risk appetite statement such as "we want to aim for an A rating" or "we want to be able to demonstrate dividend growth to 1 in 20 year confidence". The company needs is to make sure the risk tolerances are not inconsistent with the risk appetite as an expectation of having to do a mathematical reconciliation is futile and unnecessary.

Although a risk appetite is essential, it must be noted that driving this down into the organisation is a difficult and complicated process. It is critical that a risk appetite can be cascaded down the organisation, in order to fully embed a risk culture. The further down and wider the appetite is cascaded, the less likely it is to be purely defined quantitatively. Qualitative definitions are therefore a key part of the cascading.

Risk Tolerance

Risk tolerance defines the specific risks can be tolerated in order to meet the business objectives. Risk tolerance provides more objectivity towards risk management and very importantly avoids paralysing the business from taking any risk.

Risk tolerance is the maximum or absolute risk an insurer can deal with. Risk tolerances can be defined both in quantitative and qualitative means once the risk appetite statement has been defined. Non-compliance with laws and regulations should be a risk that the insurer will not tolerate. Measurable tolerance limits are enhancing the implementation of risk management and objectivity.

Quantitative tolerance levels provide an objective and realistic assessment of how the risk appetite is being implemented and provide a mechanism for alerting management if the company is being too conservative in relation to risk appetite and thus needing to take on more risk to move within the risk tolerance band. Reducing the measurement of risk to quantitative measures only is impractical. Some risks simply cannot be quantified and predictive models do just that. They rely on extrapolation of past trends and in the dynamic environment we find ourselves, these past trends can be misleading predictors of the future. Common sense and business experience are crucial in interpretation and in the application of risk management.

The tolerance limits set the visible margins at which risks will be accepted and where changes in risk approach need to be challenged. For example, the maximum gross exposure to be taken per risk category gives a hard figure that would be subject to regular review e.g. at annual reinsurance programme renewal. Some risks cannot have quantitative tolerance limits and therefore qualitative limits should be set. Specifically on operational risk, quantitative limits such as number of incidents can be set but in addition qualitative tolerance such as the need for management to review and report on the quality of their risk environments should be required.

Risk tolerance limits, otherwise known as risk limits, are necessary to allow management to identify and measure against clear boundaries of risk. These should be clearly identified at a more granular level than the approved risk appetite. There are a number of different risk categories (e.g. strategic and reputational risks, financial risks, operational risks) defined by the organisation. Some of these risk categories e.g. financial risks can be quantified and others e.g. strategic and reputational risks are qualitative. Risk tolerancelimits are required to be articulated for the quantitative and qualitative risks. The company will need quantitative triggers as these are easy to interpret. However, as insurance business, especially for large groups, is very dynamic there needs to be plenty of flexibility but with sufficient ‘backstops’ built in to deal with shock and rapidly developing events. Some items will, by definition, require more qualitative

tolerances – especially those where the firm has ‘zero tolerance’ (e.g. internal fraud) but cannot sensibly place a zero limit as that would require a massively disproportionate investment in controls. A company does not want to have a quantitative limit though as that sends the wrong message / tone. A qualitative approach is more appropriate in these instances.

The risk tolerance levels embedded in the risk framework can provide more risk management objectivity by incorporating "feedback loops" based on appropriate and good quality information, management processes and objective assessments. The feedback loops can help enable the company to take objective, necessary action in response to changes in its risk profile.

It is important is that users of information understand the numbers; where they come from, what they mean in practice and what their limitations are. Lessons from the banking crisis have taught us that directors often misunderstood the shortcomings of say Value at Risk (VaR) analysis and saw a coverage of a 1 in 200 event as being fully covered. They did not understand that events with a huge impact but lower frequency can happen and that they needed to be prepared to deal with them (the so called Black Swan events). They also did not understand that actual shortcomings of the VaR analysis itself and to what extent this useful measure becomes less “predictive” under extreme events where tail or extreme events are at play.

Although the quantitative limits are very useful and potentially easy to measure one needs to be careful not to stare at numbers without understanding them properly. Qualitative limits can therefore also add value to the process. For example, a company could simply have a risk appetite statement that states that the company wants to have a solvency ratio of 175% and that in the worst case scenario over a 25 year period, the solvency ratio should not fall below 100%. This will provide some guidance and direction as to how the risks will need to be managed and monitored. This is particularly important as under the emerging Solvency II regulations, the Solvency Capital Requirement is very volatile. Under these regulations, a company that has a solvency ratio of 100% can easily go under after an adverse market move or experience.

Risk tolerance can be considered as merely adding another layer of unnecessary complication and that one should not worry excessively about it. Setting limits is of no value unless the culture empowers and rewards all employees to escalate risk events – there should be no penalties or fear. In addition there must be clear delegation of roles and responsibilities from the Board of all risks to be managed. This is essential and allows the inclusion in remuneration scorecards.

Business strategy

The respondents to the study were not conclusive view as to which comes first between a risk strategy or a business strategy. Three views were observed, namely, business strategy comes first, risk strategy comes first and that neither business strategy nor risk strategy comes first but rather that the two should be developed together.

Most respondents though argued that a business strategy comes first followed by a risk strategy. There has been recognition though that both the business strategy and risk strategy are important and should refer to each other. These three schools of thought are discussed below.

Business strategy comes before risk strategy

Once a business strategy has been determined, risk strategy comes next when determining what capital is required to execute that business strategy. Capital requirements are the most obvious way to link risk strategy and business strategy. The process of determining business and risk strategy could also be iterative. For example, when starting a business the business strategy comes first. Thereafter the risks and costs applicable can be evaluated. This may require an adaptation of the business strategy or an acceptance of a greater (or lesser) tolerance of risk. Developing a risk strategy should be part of the development of a business strategy. The business strategy should clearly articulate the risks associated with the strategy and how it will be managed.

The business strategy will come first because this easier to articulate. The risk strategy should follow and be consistent with this strategy e.g. it is not possible for

a business strategy to specify an aim of moving into new fields or markets if the risk strategy does not support this through an aim of identifying and managing new risks. The risk and business strategy can be linked by starting with a review of business strategy - any new or changed business strategy should be tested in terms of what is means for the company's approach to risk with appropriate changes than made to risk strategy. If any of these changes are deemed inappropriate then the business strategy should be challenged until alignment can be reached.

Risk strategy comes before business strategy

Theoretically the "risk" element should come first and shape the business strategy. The reality is very few companies change their long term strategy that often and usually have an overarching strategy or vision e.g. the company operates in the retail, pensions, protection and investment business but not in high risk reinsurance business. This strategy or vision then feeds a high level risk strategy which is possibly a broad pattern of risk over say a 3-5 year horizon. The risk strategy in turn feeds the annual business strategy and planning process which is typically on a 1-3 year horizon.

Under this consideration, there was a view that what is referred to as "business" is actually "risk". Instead of saying "what business do you want to be in", one could say "what risks do you want to take".

Neither business strategy nor risk strategy comes first

Neither the risk strategy nor business strategy is first, as they both need to be assessed in conjunction with one another as they are dependent on each other. They are derived together. The reason is that the risk strategy formulation has implications for, and provides input to, the business strategy. Here a strong partnership between the CFO and CRO is required. The risk strategy and business strategy should be developed together and the process is iterative i.e. the business will prepare a first cut of the business plan, stress test it and assess risk within the strategy and then review the risk strategy as part of this and adjust elements of the business plan based on the assessment of risk. Once a balanced

risk strategy and business plan that meets the risk appetite statement is agreed, this will be approved.

There is an intrinsic link between the risk strategy and business strategy and being able to demonstrate, and live this consistency is key to being able to demonstrate internally (and externally) that management truly understand the risks associated with the desired business strategy, and by refining the business strategy to optimise the risk-return (value) to the owners/shareholders. Going forward it is likely (more so for regulated industries) for analysts to enquire and assess the risk-based value, of firms.

Typically one would expect the strategy to be set taking into account the other. For example, if the business strategy is set based on a company's products and market this would then be tested against the risk appetite. If they prove to be inconsistent then at least one has to be changed to bring them into line. It therefore does not matter the order in which the strategies are developed.

Practical ways in which businesses can link risk strategy with business strategy involve linking of five major best practice strategies:

- Risk transparency and insight: key risks need to be identified and assessed by using risk heat maps, risk reports customised for all employees (i.e. presented with diverse levels of granularity) and lessons learnt stories. Subsequently, the probable impact and magnitude of multiple, interconnected risks must be considered. The most critical part of the process is to identify all the key risks, and understand their strategic context regarding delivery of perceptive information to management. Once key risks are identified, performing the high level risk analysis alone is not sufficient as the risk examination needs to be extended to potential impact on dynamics of the entire market

- Define risk appetite and strategy: the appetite for risk should be assessed only after risk capacity was established to avoid "negative surprise effects" such as reputational damage, rating downgrades, insolvency, or eventual bankruptcy as a result of an erroneous risk evaluation. Once risk profile has

been outlined, an enterprise concentrates on expanding or contracting it depending on market circumstances

- Embed risk in business processes in the most optimal way
- Allocate sufficient risk management resources
- Ensure the existing risk culture gaps are addressed and understood clearly by all individuals

A company needs to decide on its key business strengths, where the company can grow the business, how much capital is available, etc and at the same time understand the core skills around risk management, preferences for risk etc. The former could reveal that the company needs to strengthen up in certain areas of risk management and the latter could indicate that the business plan needs to be tweaked. Practical ways in which this can be done include:

- Performing risk assessments of strategic alternatives
- Matching strategic risk exposures to financial objectives
- Comparing strategic risk exposures to risk appetite parameters
- Drafting a policy on the amount of risk that the company can assume in pursuit of its strategic objectives

Integration of risk management and capital management

Risk management should be linked to capital management and vice versa. A company should decide through its risk management vision, strategy and objectives how to integrate risk management and capital management. There are many approaches to determining capital requirements ranging from regulatory; rating agencies; internal and competitive pressures. .

Companies tend to carry out risk assessments and determined capital requirements over short term horizons. When determining the current and future growth strategies, a company will also need to determine the associated risks and

required capital over the business. Companies may choose to hold excess capital for future growth initiatives. The cost of acquiring capital from an alternative source has to be weighed up against the short term sacrifice in returns which may impact on share price. If the return on capital is not acceptable in the market, the share price will reflect this. When given free choice, a company should still use a risk-based approach to capital given that risk is, after all, the primary reason why capital is required beyond simply working capital.

Many successful companies hold excess capital at times to enable agility in pursuing growth opportunities. Life insurers in South Africa have to comply with the solvency requirements of the Financial Services Board. The big life companies in South Africa use their internal economic capital for business purposes. The Capital Adequacy Requirement (CAR) cover of the South African life companies is in the order two to three times.

Economic capital with a consistent unit of risk measurement (e.g. Risk Adjusted Return On Capital (RAROC) or Risk Adjusted Earning) should be implemented with an agreed buffer over regulatory capital maintained (e.g. 40-60%). Economic capital should be held at a level that satisfies the regulators, rating agencies and internal company requirements, whilst at the same time optimising the cost of capital is optimised.

Companies should have an Economic Capital Model (ECM) which is tailored to the company's strategy and risk appetites. The ECM needs to cover all risk and must be based on a robust selection of stress and scenario tests. A range of scenarios should be considered and the result form the models should then be combined with qualitative assessments. It is considered irrelevant whether Economic Capital is the appropriate approach. There is need for a common measure that you can use to assess risk and reward. If rating agencies capital or regulatory capital does this better than Economic Capital then the rating agencies or regulatory capital should be used instead of Economic Capital.

Generally, Economic Capital is regarded as a good measure as long as it is greater than the rating agencies or regulatory capital respectively. Where it is

Economic Capital is lower than rating agencies or regulatory capital, then the minimum capital should be the regulatory capital. If one believes that there is nor risk capital required, then Economic Capital is not relevant

Where Economic Capital is greater than regulatory capital, companies can consider retaining a buffer at the centre and monitor the cost of capital in relation to the strength of the overall balance sheet. Stronger balance sheet should mean lower risk, which should mean lower cost of equity.

