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RISK MATURITY AT A LIFE INSURER

by

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A Minor Dissertation Submitted to the Department of Business Management in Partial Fulfilment of the Requirements for the Degree of

MASTER OF COMMERCE

In the subject of

BUSINESS MANAGEMENT

Faculty of Management
At the University of Johannesburg

Research Supervisor – Dr. T.N van der Linde
DECLARATION

I declare that the published and unpublished articles and other elements that make up this research report are the result of my own independent work. To the extent usually and reasonably expected, assistance and peer review were received from my supervisor and colleagues. The research study is being submitted in partial fulfilment of the requirements for the degree of Master of Commerce in Strategic Management in the University of Johannesburg (“UJ”). It has not been submitted before by me for any degree or examination at another university.

................................................

OUPA JOSEPH MOKGOANTLE

November 2013
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I thank my family whose sacrifices, support and encouragement have been an inspiration to me. Without them, this journey would not have been possible. Thank you for the time and finances that you have supplied me with – I appreciate all the love and support. Your constant reminder that a Master's degree is an investment has been my motivation. To my friends, who have seen little of me over the last two years, thank you for the support and constant encouragement. To my colleagues, it was an honour and privilege engaging with you and learning from you. Thank you!!

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DISCLAIMER
Risk management being a sensitive topic, this research study does not attempt to go into the risk details of Liberty Life and it does not use any specific information. Nevertheless, this research work does use the learning that I did at Liberty Life and thereafter to achieve a bigger goal – The goal of helping Liberty to identify key components or attributes critical for developing an applicable and effective Risk Maturity Assessment Model.

Readers are advised not to draw any company specific risk management information from this research study and indeed encouraged to use this work as a framework and roadmap to tackle risk management maturity within their organisations.
ABSTRACT
Risk management is an important factor in ensuring business and project success. Thus, risk management methodologies are constantly being developed and improved. In order to define the goals, specify the process and manage progress, it is necessary to have a clear view of the enterprise’s current approach to risk, as well as a definition of the intended destination. Benchmarking offers the opportunity to determine the current maturity capability against agreed frameworks, and also provides a structured route to improvement. A generally accepted framework is needed in order for an organisation to benchmark its current maturity and capability in managing risk, and this framework should also assist in defining progress towards increased maturity. Being an assessment tool, a risk maturity model is designed to measure risk management capability and to provide objectives for improvement.

The purpose of the research is to identify, adapt and recommend a sound risk maturity model, together with an easily applicable and effective questionnaire for use to measure the risk capability maturity of a Life Insurer ("Liberty Life"). To achieve this aim, six risk management maturity models were identified through a literature review and the proposed model was further supported with long-term insurance specific attributes of risk management as advocated by leading corporate governance codes and regulations such as King III and the newly proposed Financial Services Board (FSB) Solvency Assessment and Management (SAM) regime. Despite the widening consensus on the value of risk management, effective implementations of risk processes into organisations are not common. The benefits of mature risk management have been discussed in Chapter 2.

By adopting an exploratory approach, the researcher conducted a qualitative research project, in the form of an in-depth case study, on a multinational financial services organisation. Unstructured face-to-face interviews were held with senior executives and risk managers in order to gather data regarding what they perceive as key attributes, including acceptable measurement criteria, of a risk maturity model appropriate and effective for implementation in their organisation.

Keywords: Business process models, Risk management, Risk maturity, Risk culture
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LIST OF ACRONYMS
BPMM Business Process Management Model
COSO Committee of Sponsoring Organisations
CMMI Capability Maturity Model Integration
ERM Enterprise Risk Management
IACCM International Association for Contract and Commercial Management
IIA Institute of Internal of Auditors
IRM Institute of Risk Management
OMG Object Management Group
RIMS Risk Management Society
RMM Risk Maturity Model
RMMM Risk Management Maturity Model
SAM Solvency Assessment and Management
CHAPTER 1: NATURE AND SCOPE OF STUDY

This chapter presents the problem that has given rise to this research. The background of the problem is described and the purpose of the study stated. It continues with the procedure of the study and outlines the principal stages of the investigation. Delimitations for the study are further expanded. Finally, the chapter is concluded with a preview of the content embodied in the following chapters.

1.1. RESEARCH CONTEXT AND BACKGROUND

According to Van Looy (2013), business process management (BPM) is expected to contribute to a more effective and efficient way of working, with a higher customer focus and performance gains. Although these benefits seem attractive, the adoption in particular organisations remains a challenging journey. Many organisations experience difficulties in introducing or advancing in business process management, as process improvements are not easy to realise and a lot of aspects must be taken into account. Therefore, several practitioners and academics have developed a business process maturity model (BPMM) to help organisations gradually adopt business process management for specific processes and/or for the whole process portfolio value chain. Some well-known BPMMs are the Capability Maturity Model Integration (CMMI) (2009), Object Management Group (OMG) (2008), or from scholars like de Bruin and Rosemann (2007) and Hammer (2007), as discussed in previous BPTrends Articles (Van Looy, 2013:1).