Capital requirements need to be practical and consistent with the decision making they should drive. An approach that focuses only on regulatory capital or competitive pressures may significantly over- or under-state the capital actually required to back the risks taken on by a company. It is more appropriate to recognise the relative risk of business opportunities to be considered. Thus, while regulatory capital may specify a single level capital (e.g. % of net written premium) for all property business, in practice the relative risk associated with fairly homogeneous residential properties is very different to that of large portfolios of commercial properties taken on under a single policy. An internal requirements-based approach to risk management is therefore appropriate, even if capital is held at a regulatory level. The decision to take on business that results in a capital requirement higher than regulatory requirements is a decision for the shareholders - if an appropriate return can be held on the higher capital then this is the compensation. If not, then potentially these lines of business should be exited.

Having a standard model can be a useful tool but the key is to use an internal model backed with internal and external loss data, executive input and practical thinking. Although models are important, experience and practical consideration are even more important.

Products should be priced to deliver a defined or appropriate risk adjusted return on capital to shareholders. This return should be based on the greater of capital the company decides to hold internally or regulatory capital requirements. This discipline should ensure that excess capital is not unnecessarily held.

Organisations should define their capital requirements taking into account each of these perspectives, including a view on franchise value. Further complexities are introduced when dealing with groups and where fungibility of capital comes into play. Whichever view is taken it is key that this is communicated to stakeholders. I think a marginal cost of capital approach is most sensible, reflecting the differing cost of capital for each additional layer of capital.

4.2.2 Governance

Policy

Companies should have an over-arching risk management policy, covering the entire (aggregated) organisation, which is adapted and aligned locally. The overarching risk policy should provide overarching requirements regarding governance, risk categorisation and the need to have sub-policies for each material risk type (per common categorisation model).

It is common practice to include compliance with internal policies in Corporate Code and Ethical Conduct. The key is the understanding of the implications of specific risk taking. There may be times when there is deviation from policies but this will be while understanding the implication of such actions. Some of the key considerations on the overarching risk policy are:

- The policy should be approved by the board of directors
- The policy must form part of the company's governance system
- The policy must be adopted for execution by the CEO
- The policy can be used by Internal Audit as the reference point for board assurance on risk management performance and activity

Similar to the overarching risk vision / objectives / strategy being high level and difficult to make tangible at an operating level, the all encompassing risk policy will probably also be quite high level, and should also be the start of the translation of the risk approach into implementation phase rather than giving specific guidance.

In order to make the approach to risk management clear, the policy should be specific on the high level process that will be followed (e.g. identify, assess, control, manage and report on risks) and factors that will be key to the success of the process e.g. the need for appropriate oversight, governance and challenge of the process.

The overarching risk policy provides the strategic basis for risk management and sets out core underlying principles. This policy document should however not be a long and laborious document. One needs to avoid the risk policy requiring enormous amount of box-ticking rather than actual risk management. The overarching level is important provided that it goes to the next layer of granulation. Such a policy is a direct product of the need for a more detailed articulation of the risk strategy. Think of it as being similar to primary legislation – it is principles based, setting out the key stakeholders in the process and defining the grounds for good governance. The subordinate risk policies are then akin to regulations and “guidance/implementation notes”.

The risk policy should be implemented by a range of risk and related documents. Examples include policy statements for each of the risk types, risk strategy, risk appetite, overall risk and control policy/framework, outsourcing, reinsurance, etc.

Most enterprise risk management policies are typically very helpful in providing the overall governance framework and in setting the scene as to how different risk and capital management processes fit together, but they are not sufficiently detailed to really get into individual risk areas. These are better covered in individual risk policies. To try and put everything into one overarching policy is potentially overload.

Risk policies are an important element of the overall risk management framework. They provide a little more detail as to how risk appetite is implemented and what is acceptable or not. Risk appetite must be in each risk policy, letters of representation and remuneration links. Risk appetites can and may be set in isolation but there does need to be an overall aggregation to assess how the

overall combination makes sense - this needs to take into account diversification and concentration of risk (especially in the tail).

There would be a need to differentiate between the risk management framework and [risk management] policies and procedures. The risk management framework sets out the management philosophy (the degree to which risk disciplines are central to the way the business is run) and provides the operational blueprint of how risk management tools and processes assist decision takers. The policies then codify how the organisation is run and well [risk] managed in order to maximise the likelihood of achieving their objectives.

Enhancements that a company may implement to provide the necessary legal basis towards its views and approach to risk management largely depend on the nature of the company's business. For a financial institution these might include verifying that all transactions are properly documented and key contractual terms are incorporated, considering whether any terms may be implied into the contract by statute, custom or industry practice, determining whether there is any ambiguity in the terms or room for subjectivity, confirming whether the terms accurately set out the scope of services, quantifying residual risks and obtain commercial insurance coverage if applicable, checking contractual procedures (for example, use of legal department, post-acquisition reviews and document retention policies), creating a document retention policy and appoint a document retention officer, paying special attention to electronically stored information, including creating and storing back-up tapes, conducting periodic contract audits and identifying any potential limitations and risks regarding product performance.

Governance framework

A proper governance framework needs to be implemented that considers the strategic position on risk and over-arching risk policy. It normally helps to have a "house" that defines: governance, roles, responsibilities, methodologies, people, processes, people, systems. Many firms have built their bespoke house. It is difficult to determine the right framework,

The overarching risk policy should provide principles of acceptable and non-acceptable risks (and levels of risk) that the firm should/should not accept, based on pre-defined level of stressed events (but not specific stressed events), otherwise known as confidence level/s.

The policy must be able to outline the need for limits (in aggregate and for each key sub-risk category), as well as a clear framework for identifying, measuring, managing, monitoring and reporting risks. The business planning process should include a risk strategy and expected risk profile (by sub-risk category) measured against the approved limits/appetites. The business plan should not be approved if the limits are expected to be breached.

The governance framework should incorporate the nine governance elements of the King III report i.e. ethical leadership, corporate citizenship, board of directors, audit committee, risk, information technology governance, compliance, internal audit, stakeholder relationships, integrated reporting & disclosure.

The Financial Services Board (FSB) in South Africa supports King III and most of the elements above (the first seven) are addressed in the FSB returns.

The governance framework will need to have at least the considerations in respect of people, oversight, control environment, tools, systems and software. The considerations with respect to people will include the organisational structure, clearly defined roles and responsibilities, meet all the fit and proper requirements, enabling risk culture, composition of board of directors should achieve optimal balance, remuneration policy and philosophy, empowered Chief Risk Officer and an involved Chief Executive Officer. The oversight considerations will be with respect to risk policies, committees, terms of reference and three lines of defence. The control environment will include self assessments, independent review, processes and controls, business resilience e.g. stress testing, transparency, integrity, audit function and compliance function. The enabling tools will include the risk strategy, risk appetite, measurement and quantification, reporting, monitoring and risk specific contingency and crisis plans.

To ensure the integrity of the governance framework remains intact it must be regularly reviewed and challenged. The Own Risk and Solvency Assessment (ORSA) process and report should provide invaluable insight to achieve this covering but not limited to:

- risk pre-assessment, early warning and “framing” the risk in order to provide a structured definition of the problem, of how it is framed by different stakeholders, and how it may be best handled.

- risk appraisal, combining a scientific risk assessment (of the hazard and its probability) with a systematic concern assessment (of public concerns and perceptions) to provide the knowledge base for subsequent decisions

- characterisation and evaluation, in which the scientific data and a thorough understanding of societal values affected by the risk are used to evaluate the risk as acceptable, tolerable (requiring mitigation), or intolerable (unacceptable)

- risk management, the actions and remedies needed to avoid, reduce transfer or retain the risk and

- risk communication, how stakeholder and civil society understand the risk and participate in the risk governance process

4.2.3 Operational

Organisation

An organisation design must be in place to fulfil the strategic, governance and operational requirements of an effective risk framework.

Organisational design is critical for an effective risk framework. The design should include roles, responsibilities, communication and risk reporting structures. Organisational design is one of the enablers for fulfilling an effective risk management framework but it will not “make it happen” in isolation. It contributes to creating an environment which is conducive to the right behaviours.

The organisation design is absolutely key and it is the foundation of good risk management. The key focus areas should be: clear lines of defence; proper independent challenge and oversight; risk closely aligned to the business to understand and support the business; a favourable risk culture (i.e. reporting risk errors or breaches is encouraged) and effective, efficient and timely risk management information.

Organisation Design is key to ensuring that there is clarity on who is managing what risks. The focus of organisation design include segregation of duties, appropriate spans of control, clear reporting lines, matrix responsibilities for overlapping functions and independent oversight via audit / independent director roles.

The enterprise risk management function should translate risks into capital requirements and enable management and the board of directors to understand how their decisions impact on capital and hence resultant business and strategic decisions.

Reporting line(s) of the Chief Risk Officer (CRO)

Different systems are workable though it must be noted that the issue on the reporting lines of the Chief Risk Officer (CRO) generates too much hot air!

There is a strong view that the CRO should report directly to the Chief Executive Officer(CEO) and have a dotted line to the Board Risk Committee. The CEO is responsible for the wide risks of the company and therefore is preferred to the Chief Financial Officer (CFO) or Chief Actuary. In addition to reporting to the CEO, the CRO should also have unlimited access to the Chair of the Audit Committee and Risk Committee of the Board respectively.

This emerging practice of having the CRO reporting directly to the CEO on a solid line basis and to the Board on a dotted line gives the CRO a reporting line consistent with that of the key business leads and the CFO. It provides an opportunity for the CRO to be recognised as a true ‘officer’ of the company. It is vital that the CRO has adequate influence, and is not merely seen as a junior

executive. This fosters independence, visibility, influence. The concern about a reporting structure to the Board, while theoretically compelling, is that realistically, Boards typically do not have the broad and deep understanding of risk matters related to a company that the CEO should have.

The reporting of the CRO to the CEO allows direct access for risk issues but also to be a member of the Board in order to raise key risk issues in the event that the CEO covers bad news or risk issues. The CRO should also be a member of the Board and ExCo. However this is dependent upon the gravitas and importance of the role in the organisation and how critical this is to the organisation's business strategy, but should not be reporting into a position below the CFO.

Reporting by the CRO to the CFO does not give independence in the role and there could be issues leading to conflict of interest. Risk management is broader than either the finance or actuarial roles, specifically in respect of the operational risk issues. As the role of the CRO must also cover financial risks, reporting into the COO is not appropriate as the COO only tends to cover operational issues. Although all ExCo members are equal from a control/governance perspective, the order of importance on matters relating to control, risk and governance should be in the form CEO then CRO then CFO. In either the case of reporting to the CEO or CFO care and attention needs to be paid to clarity of role and responsibility when either of these two positions are wearing their risk function hat as opposed to their CEO or CFO hat.

Another argument from the respondents is that the CRO should report directly to the Board (with some arguing that the CRO should also be a member of the Board) and not to the CEO. This has already been implemented by many UK, US and European financial institutions. Under these models, the CRO then reports from the Board to the regulator. The fewer intermediaries the better and the more independent the risk function can and will become.

The CRO must have unfettered access to the Chairperson of the Board, the Chair of the Risk Committee and the Chair of the Audit Committee respectively. This provides challenge and balance. It is regarded wasteful to have risk report to

anyone other than the risk committee of the Board. If the CRO's reporting is to another company official who has a vested interest in the risk profile of the company then this could create a conflict of interest.

Each structure will be defined by proportionality considerations. The roles and responsibilities of the Board/Sub-Committees, the CRO, risk officers, risk management function, business management and internal audit should be defined.

Wider considerations on roles and responsibilities

The roles and responsibilities should be defined to a very detailed granular level; the more detailed, the less chance vagueness and ambiguity arises in risk decisions. Granularity would vary by function – e.g. new product design, or new ventures would require specific detail. If the culture and understanding are right, less granularity will be required in many areas.

Both functional terms of reference and individual job specifications for CROs and other key individuals responsible for identifying, managing, monitoring, using or reporting risks need to be amended to reflect these responsibilities. Role profiles need to be developed to define the appropriate skills and experience.

The risk governance framework must have clearly articulated segregation of duties of the individuals actually taking and being responsible for risks (1st line of defence), those that challenge the first line of defence (2nd line of defence) and finally the internal audit function that reviews to independently verify whether the preceding are happening.

Risk management roles and responsibilities should be developed to the management level at which risk and control functional ownership and actions required to address risk deficiencies will be taken.

There must be a clear separation between risk and finance functions. The finance functions relating to capital management, asset and liability management,

treasury, balance sheet management in particular should be separate as they are taking risk. Risk managers should not take these positions.

Culture

A risk culture is required in order to ensure an effective embedding.