A BPMM offers a road map towards a more advanced use of business process management organised according to a sequence of levels. For instance, the subsequent maturity levels of OMG’s BPMM are called: (1) initial, (2) managed, (3) standardised, (4) predictable, and (5) innovating, respectively representing a higher degree of business process maturity. Thus, a BPMM typically presents a sequence of levels and a step-by-step guide with goals and best practices to reach the desired level, depending on the organisational needs. Indeed, a pragmatic approach is required as organisations must...
strive for their optimal level instead of blindly striving for the highest level for all processes (van Looy, 2014:1).

According to authors, (Roglinger, Becker, & Pöppelbuß, 2012:3), maturity models typically include a sequence of levels (or stages) that form an anticipated, desired, or logical path from an initial state to maturity. An organisation’s current maturity level represents its capabilities as regards a specific class of objects and application domain (Roglinger, et al., 2012:3). Maturity models are used to assess “as-is” situations, to guide improvement initiatives, and to control progress. In the Business Process Management (BPM) field, two types of maturity models can be identified: process maturity models and BPM maturity models (Roglinger, et al., 2012:3). According to the authors, the former refers to the condition of processes in general or distinct process types, the latter addresses a company’s specific BPM capabilities.

The number of maturity models related to the BPM field has increased substantially to such an extent that practitioners and scholars run the risk of losing track (Roglinger, et al., 2012). Although scholars and BPM experts require “the motley array of maturity models” to be consolidated (Curtis & Alden, 2007:1), potential adopters from industry still encounter high uncertainty. Moreover, scholars struggle with the conceptual enhancement of maturity models. So far, many reviews focus on process improvement or BPM in general (Roglinger, et al., 2012). According to these authors, while some authors briefly list BPM-related maturity models, a systematic in-depth analysis is lacking. As a first step to address this objective, the researcher focuses on BPM maturity models as well as on their practical applicability and usefulness. The attributes commonly used in models will be identified and used to achieve this objective. This is justified by the increasing recognition of BPM capability development as an important topic within the BPM community (Roglinger, et al., 2012:3). Moreover, applicability and usefulness of maturity models concerns both scholars and practitioners (Roglinger, et al., 2012:3).

Organisations of all types and sizes face uncertainty regarding their objectives. Uncertainty occurs at every level of an organisation and in every operation and function. The effect of this uncertainty on an organisation’s objectives is “risk” (ISO, 2009). In order to ensure the
The benefits of using a maturity model when determining the risk maturity level are increasingly being recognised by individuals, organisations and governments worldwide (Coetzee & Lubbe, 2013:46). According to Coetzee & Lubbe (2013), a risk maturity model is primarily used by risk managers to assess how advanced their risk management process is and to communicate this information to senior management and to the governing body, which in turn, can incorporate this information into their decision making with regard to risk management. The anticipated benefits of implementing effective risk management process are briefly discussed in Chapter 2.

1.2. RESEARCH MOTIVATION
In traditional risk management, individual risk categories are managed from a silo-based approach. ISO 31000 (2004), recommends an enterprise-wide approach to risk management to enable the organisation to consider the potential impact of all types of risks on all processes, activities, stakeholders, products and services (Monda & Giorgino, 2013:2). As a consequence, Enterprise Risk Management (ERM) has recently emerged as a new technique aimed at managing the total portfolio of risks that faces an organisation in an integrated, enterprise-wide manner (Monda & Giorgino, 2013:2).

According to the 2013 Peer Review Report titled “Thematic Review on Risk Governance” published by the Financial Stability Board (FSB), the recent global financial crisis exposed a number of governance weaknesses that resulted in organisations’ failure to fully understand the risks they were taking. In the wake of the crisis, numerous reports painted a fairly bleak picture of risk governance frameworks at financial institutions, which consist of the three key functions: the board, the enterprise-wide risk management function, and the independent assessment of risk governance (FSB, 2013:1). The crisis highlighted that many boards had directors with little industry experience and limited understanding of the rapidly increasing
complexity of the institutions they were leading. Too often, directors were unable to dedicate sufficient time to understand the organisation’s business model and too deferential to senior management (FSB, 2013:1). In another survey study conducted by Commercial Risk Europe entitled the “2012 Emerging Risk” revealed that the thought of Emerging Risks can keep even the best prepared risk managers awake at night (Scheffel, 2012:3). This is especially the case when one moves into the territory of Donald Rumsfeld’s famous ‘known unknowns and unknown unknowns’ (Scheffel, 2012). While some emerging risks are truly new and unnerving, most others are really just old risks in new clothes.

Like many organisations locally and globally, the executive management at Liberty Life are also faced with a challenge of how to begin their efforts to obtain strategic benefit from a more robust enterprise-wide approach to risk management. For example, by means of a risk maturity model, Liberty Life can evaluate the eight components of the framework as set out in COSO: internal environment, objective setting, event identification, risk assessment, risk response, control activities, information and communication and monitoring. COSO Framework is briefly discussed in Chapter 2. Risk maturity models assist organisations to assess the maturity level of the ERM, highlighting strengths and weaknesses from which a prioritised list of measures is derived, whose implementation helps to fill existing gaps in ERM practices (Ciorciari & Blattner, 2008:2).

According to authors, Beasley, Branson, & Hancock (2010:3), boards of directors have become increasingly aware of their responsibilities related to effective oversight of management’s execution of enterprise-wide risk management processes. This is due, in part; to significant external pressures that have developed recently that are thrusting risk management and its oversight to the forefront of many board agendas and management action plans. Thus, many organisations are seeking to develop a process that provides management and the board of directors with rich information about potential events that may affect the entity, especially top risk exposures, that they can monitor on an ongoing basis. While most organisations monitor numerous key performance indicators (KPIs), often those indicators shed insights about risk events that have already affected the organisation.
Increasingly, boards and senior executives are looking to develop metrics or indicators to help to better monitor potential future shifts in risk conditions or new emerging risks so that management and boards are able to more proactively identify potential impacts on the organisation’s portfolio of risks. Doing so enables management and the board to be in a better position to manage events that may arise in the future on a more timely and strategic basis. This latter type of metric or indicator is frequently referred to as a key risk indicator (KRI) (Beasley, Branson, & Hancock, 2010:3). KRIs are metrics used to provide an early signal of increasing risk exposure in various areas of the organisation. In some instances, they may be little more than key ratios that the board and senior management track as indicators of evolving problems, which signal that corrective or mitigating actions need to be taken.

Other times, they may be more elaborate, involving the aggregation of several individual risk indicators into a multi-dimensional risk score about emerging potential risk exposures. KRIs are typically derived from specific events or root causes, identified internally or externally, that can prevent achievement of strategic objectives (Beasley, Branson, & Hancock, 2010:3). Examples can include items such as the introduction of a new product by a competitor, a strike at a supplier’s plant, proposed changes in the regulatory environment, or input-price changes. The design and roll-out of a set of KRIs is an important element of an organisation’s enterprise risk management process.

The balanced scorecard, a widely known strategic performance measurement system, can be leveraged to support an ERM view of risk management (Beasley, Chen, Nunez, & Wright, et al., 2006). With an emphasis on continuous improvement, the balanced scorecard is the most common strategy-based performance management system in place today and is widely used to link an organisation’s mission and strategy to performance measures and strategically aligned initiatives. Because it takes an enterprise-wide approach, it provides an excellent platform that can easily be enhanced to focus on risk management as part of performance measurement evaluations. Balanced scorecards measure an organisation’s progress toward achieving strategic goals, while ERM helps company leaders think through positive and negative factors that can affect the
achievement of their goals. The combination strengthens the likelihood of achieving strategic objectives.

The authors, Ciorciari & Blattner (2008) contends that, a generic balanced scorecard translates an organisation’s overall mission and strategy into specific, measurable operational and performance metrics across four perspectives, namely:

- Financial perspective;
- Customer perspective;
- Internal business processes perspective; and
- Learning and growth perspective.

Figure 1.1 depicts the Norton & Kaplan Balanced Scorecard.

**Figure 1.1: Norton & Kaplan Balanced Scorecard**

![Norton & Kaplan Balanced Scorecard](source)

*Source: Blattner & Ciorciari (2008:18)*

These four perspectives are designed to be integrated to achieve the enterprise’s vision and strategy. Learning and growth objectives are designed to enhance employee competencies and strategic awareness so that internal business processes are consistent with desired objectives. Better performance of internal business processes should lead to greater customer satisfaction, which then leads to improved financial performance, enabling the achievement of an entity’s goals and objectives based on financial performance.
1.3. LITERATURE REVIEW

1.3.1. INTRODUCTION

A literature study is the process of finding, examining and analysing information that is already available (Andersson, Franzén, & Fries, 2008). In this research the secondary sources of data such as the interviews and journals will have a particularly important role, since it will be essential for the foundation of the analysis. After all, the theories extracted from the literature study will serve as framework for making comparisons between data collected from the primary sources and existing theories. As the empirical study proceeds, the theoretical framework will be complemented and revised. The main sources for information will be databases of academic and business articles and books, whereof some will be accessed through internet based libraries.

This research study further examines business process management maturity models identified through a literature review; attributes commonly used in these models are described in detail in the following sub-sections.