Although a risk culture is very important, even more important is a culture of honesty, integrity and transparency. The absence of any of these key aspects of culture in a risk culture will render any risk management worthless. Culture cannot easily be changed and must start right at the top. You cannot implement a culture. You can merely put things in place that are conducive to appropriate and ethical behaviour

The tone from the top and remuneration must reflect risk strategy. The embedding has to go down throughout the organisation using initiatives such as culture change interventions, raising risk awareness and building these into relevant performance contracts.

The culture addresses the extent to which the board, management and staff understand and embrace risk management of the insurer. The main obstacle is the attitude of the leadership of the insurer. If the leadership does not support the principles of risk management or responds inappropriately to bad news, it will have a negative impact on risk management in the organisation.

Risk culture is relatively new but many companies are looking to review and embed a risk culture. The risk culture is being implemented by conducting quarterly risk culture assessments and addressing areas of weakness. Some companies have developed risk assessment culture tools with around eighty questions that are asked of a selection of employees on a monthly basis. Obstacles are a lack of risk culture at the top.

Cultural and organisational (management) structures are key to the success of a risk governance/management framework, as all parts need to be integrated. This usually means additional skilled resources. The successful implementation of the

required culture passes through implementing a decision-making process that is consistent with the way a company manages risks.

The top five aspects of a risk culture would be encouraging enhanced risk culture, incentivise risk management (risk-based reward structures of management), having appropriate risk operating models and team structures, as well as ensuring appropriate risk responsibilities (segregation of duties) are clearly articulated.

The risk culture needs to be communicated and accompanying training provided to all staff – visibly led by senior management. Instilling this through remuneration packages (all staff) is key to this being a success.

Good risk culture will instill good risk management as a matter of the way everyone does their role – seeking improvements, identifying and reporting breaches/weaknesses and desire to improve the risk management culture of the organisation as a whole. There is little benefit in rolling out a strong risk governance/management framework, if the risk culture is not aligned to the risk objectives. Understanding of why risk culture is important needs to be instilled to all staff.

Culture is critical to successful implementation of an effective risk and control environment. If the culture is resistant to the risk framework being implemented then it will become a compliance type implementation. If the culture is passive then implementation might be easy but real risks might not be identified. A culture that is fully on board will actively challenge and see value in the thought processes behind the risk framework.

Risk management will never be effective without the right culture – this is because profit motivation which is the default driver of business, does not necessarily lead to good risk management. To make the change not only needs a lot of training and staff being given the right tools and management information but also for targets and remuneration to be set in a manner consistent with good risk management. The main obstacle is normally the consistent application of the new approach and the impact the new approach has on the way companies are run

(there is a natural resistance to change particularly when it dramatically alters a company eg having to switch/re-price products).

A company's risk culture is a critical element that can ensure that "doing the right thing" wins over "doing whatever it takes". A KPMG survey of 500 bank executives found that 48% of respondents cited risk culture as a leading contributor to the credit crisis.

Although risk culture is a fundamental building block of good risk management practices, many companies show deficiencies in this area. In the same KPMG survey, 58% of corporate board members and internal auditors surveyed admitted that their company's employees had little or no understanding of how risk exposures should be assessed for likelihood and impact. 33% of the respondents to the KPMG survey said that key leaders in their organisation had no formal management training or guidance. The main obstacle to this is management attitude to risk. If the directive comes from the top (that risk management has a special place in corporate ethos), employees will follow, but the reverse is also true. In order to have the right risk culture, a company must have an appropriate governance structure in place, putting in place business processes such that risk management is embedded as opposed to staff feeling that risk management is a compliance issue separate from core business activities, executives setting the tone from the top, for example, by sharing both good and bad stories and experiences, publicly and rewarding good behaviours, possibly through competitions and other incentives.

Companies can face a number of obstacles that a company can face when embedding a risk culture. Some of these challenges or obstacles are: not having clear allocation of roles and responsibilities; a good news culture; inappropriate reward system; complexity; making aggregation of risks and transparent information flow difficult;, individuals, governance structure and organisational design, lack of clear goals, inappropriate measurement and leadership not visible.

The Board and executive management team must “walk the talk” by showing their buy-in to the process as part of a top-down approach and selected personnel must be selected to champion a bottom-up approach.

Processes

Processes are core to the effective delivery of the risk framework. The obstacle is the risk that people do not see this as easy to use but rather as ‘just’ actuarial or not relevant to my day job. Risk processes cover: risk identification; risk assessment; risk measurement; risk aggregation; capital assessment and risk reporting and actioning. Risk processes are key and are the mechanism to implement the risk management framework. To support the risk management process, appropriate IT and other systems are required.

Processes are the detailed way in which the methodologies are implemented to satisfy the objectives of the framework. Strategic, governance, operational and economic components are part of the overarching risk governance/management framework. Processes connect the governance and technical approach, to ensure appropriate analysis and discussion as part of approval.

Without understanding processes, it will not be possible to identify the risks facing the company and how these should best be avoided / mitigated / managed. A process-driven approach should be used in combination with a more strategic approach otherwise the big picture could be lost and unexpected risks could materialise.

Risk is managed through processes. Gone are the days when companies could identify, manage and report on risk in a manner that is haphazard or coincidental. An understanding of process is therefore critical for the effective execution of risk management throughout the business. Processes put in place to facilitate the management of risk will and should not always be known as risk management processes as the processes need to be embedded in the fibre of an organisation. These processes or activities effectively need to be business as usual and not be viewed as separate risk management processes. If that is not the case it may be that risk management processes are perceived as “red tape” or additional tasks

and often ignored or not followed properly when business or people are under pressure. Risk management processes are critical and should therefore not be seen as an overlay on business as usual activities.

However, although processes are important the business should not fall into trap of too many processes and controls. Most businesses have between ten to fifteen key processes.

Inputs

Processes determine how models, data and methodologies are implemented.

Models

Models are very useful tools for risk management. The risk relating to models can be mitigated by ensuring all the users of the models have an appropriate understanding of the purpose of the models and their shortcomings. Models are but one part of the jigsaw. There are many other key considerations, above all management input by applying responsible management and experience to business decisions.

The phrase, “all models are wrong but some are useful” is appropriate. The value to a business regarding their models is driven by the extent the business and management use the outputs of the model in key decision-making processes that are core to the success of the business. Validation and use of the models are critical to the accuracy and appropriateness of the model, as is having appropriate data quality.

Businesses need models but the models must be statistically tested with assumptions and the weaknesses must be clear, be independently validated and must be understood by the people using them to make decisions.

Models are useful to do the “what if” scenarios, to rank risks relative to each other, and to quantify the impact of changes to the risk environment. The models should not however become the centre of risk decision making. A sense check is required in terms of non-model based scenarios, reasonability reviews, tests of what would

happen at the extremes etc. so that there is awareness of the limitations of the models.

It is important to recognise that there may well be various ways of modelling a particular risk and one needs to understand both the variation between models and the model risk itself.

The recent global financial crisis revealed that banks and their directors did not necessarily understand the limitations of the models, or they chose to ignore them in view of anticipated upside. Although models are useful in the information they provide, the absolute outcomes they produce are not the most useful if taken in isolation. One of the most useful features provided by models relate to the assistance they provide in understanding sensitivity and stress testing – i.e. understanding how ,for example, the balance sheet or income statement may change under adverse conditions. Models are no substitute for management or expert overlay opinions and these should work in unison to help inform decision making.

Bad decisions may be made through the misunderstanding and/or misuse of models outputs. Furthermore, if the models are not properly updated to reflect the business and risk profile, this could lead to inappropriate output.

Data

Data is critical for decision making and should be of a quality equal to financial reporting. Data is important but is just a starting point. The weaknesses of models and their reliance sometimes on inadequate data points must be realised. Scenario planning and informed debate at executive committees and boards are important to intelligent risk management and decision making

Data is very important – it is the building block for good risk management. To address data quality, do not try and “boil the ocean”, identify thirty to forty key data risk elements and ensure the quality and integrity of those data elements is resolved. These data elements will drive probably 80% of risk decisions.

Sense checking, expert judgement and technical oversight are key to ensuring the model is not a black box, that the data that goes in is of appropriate quality and the outputs are accurate/sensible.

There will always be issues with data – whether it is insufficient data due to small books of business or lack of extreme data points, or questions about how to adjust long histories of data to current conditions. Data is important to risk management, but needs to be used creatively, for example by using scenarios from other companies or industries to test what it would mean for the company's own experience.

Data quality should be one of the key objectives for any organisation, be it policy data, asset data, market data or risk data. Data quality is typically a product of proper data governance, ownership and well controlled business processes. It is effectively the combination of appropriate business processes and controls, combined with data governance, data architecture and technology solutions that increase the quality of data.

Methodologies

Methodologies in as complex environment as insurance are important. This is an area that will evolve rapidly in the future. Companies should keep up to date with global developments in this regard and in line with the business changes.

The methodology should be appropriate for the organisation, with an ambition to enhance/refine the sophistication over time.

Methodologies can lead to significantly different outcomes from the same set of data. Companies need to test different methodologies and their outcomes so that they stay on top of the limitations of different methodologies and how these can be mitigated through combining different approaches. Use internal experts and have models audited by an independent outsider.

Methodology is a topic that we can always expect to evolve over time. What gets done today will get improved on next year. That is because technology continues

to improve and because a general increase in available data informs us better as to how to adopt and adjust methodologies. A key manner to ensure or protect the appropriateness of methodology is to properly capture / document the details including: rationale, purpose, core assumptions, inputs, outputs, shortfalls in methodology, etc. Once captured there will be a reliance on control functions (eg internal and/or external) to review and comment accordingly.

Implementation

The successful implementation of a risk management framework will need to be supported by all aspects of the vision & strategy, governance, people, tools, programme management and change management.

4.2.4 Economic

Cost and benefit analysis

Cost and benefit analysis of risk management should be properly understood. The potential costs and benefits need to be quantified on a basis that allows for ranking of potential risk management approaches with their advantages and disadvantages so that an informed decision can be made on the approach. The insurer should measure the cost and benefits to enable them to strike the right balance.

Having identified and quantified the likely costs and potential benefits, the implementation should be focussed on the areas that will deliver the greatest benefit.

It is normally challenging to get people who are willing to sign up to the anticipated benefits of implementing a risk management framework. The level of granularity to be achieved in determining the benefits should be pragmatic.

Benefits are not entirely always measured in monetary terms. There is evidence of companies have been sold at a premium where good risk management processes have been put in place.

Measuring the value of risk management

The value of risk management is to some extent measurable in hard terms e.g. the reduced volatility of earnings due to the implementation of reinsurance programme. In other cases is the value of risk management is not directly measurable but the consequences of not controlling risks can be considered versus the cost of implementing controls.

There are different ways of measuring the value of risk management. In some industries, the primary external measure will remain cash generation and IFRS International Financial Reporting Standard (IFRS) profit. However, analysts will over the years ask companies more risk-based questions, particularly based on topical scenarios. Therefore management needs to be more aware of the key risks and mitigations of each scenario.

The internal model and risk management framework must be implemented to the extent that it adds value (not monetary amount) to the shareholders/owners. This can be qualitative value, enhanced volatility management, prevention and more timely reaction to risk events, monitoring and tracking risks as they arise and to better plan to prevent/reduce impact of their reoccurring. Benefits are harder to quantify and have significant subjective assessment, thus this ought to be more qualitative in nature based on the desired culture of the organisation.

The reduction in risk losses, optimum capital levels and lower Pillar II capital add-on, better risk adjusted return on capital are measures that can be used to measure value. There are numerous metrics that can be defined for an insurer. However to ensure relevance to and effectiveness it should be relevant to the specific business/risk monitored, easy to monitor, calculate, verify and audit, limit to key risks and supporting timely reporting.

Businesses have however shown a tendency to resource up other areas of the business relative to risk management. Often risk management is an after thought and as a result, most risk divisions are under-resourced. This demonstrates that although companies may say that risk management adds value, evidence suggests this is not the case given the paucity of support given to risk

management divisions. Far too many companies still look at a risk management as a compliance activity.

All aspects of risk should be measured together to track the impact on shareholder value and certainty of shareholder returns. In addition, metrics should ideally be related to integrated reporting and not merely shareholder financial reporting, i.e. metrics relating to all stakeholders (staff, customers, society, the environment, etc.). They key metrics will be distilled from these depending on the vision of the company and its related priorities.

Rating agencies have determined that there is a positive relationship between the stock price movements and attributed enterprise risk management scores. This provides evidence of the value add of risk management.

Performance Measurement

The overarching principle should be that the instances of unexpected and unmanaged risk realisations should be low. This requires a clear understanding of the risks facing the business.

The appropriate performance metrics depend on the business strategy and precise sector. It is not possible to define generic key performance indicators given the uniqueness of each company. The key performance indicators should be linked to the stakeholders' (in particular shareholders) expectations and their business objectives. The metrics should be focused on assessing achievement of business objective with a risk versus reward lens. The metrics include measures of economic value add, capital solvency, earnings volatility, and cashflow sufficiency. Risk adjusted return on capital allows for equal basis of risk measurement across all Business Units.

More granular key performance indicators will apply to individual employees depending on their specific roles and responsibilities and may include for example total operational losses suffered or total fraud cases detected/reported/investigated.

Factors that can be considered when determining performance measurement include level of regulatory intervention, level of commercial impacts (capital required – regulatory and internal), rating agency, analysts and investor expectations, volatility of risks across the business, competitor benchmarking (market expectations), potential new markets and products, impact on cash generation, economic profit or loss and higher growth in share price than peers and lower volatility of share price movements.

General

The establishment of an effective risk management framework, with models to quantify risk based capital is a very timely and high resource process. The value to shareholders is around reputation, ability to plan for risk events, to identify and manage risks with greater effect. Any risk management system implementation should be proportional to risks and volatility of those risks within the business and how critical that is to the delivery of the business strategy and even survival of the business itself.

Focussing too much attention on vision, strategy etc. when it comes to risk will not be as valuable as the time spent on risk appetite and tolerance discussions, the robust challenge of managers' assessment of their risk environments and the testing of scenarios of what could go wrong using input from other companies and industries and understanding how well the risk environment should and will stand up to these scenarios.

4. 3 Conclusion

The research survey provided some detailed practical considerations when implementing the risk management framework for an insurance company. By obtaining views from professionals operating in unique capacities in the world of risk management, the research survey provided a holistic view of these practical considerations. Based on the literature review an effective risk management framework comprises of Strategic (risk vision, objectives, strategy, appetite,

tolerance and business strategy), Governance (overarching polices and specific policies, governance framework, capital integration); Operational organisation, culture, processes, inputs (models, data and methodologies), and implementation) and Economic (cost and benefit analysis, value of risk management and performance measurement). The practical considerations will vary depend on the nature, size and complexity of the insurance company.

4.4 Summary of the results

The research survey provided the detailed practical consideration when implementing a risk management framework for an insurance company. Based on the literature review, an effective risk management framework comprises of Strategic (risk vision, objectives, strategy, appetite, tolerance, business strategy, and integration of risk and capital management), Governance (overarching policy and sub policies, governance framework); Operational organisation, culture, processes, inputs (models, data and methodologies), and implementation) and Economic (cost and benefit analysis, value of risk management and performance measurement).

CHAPTER 5: DISCUSSION OF THE RISK MANAGEMENT FRAMEWORK

5.1 Introduction

In this chapter I discuss and explain the results that I obtained in context of the literature review that I first did, followed by the surveys and interviews that I conducted. I interviewed a mix of respondents in the categories of Chief Executive Officer, Financial Director, Chief Risk Officer, Compliance Officer, Partners and Rating Agencies Analysts. In their daily roles, these stakeholders are often faced with different objectives and requirements to their roles, the total of which appropriately represents a cross sectional market view. Furthermore, these respondents have years of experience and this has led to some very practical and tangible input that will definitely contribute positively to the industry.

In this chapter, I discuss and explain the findings of my research, followed by a conclusion of the key findings relative to the literature review.

5.2 Demographic profile of respondents

The demographics of my survey/interviews is given in the table below. In total, there were twenty six respondents (thirteen each from South Africa and London). The number of respondents in each of the categories is shown as well.

Table 2: Demographic profile of respondents

Sector	Role / Profile	Industry	Country	Responses
Advisory, Audit and Consulting	Partners (Actuaries & Risk)	Insurance	London	6
Advisory, Audit and Consulting	Partners (Actuaries & Risk)	Insurance	South Africa	5
Rating Agencies	Director & Rating Analyst	Insurance	London	2
Rating Agencies	Rating Analyst	Insurance	South Africa	1
Insurance	Chief Risk Officer	Insurance	South Africa	3
Insurance	Chief Executive Officer	Insurance	South Africa	1
Insurance	Head of Risk	Insurance	London	1
Insurance	Finance Directors	Insurance	South Africa	1
Insurance	Board of Directors	Insurance	South Africa	1
Insurance	Board of Directors	Insurance	London	1
Insurance	Compliance Officer	Insurance	South Africa	1
Insurance	Compliance Officer	Insurance	London	3

The demographic profile of the respondents is representative of the views in the both South Africa and England's insurance markets. Some of the respondents provide consulting services across the insurance industries across these two countries. In my plan, I had separately identified actuaries. However, it must be noted that a number of the actuaries are performing activities such as advisory, consulting, risk, finance, compliance and leadership and hence as such, their actuarial views are implicit in their responses. The demographic profile of the respondents is therefore appropriate for the purposes of the research.

The respondents comprise of very high profile individuals operating/have operated in the roles of: Chief Executive Officers, Finance Directors, Chief Risk Officers, Partners at Audit/Advisory firms, Compliance Officers with regulatory backgrounds and Rating Agencies. I was able to obtaining input from Rating Analyst operating in three different rating agencies, two of them based in England and one based in South Africa. This profile of rating agencies is important as one was able to tap into the thinking across the participants. Thus the respondents to this research

were offering six different types of points views leading to a very balanced research and the outcomes.

5.3 Discussion pertaining to the research problem

This section focuses on the discussion and explanation of the results in relation to literature, showing similarities and / or differences between the findings from the surveys/interviews from those of the literature review. The results from the surveys/interviews completed the findings from literature by providing some very granular practical insights into the development of an effective risk management framework. None of the findings of the interviews/survey disregarded the findings from the literature review where the conclusion was that an effective risk management framework for an insurance company comprises of: Strategic (risk vision, objectives, strategy, appetite, tolerance limits and business strategy); Governance (policy; governance framework; capital integration); Operational (organisation, culture, inputs (data, models and methodology) and processes) and Economic (cost benefit analysis, measuring the value of risk management and performance measurement) elements.

5.3.1 Strategic

Vision

The responses from the survey and the literature review identify the vision as being critical and also the starting point for implementing a risk management framework. The vision provides the direction as to the targeted end state for the company. The respondents noted that the vision should not be prepared in isolation but rather should dovetail with the overall vision for the company. The development of the vision should consider all the affected stakeholders, with the shareholders, board of directors and management playing a significant role in its development. Every activity carried out on risk management should be tied back and linked into the overall vision for risk. There was a view from some of the respondents that instead of having a separate vision for risk, one could make this

part of the overall vision of the company. Alternatively it was also suggested that one could start off with the overall company objective and the determine the risk vision from this base. It is clear that there is no one-size-fit all approach but rather that the company should adopt a holistic vision for risk. By determining the risk vision first, this approach becomes consistent with the VMOST (Vision, Mission, Objectives, Strategy, Tactics) strategic tool taught in the MBA.

Objectives

The objectives were identified by both the literature review and the respondents to be critical in implementing the risk vision. To achieve, there was a consensus that the objectives would need to be specific, measurable, attainable, realistic and timely whilst at the same time being kept straight forward and simple. Although the objectives have been identified as critical, it was noted however that these objectives should be kept at high level and not too granular. The right place for granularity was identified to be the determination of the risk tolerances and risk appetite. To achieve a successful implementation, the literature review and the respondents recommended that these objectives need to be translated into individual employee performance score cards as well as the business unit level score card as a mechanism of enabling implementation.

There is a recognition that the risk objectives should be consistent with the overall strategic and business objectives. As part of achieving this, the risk objectives should be understandable. To support these risk objectives, risk strategies need to be defined and that systems to capture and measure specific risks must be put in place. As with the risk vision, a common view from the respondents, in support of the literature review, is that the risk objectives should be kept at a high level and not made granularity. The place for granularity has been identified to be at the determination of the risk tolerance and risk appetite.

The value of translating the risk vision into risk objectives is critical because ‘objectives for risk’ provide the Board, management and the business with a set of targets to build on the risk management framework and monitor risk on an on-going basis. These can then be used to measurement management’s progress

and abilities in implementing and managing a risk management framework. In addition, this will also be of great use to other stakeholders such as the regulators, employees, policyholders and beneficiaries.

Risk Strategy

The organisational vision should translate into a risk strategy that incorporates risk objectives. This should set the direction for the risk management framework and environment (culture) in the organisation. In the absence of a risk strategy, the danger is that management are still unable to deal with risk situations as they arise even though they may have a risk vision and objectives. The risk strategy will also need to be consistent with the overall business strategy, and should work hand in hand with this. The alignment enables the achievement of the business and risk objectives, whilst at the same time providing assurance that the critical risks are not being missed out.

The risk strategy should also be set and maintained at a high level, with granularity only be achieved via the subsequent risk tolerance and risk appetite. By crystallising the risk strategy at the right level, the board will be able to meaningfully engage management on strategic matters. The risk strategy will need to provide the mechanism by which an appropriate culture should be developed to support the implementation.

Given the challenges faced by industries that some risk strategies that have been produced have been vague and ill-defined, there is a need to circumvent these shortcomings. The risk strategy should be therefore be subjected to scrutiny, and should be regularly reviewed to ensure its ongoing appropriateness.

Risk Appetite

A risk appetite statement sets out a company's current views on appetite for risk and is therefore the reference document of what the company's overall view of risk means in practice for business decision-making e.g. a company will not take on financial lines business on the short term side, or annuity business on the life side. It might not be easy to start with the vision, objectives and strategy

respectively, but every company should be able to document what risks it will and will not take on and why i.e. how risk management is applied in practice.

The respondents and the literature view have common views on the considerations in developing a risk appetite. In particular, there is a consensus that the risk appetite will have both quantitative and qualitative considerations. The quantitative and qualitative components provide the measurement capability against which the board and management, and to some extent, the regulators can use to monitor the company's risk position.

The determination of risk appetite is difficult and complex. There is no one-size-fit all solution. The difficulty increases with the complexity of the business both an in a stand alone capacity and also in the context of a group of businesses. The difficulty arises in that there is no single metric that capture all the dimensions with which risk has to be looked e.g. capital, profit, cashflow etc. To various organisations, each of these metrics has a proportionate degree of relevance and importance, and furthermore there could well be other dimensions of measure that provide more meaningful insights. A company needs to have this holistic mutli-dimensional understanding of risk. The process of translating a risk appetite statement into clearly defined actions for employees is not an easy one, especially as the size of the organisation increases. Furthermore, cascading down a group-wide or aggregate risk appetite to a more granular level such as at a product level is a challenging process, which can almost be an impossible one or rather can be done but with low levels of accuracy given the modelling and human limitations.

If done properly, the development of a risk appetite will add considerable value to an organisation. The value is derived from having a benchmark against which decisions can be evaluated on. By monitoring the risk exposure, the company will be able to assess whether the business is being managed within or outside the risk appetite. If the risk exposure is way within the risk appetite, this could be an indication that the company is not taking enough risk, thus potentially compromising on the return on capital. Similarly if the risk exposure is above the risk appetite, then the company will need to implement immediate actions, as appropriate in the circumstances, to manage the risk exposure to be in line with

the risk appetite. The risk appetite is therefore an important management tool that can guide business decisions effectively.

A risk vision, risk objectives and strategy can only be embedded via a successful implementation of the risk appetite into the company's operational and other activities.

This embedding embedded will be done through developing a limit allocation framework. To achieve this the business / entity level statements have to be set taking into account the business plans for each business / entity which in turns aligns with the key risk drivers impacted by the execution of the business plan. Once the overall limits have been translated into limits at say business / entity level these have to measured as often as appropriately required (some could be daily, others semi-annually) and management actions have to be agreed that are linked to these limits.

Risk appetite is not a well understood principle but it is certainly important. It needs to be simple to ensure that the fundamental of managing risk occurs as soon as possible and not after lengthy periods of time just to compute a number.

Risk appetite is clearly an area that warrants further investigations to enable companies to produce appropriate frameworks.

Risk Tolerance

Risk tolerance defines a company's views as to which risks it will tolerate and the associated capacity for tolerance. In determining the tolerance limits, companies will need to be very clear on the minimum and maximum tolerance levels respectively. As with the risk appetite, the tolerance levels can also be defined both quantitatively and qualitatively. Measurable tolerance limits enhances risk management and brings objectivity. By quantifying the tolerance levels, companies will be able to evaluate the extent of conservation in their past, current and planned future decisions.

The tolerance limits set the visible margins at which risks will be accepted and where changes in risk approach need to be challenged. The risk tolerance levels embedded in the risk framework can provide more risk management objectivity by incorporating "feedback loops" based on appropriate and good quality information, management processes and objective assessments. The feedback loops can help enable the company to take objective, necessary action in response to changes in its risk profile.

It is important is that users of information understand the numbers, where they come from, what they mean in practice and what their limitations are. Although the quantitative limits are very useful and potentially easy to measure, care is needed to ensure that the numbers produced are fully understood. Companies should desist from making decisions and implementation of any actions until they understand the numbers.

Although import some of the respondents believe that risk tolerance can be considered as merely adding another layer of unnecessary complication and that one should not worry excessively about it. The setting limits can have limited value unless the company's culture is enabling.

The risk tolerance will need to be consistent and developed jointly with the appetite. In fact one could combine the two to be one activity named risk appetite and tolerance instead viewing these separately. These two are the cogs that enable the risk vision, objectives and strategy. The challenges experienced in developing a risk appetite will equally apply when developing risk tolerance.

Business strategy

The literature review and respondents recognise that the business strategy and risk strategy should be consistent. There are different views as to the sequence with which the risk and business strategy should produced. Some argue that the business strategy comes first, others that it comes second and others argue that it is neither here or there. The important consideration is that any reference to business strategy needs to take into account the risk strategy and vice versa. Similarly, any review and monitoring should be on the same premise. The

business processes within a company would need to be such that any discussion or consideration to the strategy should never be done in isolation of the risk strategy. Change management will therefore be crucial in ensuring that the mindset of the board and management is tuned in to consider the two together.

The business planning process conducted by companies provides a platform for the joint consideration, and the sign-off of a business plan should not be done unless it can be evidenced that the risk strategy has been considered. The periodic review of the business plan provides another opportunity for the company to review the business strategy together with the risk strategy.

Integration of risk management and capital management

There is an agreed view in the literature review and by the respondents that risk management can longer be considered in isolation of capital management. The quantification of the risks is a crucial step in determining the amount of capital a company should hold, and the also in the ongoing capital management and capital allocation.

It has been noted that there are numerous drivers of capital ranging from regulators, rating agencies, internal requirements and the market. Companies are in some cases faced with a dilemma as to what the right amount of capital should be, and which of the numerous drivers should they target to meet.

It is inevitable that companies should meet the regulatory capital requirements or else they lose their license or face other supervisory interventions. As such any consideration to any measure of capital should be such that at the very minimum the regulatory capital requirements are met. It is therefore possible that companies can set their internal capital requirements to be the same as the regulatory.

As noted though, insurance companies in South Africa are currently holding capital at levels that equate to multiples of the regulatory capital adequacy requirements. Such buffers in capital are either prompted by the desire to achieve

certain ratings, or to have sufficient economic capital to withstand severe events, or simply a question of prudent capital management.

A risk management framework that is integrated with capital management enables companies to not only manage the risk-adjusted performance in relation to the capital holding, but also enables companies to evaluate potential opportunities in the context of the impact on risk and capital.

5.3.2 Governance

Policy

The literature review and respondents share a common view as regards the risk management policy. There is an accepted view that the company will need to have an over-arching risk management policy that is all-encompassing. This over-arching policy becomes the basis upon which all the more granular sub-policies for each material risk type will be derived from. As part of the implementation, it is common practice for companies to include the compliance with internal policies in the company's code and ethical conduct.

It is key for companies to understanding the implications of specific risk taking or reduction in respect of the risk policies. The key considerations on the over-arching risk policy are that the policy should be owned and be approved by the board of directors, should form part of the company's governance system, must be adopted by the chief executive officer for execution and can be used as a reference point by internal audit.

The over-arching policy will need to be set at a high level. The risk policy should be implemented by a range of risk and related documents. Examples include policy statements for each of the risk types, risk strategy, risk appetite, overall risk and control policy/framework, outsourcing, reinsurance, etc.

The limitations of an over-arching policy should be noted in that it may not be practical to include every possible consideration in one document. The risk policy should however be consistent with the risk vision, objectives, strategy, appetite

and tolerance. Companies will need to clearly define and distinguish between ownership and oversight of the risk policies. The internal control function needs to assure that appropriate controls have been put in place to ensure effective implementation, at the same time, the internal audit function should review the policy.

The policy and the sub-policies will need to comply with the requirements of the emerging regulations and provide a means for the company to be able to attest to the regulators on their compliance.

Governance framework

A proper governance framework is necessary for an effective risk management framework. A governance framework will enable checks and balances to applied across every activity in the risk value chain. In essence, governance itself is a risk management component.

The governance framework will need to look at roles, responsibilities, methodologies, people, systems and all the activities done as part of risk management. The strategic aspects of risk management discussed earlier in respect of the vision, objectives, strategy, appetite, tolerance, business strategy and integration of risk and capital management all need to subjected to scrutiny across each of the areas that the governance framework will look at. The risk policy described earlier will outline the principles and will provide the base for governance.

The governance framework should consider all the influences internally and in the external environment. The external environment would typically consider all the existing governance frameworks such King III, the emerging regulations such as Solvency II in Europe and Solvency Assessment and Management (SAM) and market views on best practice. These influences in aggregate are constitute critical elements such as corporate citizenship, boards of directors, audit committees, risk functions, information technology governance, compliance, internal audit, stakeholder relationships and integrated reporting and disclosures.

The Financial Services Board (FSB) in South Africa supports these elements as defined in King III to the point of addressing seven of these in the FSB returns.

The considerations with respect to people would include the organisational structure, roles and responsibilities particularly of the chief risk officer and chief executive officer, appropriateness and suitability of office bearers, culture, composition of the board of directors, remuneration policies and philosophy, empowered chief risk officers and involved chief executive officers.

The oversight framework should include a clear delineation of the lines of defence, having appropriate policies, establishing the right committees with appropriate terms of reference.

An internal control environment is required to ensure appropriate controls are in place to conduct self assessments, enable independent review, ensure transparency and integrity. This will need to be supported by the internal audit and compliance functions.

To ensure integrity of the governance framework remains intact it must be regularly reviewed and challenged an Own Risk and Solvency Assessment (ORSA) process will be developed as required by Solvency II and SAM. The ORSA should provide invaluable insight to achieve this covering but not limited to:

- risk pre-assessment, early warning and “framing” the risk in order to provide a structured definition of the problem, of how it is framed by different stakeholders, and how it may be best handled.

- risk appraisal, combining a scientific risk assessment (of the hazard and its probability) with a systematic concern assessment (of public concerns and perceptions) to provide the knowledge base for subsequent decisions

- characterisation and evaluation, in which the scientific data and a thorough understanding of societal values affected by the risk are used to evaluate the risk as acceptable, tolerable (requiring mitigation), or intolerable (unacceptable)

- risk management, the actions and remedies needed to avoid, reduce transfer or retain the risk and
- risk communication, how stakeholder and civil society understand the risk and participate in the risk governance process

5.3.3 Operational

Organisation

An organisation design must be in place to fulfil the strategic, governance and operational requirements of an effective risk framework. Organisational design is critical for an effective risk framework. The design should include roles, responsibilities, communication and risk reporting structures. Organisational design is one of the enablers for fulfilling an effective risk management framework but it will not “make it happen” in isolation. It contributes to creating an environment which is conducive to the right behaviours.

The key focus areas for the organisation include segregation of duties, appropriate spans of control, clear reporting lines, matrix responsibilities for overlapping functions and independent oversight via audit / independent director roles.

One of the contentious areas to address is the reporting line(s) of the chief risk officer. The schools of thought available are that the chief risk could report to either or a combination of the chief executive officer, board of directors, chief financial officer, regulators or chief operations officer. In both the literature review and the respondents, there is an inclination that the chief risk officer should report directly to the chief executive officer and the board of directors and also that the chief risk officer should also sit on the board of directors. To potential reporting lines to either the chief financial officer or chief operations are regarded as leading to the conflict and compromising the objectivity of the chief risk officer. This an area that will require more clarity particularly as the emerging regulations get bedded down and the regulators could potentially take a view on the matter.

The roles and responsibilities should be defined to a very detailed granular level, the more detailed, the less chance vagueness and ambiguity arises in risk decisions. The level of granularity can vary by function – e.g. new product design, or new ventures would require specific detail. Both functional terms of reference and individual job specifications for CROs and other key individuals responsible for identifying, managing, monitoring, using or reporting risks need to be amended to reflect these responsibilities. Role profiles need to be developed to define the appropriate skills and experience.

The risk governance framework, must have clearly articulated (segregation of duties where possible) of the individuals actually taking and being responsible for risks (1st line of defence), those that challenge the first line of defence (2nd line of defence) and finally the internal audit function that reviews to independently verify whether the preceding are happening.

Risk management roles and responsibilities should be developed to the management level at which risk and control functional ownership and actions required to address risk deficiencies will be taken.

There must be a clear separation between risk and finance functions. The finance functions relating to capital management, asset and liability management, treasury, balance sheet management in particular should be separate as they are taking risk. Risk managers should not take these positions.

Culture

A risk culture is required in order to ensure an effective embedding. The desired culture should include honesty, integrity and transparency. The absence of any of these key aspects of culture in a risk culture will render any risk management worthless. Culture cannot easily be changed and must start right at the top.

The tone from top and remuneration are important in implementing culture and these must reflect risk strategy. The embedding has to go down throughout the organisation using initiatives such as culture change interventions, raising risk awareness and building these into relevant performance contracts.

The culture addresses the extent to which the board, management and staff understand and embrace risk management of the insurer. The main obstacle is the attitude of the leadership of the insurer. If the leadership does not support the principles of risk management or responding inappropriately to bad news, it will have a negative impact on risk management in the organisation.

Risk culture is relatively new but many companies are looking to review and embed a risk culture. The risk culture is being implemented by conducting quarterly risk culture assessment and addressing areas of weakness. Some companies have developed risk assessment culture tools with around eighty questions that are asked of a selection of employees on a monthly basis. Obstacles are lack of risk culture at the top.

Cultural and organisational (management) structures are key to the success of a risk governance/management framework, as all parts need to be integrated. This usually means additional skilled resources. The successful implementation of the required culture passes through implementing a decision-making process that is consistent with the way a company manages risks.

Top five aspects (risk framework) would be encouraging enhanced risk culture, incentivise risk management (risk-based reward structures of management), have appropriate risk operating models and team structures, as well as ensuring appropriate risk responsibilities (segregation of duties) are clearly articulated.

The risk culture needs to be communicated and with accompanying training provided to all staff – with obvious leading by senior management. Instilling this through remuneration package (all staff) is key to this being a success.

Good risk culture will instill good risk management as a matter of the way everyone does their role – seeking improvements, identifying and reporting breaches/weaknesses and desire to improve the risk management culture of the organisation as a whole. There is little benefit in rolling out a strong risk governance/management framework, if the risk culture is not aligned to the risk objectives. Understanding of why risk culture is important needs to be instilled to all staff.

Culture is critical to successful implementation of an effective risk and control environment. If the culture is resistant to the risk framework being implemented then it will become a compliance type implementation. If the culture is passive then implementation might be easy but real risks might not be identified. A culture that is fully on board will actively challenge and see value in the thought processes behind the risk framework.

As was the case with risk appetite, risk culture has been identified to be a critical component of risk management to the point that an agreed view from literature review and the respondents is that all the other elements will not yield the desired outcomes if the risk culture is not in place. To the extent that the people taking, managing and overseeing risk have not embraced the right culture then all the effort will not be worthwhile. Companies should therefore invest considerably to implement the appropriate enabling culture.

Processes

Risk processes cover identification, assessment, measurement, reporting and monitoring of risks. These processes are the mechanism to implement the risk management framework. Processes are the detailed way in which the methodologies are implemented to satisfy the objectives of the framework. To support the risk management process, appropriate information technology and other systems are required.

Without understanding processes, it will not be possible identify the risks facing the company and how these should best be avoided / mitigated / managed. A process-driven approach should be used in combination with a more strategic approach otherwise the big picture could be lost and unexpected risks could materialise.

Risk is managed through processes. Processes put in place to facilitate the management of risk will and should not always be known as risk management processes as the processes need to be embedded in the fibre of an organisation. These processes or activities, effectively needs to be business as usual and not be viewed as separate risk management processes. If this is not the case, then

risk management processes could easily be perceived as “red tape” or additional tasks and hence often ignored or not followed properly when business or people are under pressure.

However, although processes are important the business should not fall into trap of too many processes and controls. Most businesses have between ten to fifteen key processes.

Inputs

Processes determine how models, data and methodologies are implemented.

Models

The literature review and the respondents identify models as being very useful tools for risk management. However there is a recognition that users of the model, management and the board need to understand the shortcomings of the models. Management and the board are being challenged to makesure they fully understand the output of models and impact on their decisions. There is recommendation that scenarios and stress testing exercises should be used as part of the decision making so that management are fully aware of the variation of the output across a range of scenarios.

The models should be subjected to independent validation by suitably qualified people. The recent global financial crisis demonstrated that the management and directors in banks did not necessarily understand the limitations of the models, or they chose to ignore these limitations it in view of anticipated upside. The impact of making bad decisions based on model risk can therefore be severe.

In using models, companies must acknowledge that models are no substitute for management and expert overlay opinions and these should work in unison to help inform decision making. Given that under the emerging Solvency II and SAM regulations, companies have the option of building their own internal models, it is important for companies to have a clear understanding of these models and their limitations.

Data

Data is critical for decision making and should be of a quality equal to financial reporting. Data is important but is just a starting point. The weaknesses of models and their reliance sometimes on inadequate data points must be realised. Scenario planning and informed debate at executive committees and boards are important to intelligent risk management and decision making

The quality of data will need to be addressed. However the process can be challenging as data issues can be numerous and very complex, especially for data relating to older time periods. As companies tend to change information technology systems over time, data may be lost or transposed incorrectly during the process of migration leading to the quality of data being compromised.

If the data going through the models is incorrect, it is inevitable that the output is incorrect and such management and the board can make incorrect decisions that can be very costly. Although efforts can be put towards cleaning the data, it must also be noted that there will always be issues with data either due to

due to small books of business or lack of extreme data points, or questions about how to adjust long histories of data to current conditions. Data is important to risk management, but needs to be used creatively, for example by using scenarios from other companies or industries to test what it would mean for the company's own experience.

Data quality should be one of the key objectives for any organisation irrespective of the nature of the data. Data quality is typically a product of proper data governance, ownership and well controlled business processes. It is effectively the combination of appropriate business processes and controls, combined with data governance, data architecture and technology solutions that increase the quality of data. To address the problems relating to data, businesses will therefore

need to improve their processes, controls, governance, data architecture and technology solutions.

Methodologies

Methodologies in a complex environment as insurance are important.

Methodology is a topic that we can always expect to evolve over time. What gets done today will get improved on next year. That is because technology continues to improve and because a general increase in available data informs us better as to how to adopt and adjust methodologies. A key manner to ensure or protect the appropriateness of methodology is to properly capture and document the details including the rationale, purpose, core assumptions, inputs, outputs, shortfalls in methodology, etc. Once captured there will be a reliance on control functions (eg internal and/or external) to review and comment accordingly. Companies should keep up to date with global developments in this regard and in line with the business changes.

Methodologies can lead to significantly different outcomes from the same set of data. Companies need to test different methodologies and their outcomes so that they stay on top of the limitations of different methodologies and how these can be mitigated through combining different approaches. Use internal experts and have models audited by an independent outsider.

Implementation

The successful implementation of a risk management framework will need to be supported by a vision and strategy, governance framework, people, tools, systems, programme management and change management. Under the solvency II regulations in Europe, some companies are spending financial resources between £100 million to £150 million to implement risk management frameworks. Given the significant cost and resources associated with implementing risk

management frameworks, companies should therefore pay considering attention to the implementation.

The literature review and the respondents point out that the board and management need to take ownership, lead and be involved in the implementation of the risk management frameworks. The executive level involvement will provide the much needed impetus and support to the implementation. This will also help in dealing with and addressing challenges faced in implementation such lack of buy-in, commitment and the available of resources.

5.3.4 Economic

Cost and benefit analysis

The costs and benefits of implementing and maintaining a risk management framework need to be properly understood. To achieve this, a business case needs to be developed clearly identifying all the costs, splitting between project costs and subsequent business costs. At the same time, the expected benefits of implementing the risk management framework should be identified. Companies should implement a tracking capability. The tracking capability will enable companies to monitor and evaluate actual realised benefits versus the expected and as part of the process understand the sources of the differences.

There is need for pragmatism in doing a cost and benefit analysis. Significant time can be easily wasted by focussing energy on granular detail that does not necessarily produce additional benefit. Companies will therefore need to define their material levels ensure that an analysis is done and kept at the right level.

Measuring the value of risk management

The value of risk management is to some extent measurable in hard terms e.g. the reduced volatility of earnings due to the implementation of reinsurance as a risk mitigation tool. In other cases it is not directly measurable but the consequences of not controlling risks can be considered versus the cost of implementing controls.

There are different ways of measuring the value of risk management. In some industries, the primary external measure will remain the impact on cash generation and International Financial Reporting Standard (IFRS) profit and balance sheet.

The company needs to understand to value to be derived from risk management before deciding on the framework to implement. The challenge typically faced by companies is that some of the expected benefits of having a proper risk management framework cannot be easily quantified. On the other hand, the qualitative benefits are clearly observable for example enhanced volatility management, prevention of risk events and more timely reaction to risk events, monitoring and tracking risks as they arise and to better plan to prevent/reduce impact of them reoccurring. However to place a quantitative value on these benefits is not necessarily a simple process.

Performance Measurement

There are numerous performance metrics than a company can choose from. The appropriate performance metrics depend on the business strategy and precise sector. Given the uniqueness of different companies, there is no one-size-fits all performance metric. Rather companies will have to evaluate their unique circumstances and determine the appropriate performance metrics. This will be done in consideration to the objectives of other stakeholders such as shareholders, employees and regulators.

Given the elevation of risk and its importance, the emerging regulations are requiring that performance measurement be done on a risk adjusted manner. Companies will therefore need to determine the appropriate risk adjusted metrics.

The individual score cards of staff members, divisions and business will also need to factor the risk-adjusted objectives.

General

The establishment of an effective risk management framework, with models to quantify risk based capital is a very timely and high resource process. The value to shareholders is around reputation, ability to plan for risk events, to identify and manage risks with greater effect. Any risk management system implementation should be proportional to risks and volatility of those risks within the business and how critical that is to the delivery of the business strategy and even survival of the business itself.

5.5 Conclusion

The research survey provided some detailed practical considerations when implementing the risk management framework for an insurance company. By obtaining views from professionals operating in unique capacities in the world of risk management, the research survey provided a holistic view of these practical considerations. Based on the literature review an effective risk management framework comprises of Strategic (risk vision, objectives, strategy, appetite, tolerance and business strategy), Governance (overarching polices and specific policies, governance framework, capital integration); Operational organisation, culture, processes, inputs (models, data and methodologies), and implementation) and Economic (cost and benefit analysis, value of risk management and performance measurement). The practical considerations will vary depend on the nature, size and complexity of the insurance company.

CHAPTER 6: CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

The focus in this chapter is to draw the main conclusions for the literature review and contrast these with the key findings from the research, and then identify the areas of focus to ensure that an insurance company has an effective risk management framework. Recommendations will also be provided for the key stakeholder groups namely: insurance companies; regulators; business schools and consumers. At the end of this chapter, based on the literature review and interviews/surveys done, the researcher also recommends topics for further investigation.

6.2 Conclusions of the study

The research results confirm the literature review that an effective risk management framework comprises of Strategic (risk vision, objectives, strategy, appetite, tolerance, business strategy, and integration of risk and capital management), Governance (overarching policy and sub policies, governance framework); Operational organisation, culture, processes, inputs (models, data and methodologies), and implementation) and Economic (cost and benefit analysis, value of risk management and performance measurement). Within each of these underlying components of the framework, there are significant considerations for companies in order the embedding of the risk framework is effective, appropriate and relevant given the differences between the individual companies.

What has become apparent in this research relative to the literature review, has been the extent of the underlying detail from an implementation perspective as the literature review is set at a much higher level. The respondents provided granular detail on the subject.

The key areas that led to very granular input from the respondents are the following:

Strategic

- The risk appetite and the determination of risk tolerance limits is an important and critical component of a risk management framework. There are numerous ways in which this can be done, ranging from quantitative and qualitative measures. There is a need for businesses to understand the risk appetite and risk tolerance limits and be able to translate these into the daily business activities. It must be noted that not every aspect of the risk appetite can be determined quantitatively hence the need for the qualitative view

- The order in which business strategy and risk strategy should be determined was inconclusive. Though some regarded the order as not important, it could add value to businesses to understand which comes first. The three approaches offered by the respondents covered a broad spectrum as to how the two should interact. This was an interesting observation in this research

Governance

- The determination of an appropriate governance framework requires a broad knowledge of the entire risk universe, not just limiting this to an insurance company. For example, one respondent specifically noted the King III and how one needs to ensure there is proper alignment. This is potentially an area that will need more engagement and debate given the breadth of options available, and how an individual company will need to focus on the critical aspects. Given the emergence of different regulations affecting the insurance companies, companies will need to constantly evaluate the suitability of their governance frameworks in light of the emerging frameworks regulations or legislation

- The integration of capital management and risk management is also an area that generated interesting views. It is evident that companies are faced with a number of considerations such as: regulatory, rating agencies, competitors and internal capital requirements. The target levels of capital and the basis for such become very important given the different drivers. Furthermore, companies could be faced with a significant opportunity cost (given the differences between say internal capital requirements and regulatory capital requirements). Companies should investigate this opportunity cost of holding excess further and determine how this is impacting them given the opportunities (missed) and market positioning relative to competitors. Companies should seek to investigate on how to optimise their holding of capital, and this should be a critical component of the balance sheet management efforts

Operational

The operationalisaton of the risk management framework generated some deep insights that ought to be investigated further by the insurance companies.

- There were strong views on the reporting line of the Chief Risk Officer, with two main suggestions. First was that the CRO should report to the Chief Executive Officer with a dotted line to the Board. On the other hand was a view that the CRO should report directly to the Board. The respondents demonstrated the need for the elevation of the role of the CRO and more importantly to ensure that this role is independent and is not subjected to conflict of interest. This was an interesting observation as the tendency has been for CROs to report CFOs. There were strong arguments that the CFO's area is only one of the manner areas that are affected by the risk management, and in this regard, a CEO was being seen as the individual with the best view of the enterprise risk wide views. Furthermore, there were arguments that for CROs to report to anything but the CEO would reduce them to nothing but junior executives – whose reporting line could impact on the ability to report on and have effective oversight on risk

- There was an acknowledgement that a risk culture is probably the most important of an effective risk management framework, and that all the other elements can only be as effective as the underlying culture in the organisation. There was consensus that management are often the main obstacle to an effective risk culture and that the most effective way to embed the culture was for this to start at the top – i.e. get the culture right with the Board, then ExCo, Management and Staff. Various suggestions were made to embedding the culture ranging from having this recognised in roles and responsibilities as well to the incentive schemes. The measurement of the embedding of a risk culture was also noted as a challenge and the recommendation pertaining to this was that regular reviews should be conducted.

- Processes were identified as critical to managing risk. A suggestion was made that actually, organisations should have in place process-driven risk management methodologies. It was emphasised that an organisation ought to have about ten to fifteen core processes, and that risk management of these processes should be robust. A process-driven approach should be used in combination with a more strategic approach otherwise the big picture could be lost and unexpected risks could materialise.

- The inputs of to the risk models: data, models and methodologies were identified to be critical. The key point to note was to ensure that the data is of the right integrity and quality as this is the major input into the models. Insurance companies should consider to invest resources to ensure that the data being used in the organisation is credible.

- Although models are extensively used, it was strongly noted that models should not replace people. There is an emphasised need for management and staff to ensure that they fully understand the models and what these do. To this effect, it was noted that often management and staff often use the output of the models without an interrogation of these, and lessons learnt from the banking crisis show that this is an area that demonstrated the shortcoming of management's understanding of risks.

- The key observation on the methodologies was that these change regularly with global trends tending to drive the approaches adopted by companies. As different methodologies lead to different results, companies out to ensure that that the fully understand the limitations of the methodologies. What will be a challenge for management is that different methodologies produce different results leading to certain decisions. As companies tend to be faced with very critical decisions e.g. mergers and acquisitions, it is critical that management should deploy robust techniques to have them have comfort in the outcomes of the model output, as influenced by the methodologies

- The actual implementation of a risk management framework is also critical. It was interesting to not that there was a striking similarity in the considerations needed to have a proper governance framework to those needed to implement a risk management framework. The overall message here is that companies ought to invest as much time in implementing as the different components of the risk management framework will not fit together properly if implementation is not effectively done.

Economic

- The measurement of the value of risk management, although possible, was an area where significant work could be required if companies ought to know and understand the full impact of investing in risk management. This is one area where it was apparent that it could be difficult to quantify and hold people accountable to the determined value. Some of the challenges related to how one can possibly isolate value and attribute this to simply risk management

- There are numerous methods that can be used to determine the performance of an insurance company. A key observation was that there is no right way to do this, and hence no method can be prescribed. Rather it was agreed that whatever the measure, the key consideration is the appropriateness of the measure in the context of the company's objectives

and strategy. In this regard, it was regarded as not entirely appropriate to compare companies or performance thereof on the basis of a particular measure. However there was no doubt that whatever the measure, it ought to take into account the risk adjusted return on capital.

6.3 Recommendations

Based on the outcomes of this research, the recommendations to the stakeholder groups will be:

Insurance companies

In implementing risk management frameworks, the key areas need more focus are:

- There is merit in companies understanding the business strategy and risk strategy, and how these interact as well impact on the business vision and objectives, and risk vision and objectives. It is important to consider the iterative process in deciding these and the business planning period is an opportune period to interrogate these. Furthermore, there is need to ensure that there is proper alignment.

- Risk appetite and risk tolerance limits. Companies need to ensure that that they fully understand the risk appetite and tolerance and that these are appropriate for the nature of the business. A combination of both quantitative and qualitative statements and metrics respectively will be required. Given the number of ways in which these can be defined, pragmatism and internal consultation should be done before confirming these. There is an element of subjectivity involved in this process as such, companies ought to understand these limitations and challenge them, in order that these do not either unduly constrain the business or rather lead the business to making wrong decisions.

- Companies should review their governance frameworks and ensure that not only are they appropriate for Solvency II and SAM regulations but

rather these should also consider existing governance requirements such as King III, as well as other existing and future regulations. The integrated governance framework will be essential in ensuring that companies meet the associated requirements. Furthermore, this must not be a tick box exercise but rather something done to ensure compliance as well contribute to value creation.

- There is a strong view that CROs should report directly to the CEO and also having a reporting line to the Board. There is an additional view that the CROs should also be members of the Board. Insurance companies ought to review their existing approaches and consider implementing this change.

- In addition to the CRO reporting to the CEO, with a dotted line to the Board, and being a Board member, the CEO should own risk and be the champion of risk management in the business.

- A risk culture was identified as being very critical. Insurance companies should consider investing heavily in defining the required culture and in embedding this. More importantly, there could be a paradigm shift in that there is call for the risk culture to start with the Board and then ExCo. CEOs are being challenged to be the advocates of the culture change and the leadership should be visible in order that the rest of the organisation can embed the culture requirements.

- Insurance companies should consider using a process-driven approach to risk management in combination with a more strategic approach otherwise the big picture could be lost and unexpected risks could materialise. In executing this, companies ought to understand their top ten to fifteen core processes and can consider using these to implement a process driven approach to risk management.

- Insurance companies should consider investing heavily in exercises and projects aimed at cleaning data to ensure that this is of the right quality, integrity and that data across the organisation is credible.

- The Board, ExCo and Management should understand what the models are doing and that they fully understand the output and the implications of the models. The Board, ExCo and management should be aware that the models are not replacing them as people, but rather are simply tools to aid decision making. As such responsibility and accountability remains with the Board, ExCo and management.

- Given methodologies tend to be driven by global trends and that changes to methodologies can have an adverse impact to capital and decisions taken, the Board, ExCo and management (as with models), should invest time and resources in understanding the methodologies, how these could change and more importantly the implications of these on the decisions made by the business.

- Companies should invest significant resources in the overall implementation of a risk management framework and should ensure that there has been proper consideration of all the critical factors of implementation such as: vision/strategy; governance; people; tools; systems/enablers; change management and programme management.

- Companies should invest time to understand the value of risk management, and how this can be measured. This should be considered together with an evaluation of the effectiveness and appropriateness of the risk-adjusted performance measures adopted by the companies, given their business strategy.

Regulators

- The implementation of risk management framework as a complex initiative and the regulators should ensure they understand the critical issues faced by companies such as risk appetite and risk tolerance.

- The reporting lines of the CRO need to be supported by the regulators, with the evidence of this research suggesting that the proper reporting line is to the CEO, with a dotted line to the Board and that the CRO should be a member of the Board.

- The implementation of a risk culture is long process and runs beyond timelines set to implement the new Solvency II and SAM regulations. Given the importance of culture, starting with setting the tone at the Board and ExCo, the regulators could seek to identify ways in which they can assess the embedding of risk culture in organisations. What will be critical for regulators is to understand that even with state of the art models, systems, processes and people, without a supporting risk culture risk management will not be effective in an insurance company.

- As the onus has been set for the Board, ExCo and management to understand the models and methodologies, and that these components could change over time as global trends and developments emerge, the regulators could invest more time in understanding the models and methodologies to determine their appropriateness. Furthermore, the regulators together with the Government, can set up researching units that focus on helping the insurance industry identify the proper models and methodologies

Consumer groups

- Consumers should understand the risk management framework, procedures and practices in place in insurance companies before investing. Considerations to the risk management and capital holding of the insurance companies should form part of the consumer value considerations instead of simply chasing higher investment returns of other factors.

Business schools

- Given the significance of risk management and the implications of the lack of effective risk management on the economy, industry, individuals both

locally and globally, business schools should consider introducing risk management as core course as well developing sub-components of risk management as elective courses

6.4 Suggestions for further research

There are a number of future research questions that can be considered for future research. These include the following:

- The determination of an appropriate risk strategy for an insurance company
- The determination of an appropriate risk appetite for an insurance company
- The determination of quantitative and qualitative risk tolerance limits for an insurance company
- The dynamics of a business strategy and the risk strategy, and how these work in practice for an insurance company
- Determining an appropriate governance framework for an insurance company
- The integration of capital into the risk and decision making framework of an insurance company
- The practical considerations on embedding a risk culture in an insurance company
- Identifying the top fifteen processes that an insurance company should have in place
- Investigation of the challenges faced when implementing a risk management framework in an insurance company

- Determining the economic value of risk management in an insurance company
- Evaluating and contrasting the different performance measures an insurance company can use to determine risk adjusted returns

REFERENCES

AM Best (2008) Risk Management and the Rating Process for Insurance Companies, AM Best, 25 January 2008, pp. 1-19.

AM Best (2006) Comments on Enterprise Risk Management and Capital Models, Special Report, February 2006, pp.1-2.

Archaryya, M. (2007) The Fundamentals of Designing an Integrated Model of Financial Risk and Operational Risk within an Enterprise Risk Management Framework: Findings of an Empirical Study.

AON (2009) Enterprise Risk Management: S&P White Paper, August 2009, pp. 1-9.

Banfield, E. (2005) Escalating Risk Visibility – The Professional Risk Management View of the Role of the CRO, Risk Center, 17 November 2005, pp. 1-9.

Bennet, C. and Cusick, K. (2007) Risk Appetite: Practical Issues for the Global Financial Services Industry, Presented to the Institute of Actuaries of Australia Biennal Convention, 23-26 September 2007.

Bennett, N.E., Isakina, V.A. and Longley-Cook, A.G. (2002) Integrated Risk Management, Society of Actuaries, 2002 Valuation Symposium, 19-20 September 2002, pp. 1-30.

Bernanke, B.S. (2009) Four questions about the financial crisis, Speech at the Morehouse College, Atlanta Georgia, 14 April 2009.

Bernanke, B.S. (2009) American International Group, Testimony before the Committee on Financial Services, U.S. House of Representatives, Washington DC, 24 March 2009

Boston Consulting Group (2009) Creating Value in Banking in 2009: Living with new realities, February 2009

Broadleaf Capital International (2007) Tutorial notes: The Australian and New Zealand Standard on Risk Management, AS/NZ 4360:2004, pp. 1-6.

Calandro, J. Jr., Fuessler, W. and Sansone, R. (2008) Enterprise risk management – an insurance perspective and overview, *Journal of Financial Transformation,* Vol 22, pp. 117-122, March 2008.

CEA (2007) Solvency II Glossary, March 2007, pp. 12-57.

CEIOPS (2009) Level 2 Implementing Measures on Solvency II: Capital Add-on.

CEIOPS (2009) Draft Advice for Level 2 Implementing Measures on Solvency II: Articles 118 to 124, Tests and Standards for Internal Model Approval, 2 July 2009.

CEIOPS (2010) Level 3 Guidance on Solvency II: Pre-application process for Internal Models, March 2010.

CEIOPS (2008) Own Risk and Solvency Assessment (ORSA), Issues Paper, 27 May 2008.

CEIOPS (2009) Advice for Level 2 Implementing Measures on Solvency II: System of Governance, October 2009.

Clark, K.L. (2005) Taking A Closer Look at Enterprise Risk Management, Health Section News, Society of Actuaries, August 2005 – Issue 50, pp. 16-18.

COSO (2004) Enterprise Risk Management, Committee Of Sponsoring Organisations (COSO), September 2004, pp. 1-7.

Creswell, J. (2003) Research Design Qualitative, Quantitative and Mixed Methods Approaches, Second ed, Sage Publications, Thousand Oaks.

Cummins, J.D. (1998) Allocation of Capital in the Insurance Industry, Wharton School.

Deighton, SP., Dix, RC., Graham, JR., Skinner, JME. (2009) Governance and risk management in the United Kingdom Insurance Companies, Presented to the Institute of Actuaries on 23 March 2009, pp 1-38.

Desender, K. (2007) On The Determinants of Enterprise Risk, University of Autonoma de Barcelona Department of Business Economics, Draft October 2007.

Duke, E. A., (2010) Moving beyond the financial crisis, Speech at the consumer bankers association annual conference, Holywood Florida, 8 June 2010.

Earm, A.M., Jean, S., Loftis, W.H., Longley-Cook, A.G. and Sandberg, D.K. (2002) Risk Management at the Corporate Level, Society of Actuaries, 30-31 May 2002, Volume 28 No. 1, pp. 1-24.

Eling, M., Schmeiser, H. and Schmit, J.T. (2006) The Solvency II Process: Overview and Critical Analysis, May 2006, pp. 1-20.

EU (2009), Solvency II Directive, PE-CONS 3643/6/09 REV 6

Financial Services Authority UK (2003) Review of UK insurers' risk management practices, October 2003, pp. 3-24.

Financial Services Authority UK (2006) The FSA's risk assessment framework, August 2006, pp. 1-72.

Financial Services Authority UK (2006) Insurance Sector Briefing: Risk Management in Insurers, November 2006, pp. 5-34.

Financial Services Authority UK (2002) Managing risk: Practical lessons from recent "failures" of EU insurers, December 2002.

Froot, K.A. (2007) Risk Management Capital Budgeting and Capital Structure Policy For Insurers and Reinsurers, The Journal Of Risk and Insurance, Volume 74 (No.2), pp. 273-279.

Harner, MM. (2010) Barriers to effective risk management, University of Maryland School of Law, Submission Draft, pp 1-38.

Henderson, D.T., Dall, K.A. and Robbins, D.L. (2003) Pricing Risk Management, Society of Actuaries, Spring Meeting, 29-30 May 2003, pp. 1-23.

Hoyt, RE. and Lieneberg, A.P. The value of enterprise risk management, University of Georgia and University of Mississippi, pp 1-38.

International Actuarial Association (2008) Practice Note On Enterprise Risk Management For Capital And Solvency Purposes in the Insurance Industry, 11 August 2008, pp. 5 – 90.

International Organisation for Standardisation (2008) Risk Management – Principles and guidelines on implementation, Draft International Standard ISO/DIS 31000, ICS 03.100.01.

Kamiya, S., Shi, P., Schmit, J., Rosenberg, M. (2007) Risk Management Terms, University of Wisconsin-Madision, March 2007, pp. 2-166.

Klein, R.W, Ma, G., Ulm, E.R., Wang, S., Wei, X. and Zanjani, G. (2009) The Financial Crisis and Lessons for Insurers.

King III (2009), King Code of Governance for South Africa 2009

Kirkpatrick, G. (2009), The Corporate Governance Lessons from the Financial Crisis, Financial Market Trends, OECD

Kivisaari, E. and Creedon, S. (2010) Input of the Groupe Consulatif in the development of Level 3 guidance regarding the Own Risk and Solvency Assessment (ORSA), Groupe Consulatif Solvency II Working Group on Internal Governance, Supervisory Review Reporting.

KPMG (2009), Survival of the Most Informed: GRC comes of Age – How to Envision, Strategise, and Lead to Achieve Enterprise Resilience

Kruse, S. and Olsen, J. (2009) Input of the Groupe Consulatif in the development of Level 3 guidance regarding the Own Risk and Solvency Assessment (ORSA), Groupe Consulatif Solvency II Working Group on Internal Governance, Supervisory Review Reporting.

Lam, J. (2003) Ten Predictions for Risk Management, Actuary of the Future Newsletter, Society of Actuaries, October 2003 – Issue 15, pp. 1-4.

Lam, J (2006) Emerging Best Practices in Developing Key Risk Indicators and ERM Reporting

Lester, R. (2010) Solvency II Survey 2010 Counting down to the Directive, Deloitte.

MARSH, and University of Nottingham (2009) Research into the definition of and application of the concept of risk appetite, pp. 5-47.

Meulbroek, L.K. (2002) Integrated Risk Management for the Firm: A Senior Manager's Guide, Harvard Business School.

Mueller, H., Simpson, E. and Easop, E (2008) Enterprise Risk Management The Best of ERM, *AM Best,* Emphasis 2008/3, pp. 6-9.

Meuller, H. (2004) Specialty Guide on Economic Capital, Working Paper, Society of Actuaries, pp. 3-43.

Moody's (2006) Moody's Global Rating Methodology for Life Insurers, Rating Methodology, September 2006.

Nocco, B.W. and Stulz, R.M (2006) Enterprise Risk Management: Theory and Practice, *Journal of Applied Corporate Finance Volume 18 (Number 4)*, Fall 2006.

Pagach, D. and Warr, R. (2010) The Characteristics of Firms That Hire Chief Risk Officers, North Carolina State University, pp. 1-24.

Pagach, D. and Warr, R. (2010) The Effects of Enterprise Risk Management on Firm Performance, Jenkins Graduate School of Management, North Carolina State University.

Penrose, G.W. (2004) Report of the Equitable Life Inquiry.

PwC (2008) Does ERM matter?* Enterprise Risk Management for the Insurance Industry, A global study – June 2008.

Schiro, J.J. (2005) Successful Risk and Capital Management, *The Geneva Papers* (2005) 30, pp.60-64.

Segal, S. (2005) Value Based Enterprise Risk Management, The Actuary Magazine, Society of Actuaries, pp. 1-4.

Standard & Poor's (2005) Evaluating The Enterprise Risk Management Practices of Insurance Companies, Standard & Poor's, 17 October 2005, pp. 2-16.

Standard & Poor's (2008) Standard & Poor's To Apply Enterprise Risk Analysis To Corporate Ratings, Ratings Direct, 7 May 2008.

Standard & Poor's (2006) Evaluating Risk Appetite: A Fundamental Process of Enterprise Risk Management, Ratings Direct, 31 October 2006.

Standard & Poor's (2010) Insurers In EMEA See The Value of Enterprise Risk Management, Ratings Direct, 5 May 2010.

Standard & Poor's (2010) Refined Methodology For Assessing An Insurer's Risk Appetite, Ratings Direct, 30 March 2010.

Standard & Poor's (2010) A New Level of Enterprise Risk Management Analysis: Methodology For Assessing Insurers' Economic Capital Models, Ratings Direct, 19 May 2010.

Standard & Poor's (2010) Expanded Definition of Adequate Classification In Enterprise Risk Management Scores, Ratings Direct, 28 January 2010.

Tonello, M. (2007) Emerging Governance Practices In Enterprise Risk Management, The Conference Board, pp.5 – 98.

Turner, A. (2009) A regulatory response to the global banking crisis.

Tripp, M.H., Chan, C., Haria, S., Hilary, N., Morgan, K., Orros, G.C., Perry, G.R., and Tahir-Thomson, K. (2008) Enterprise risk management from the general insurance perspective, Presented to the Institute of Actuaries on 28 April 2008, pp. 1-93.

Walker, D. (2009) A review of corporate governance in UK banks and other financial industry entities.

Yang, N-C. (2010) ERM Executive Compensation, The Independent Consultant, 20 May Issue No. 30, pp. 1-4.

Zimmermann, J. and Lippert, C. The future of risk management in insurance companies: Developing concepts of estimating benefits, pp. 1-4., http://www.nottingham.ac.uk/business/rmgic/RiskManagementSystemsr_Zimmermann_Lippert.pdf (accessed on 31 August 2010).

APPENDIX A

Actual Research Instrument

The proposed Questionnaire to be sent to the selected respondent shall be as follows:

A – Email to Respondent

Dear Sir / Madam,

Questionnaire for the determination of an Effective Risk Management Framework for an Insurance Company

The writer is in his final phase of completing his MBA degree with Wits Business School, South Africa, and is undertaking research. The writer is kindly asking you to complete the attached questionnaire and is also asking for a follow on interview to the extent that this is determined necessary following your response to the questionnaire.

The writer has already done extensive literature research on the topic on determining an Effective Risk Management Framework for Insurance Company. The questionnaire research will therefore serve to establish the extent of application and transferability of the key components of the topic.

Your selection to participate in this interview has been at the writer's discretion and understanding that you have a reasonable knowledge on the subject in question. The writer is also asking that you do not provide your company specific information but rather that you provide your professional view, perspective and understanding of the questions.

Thank you in anticipation of your support.

Yours faithfully,

Michael Gondo
Wits Business School
2007/2010 Student Number: 0717809Y

B - Questionnaire

Questionnaire for the determination of an Effective Risk Management Framework for an Insurance Company

Strategic

Vision

A company should clearly articulate its vision for risk and such vision needs to be linked with the overall vision for the company and this should be done before embarking on activity towards risk, be it the taking of risk, and/or the management of risk, a company.

Question 1:

What is your perspective to the statement above, and what would you identify as pros and cons of such an approach?

Objectives

The vision for risk should be translated into objectives for risk, and these should be clear and distinct.

Question 2:

What value do you think the translation of a risk vision into risk objectives would bring and how elaborate should a company be on its risk objectives?

Strategy

The vision and objectives for risk should translate into a clearly defined risk strategy in manner that ensures the vision and the objectives will be achievable?

Question 3:

How important do you think it is to produce a risk strategy and what will value will this bring to a company?

Appetite

A risk appetite statement should be defined out of the risk strategy, clearly identifying the wanted and unwanted risk

Question 4:

How significant is the production of a risk appetite statement and what should be done to ensure that translates the risk strategy into tangible deliverables?

Tolerance

The risk tolerance limits should be defined in both quantitative and qualitative means once the risk appetite statement has been defined

Question 5:

What are your views around the setting of both quantitative and qualitative tolerance limits? Given this, would you think this provides more objectivity towards risk management?

Business strategy

The risk strategy should be linked to the business strategy, and similarly, the business strategy should be linked to the risk strategy.

Question 6:

What comes first between risk strategy and business strategy? What are the practical ways in which businesses can link risk strategy and business strategy and vice versa?

Governance

Policy

A company should have an over-arching risk policy based on its strategic view towards risk, and this should be the basis of all the underlying risk policies for the different risks taken by the business.

Question 7:

Would you see an all encompassing risk policy providing much guidance on the overall view to risk? What enhancements can a company implement in order that this provides the necessary legal basis towards its views and approach to risk management?

Governance framework

A proper governance framework needs to be implemented that considers the strategic position on risk and over-arching risk policy.

Question 8:

What would you consider as the eight key elements an appropriate governance framework? How can companies ensure that the integrity of the governance framework remains intact?

Capital integration

Risk management should be linked to capital management and vice versa. There are many approaches to determining the capital requirements ranging from regulatory; rating agencies; internal requirements and competitive pressures

Question 9:

What philosophy do you think companies should adopt in determining the appropriate approach towards determining capital requirements? Where companies then decide on approaches that lead to capital requirements greater than the regulatory company, how do you think companies should then compensate such opportunity cost?

Operational

Organisation

An organisation design must be in place to fulfil the strategic, governance and operational requirements of an effective risk framework

Question 10:

(a) How important is Organisation Design in fulfilling an effective risk management framework? Given your response, what would you list as the five key focus areas that a company should have in place, regardless of cost?

(b) There are varying views on the reporting lines of Chief Risk Officers. Some of these reporting lines are to the: Chief Financial Officer / Financial Director; Chief Executive Officer; Chief Actuary; Chief Operations Officer; Board; Regulator. What do you think is the appropriate reporting line, and why?

(c) In terms of roles and responsibilities, could you comment on the level of granularity that a company should develop these to, and what is the appropriate level to stop worrying about defining these?

Culture

A risk management culture is required in order to ensure an effective embedding.

Question 11:

What are your views on the importance of culture? Given your view, how can companies successfully implement the required culture? What are the main obstacles towards achieving this?

Processes

Processes must be in place to support the strategic, governance, operational and economic ambition set by the company.

Question 12:

(a) The word processes is used across many disciplines. What do you take this mean as regards the strategic, governance, operational and economic approach to risk?

(b) How important is an understanding of processes to risk management? What views would you take towards a process-driven approach to managing risks?

Inputs

Risk management requires companies to have in place models, data and methodologies.

Question 13:

(a) Given the known pros and cons to models, how much reliance should companies put in place in models? How can companies assure themselves that the models do lead disasters such as those experienced during the global financial crisis?

(b) Using the “Garbage-In Garbage-Out” principle is it ever possible that companies can have clean data, and if not, what can companies do to ensure to improve the quality of data? How important do you think data is in risk management?

(c) The methodologies are a key element in the modelling of capital. What are your views on the importance of methodologies in risk management? How can companies ensure that the methodologies are appropriate?

Implementation

The success of risk management is dependent on the implementation.

Question 14:

In your view, what are the ten key focus areas that companies should pay attention to ensure a successful implementation?

Economic

Cost and benefit analysis of risk management should be properly understood.

Question 15:

(a) How can companies strike the right balance between cost and benefits?

(b) Is the value of risk management measurable?

(c) What are the seven ways in which the value of risk management can be measured?

APPENDIX B

Consistency matrix

The consistency matrix is provided on the next page.

Table 3: Consistency matrix

Research problem stated here					
Problem	**Literature Review**	**Hypotheses or Propositions or Research questions**	**Source of data**	**Type of data**	**Analysis**
Develop an effective risk management framework for an insurance company	FSA September 2008; EU Solvency II Directive November 2009; BCG 2009; BIS 79th Annual Report 2009; Longin 2000; Boselovi 2009; Hamilton September 2009; Calomiris 1999; Mishkin 1999; Cavallo 1999; Bernanke April 2009; Klein 2009; Penrose March 2004; Verity March 2004; McDonell December 2002; FSA September 2008; Harner 2010; ISO 31000 2008; COSO 2004; Standard & Poor's October 2005; AM Best January 2008; Enterprise risk management guide 2006; Mueller 2008; Tonello 2007; FSA 2006; KPMG 2009; PwC 2008; King III 2009; CEIOPS 2009	Based on the above summary, an effective risk management framework for an insurance company should comprise of: risk management vision, risk management objectives, risk management governance framework, integration of governance, risk management and compliance, risk management strategy and determination of the risk profile, risk management policy, risk appetite, risk tolerance, embedding risk appetite and tolerance into business strategy, organisation of risk management, roles and responsibilities, risk management culture, risk management processes, risk management models, data and methodology, capital integration, value of risk management and the implementation of risk management.	Questionnaire will be sent to forty professionals who include actuaries, risk professionals, finance and consultants. Some of the forty professionals are based in South Africa and others are based in England, United Kingdom	Data will be nominal collected from the responses of the forty respondents, who are the primary source. Secondary sources of data may also be used	Content analysis guided by the various key themes extracted from literature review. Shall also follow and adapt Creswell's recommended analysis sequence as described in section 3.8