1.3.2. ATTRIBUTES COMMONLY USED IN MODELS

The Hillson model (2006) and International association for Contract and Commercial Management (IACCM) model (2002) each have four assessment criteria whereas the Risk Management Society (RIMS) model (2006) has seven criteria (refer to Table 2.4). These models’ criteria (also referred herein as “attribute”) are briefly discussed, after being compared with one another, to determine which criteria should be used when measuring an organisation’s risk maturity levels. Additionally, when scrutinising the literature, it seemed as though some of the apparently different criteria addresses the same concepts, and as such, even though different terminology is used, these criteria can be meaningfully combined (Coetzee & Lubbe, 2013:48). Lastly, it should be noted that the RIMS (2006) model consist of various documents explaining the different areas addressed in the model in greater depth: there is a matrix summarising the risk maturity levels, a matrix explaining the criteria, a matrix explaining the deliverables, and a comprehensive document providing a list of the criteria and linking these to the deliverables (Coetzee & Lubbe, 2013:48). For the purpose of this research, a comprehensive analysis and comparison of the various risk maturity models is carried out in Chapter 2.
1.3.3. EXPLORATION OF MATURITY MODELS

1.3.3.1. Model 1: Risk Maturity Model

Hillson’s (2006) Risk Maturity Model (RMM) is the first notable attempt to develop a framework for a risk maturity model. It serves as a foundation for many of the subsequent maturity models such as Risk Management Maturity Model (RMMM), RMMM adapted to the Construction Industry, International Association for Contract and Commercial Management (IACCM) Business Risk Management Maturity Model and Risk Management Capability Maturity Model for Complex Product Systems Projects. These models are further described in detail in the subsequent sub-sections (Öngel, 2009).

According to Hillson (2006), RMM is intended to serve the organisations wishing to implement a formal approach to risk management or to improve their existing approach. The main aim of the model is to provide a framework against which current risk management practice can be benchmarked (Öngel, 2009). The benchmarking is done in terms of maturity. The model assist organisations to assess their current level of risk management capability and maturity, identify targets for improvement and to devise strategies for developing or enhancing their risk management capability maturity level. Strategies to move to the next level of maturity are also suggested. The RMM has four levels of capability maturity, each linked to specific attributes. These are: **Level 1**: Naive, **Level 2**: Novice, **Level 3**: Normalised and **Level 4**: Natural. Each RMM level is briefly described in Chapter 2.

As claimed by Hillson (2006), to achieve a more detailed diagnostic tool required for objective and consistent assessment of risk management process maturity, four attribute headings are integrated to the system: **Culture, Process, Experience** and **Application**. With this breakout, clear criteria that had been accepted by numerous risk management organisations were attempted to be utilised in the assessment. The barriers faced by organisations when attempting to progress to the next level of maturity were also given by the author and some strategies were suggested for overcoming them.
1.3.3.2. Model 2: Project Management Maturity Models

The Project Management Maturity Model (PMMM) is intended for diagnosing the maturity of the project management processes of an organisation. Its focused view is processes, which constitutes the main difference of the model from the other investigated models (Öngel, 2009).

According to Öngel (2009), this model was developed to assist organisations in improving their project management processes by providing a conceptual framework. As Öngel (2009) continues, it has become the industry standard in measuring project management maturity. Furthermore, it serves for improvement by mapping out a logical path and to track progress. The Project Management Book of Knowledge (PMBoK) Guide’s nine knowledge areas and the Software Engineering Institute (SEI)’s five levels of maturity were utilised in this model. The knowledge areas are: Project Integration Management, Scope Management, Time Management, Cost Management, Quality Management, Project Human Resource Management, Communications Management, Risk Management and Procurement/Vendor Management. Five levels of maturity are; Level 1: Initial Process, Level 2: Structured Process and Standards, Level 3: Organisational Standards and Institutionalised Process, Level 4: Managed Process and Level 5: Optimising Process (Öngel, 2009).

For each maturity level, along with a brief general description of the characteristics, more detailed descriptions are provided for each component at each maturity level. Through use of the descriptions in risk management knowledge area, a matrix of maturity levels and components was produced accordingly. Each Project Management Maturity level is briefly described in Chapter 2.

1.3.3.3. Model 3: Project Management Institute’s Risk Management Maturity Model

According to Öngel (2009), this model is an elaboration of the initial work accomplished by Hillson, which is presented in 1.3.1.2, to enhance its diagnostic elements and to further aid in identification of the current level at which an organisation is operating. As claimed by Öngel (2009), this is a simplified maturity model designed to quickly target weaknesses and is applicable to all types of projects and all types of organisations in any industry, government or commercial sector.
The naming of the levels has been changed but the basic structure remained the same with Hillson’s model. The maturity levels of Risk Management Maturity Model (RMMM) are: **Level 1**: Ad-Hoc, **Level 2**: Initial, **Level 3**: Repeatable and **Level 4**: Managed. Also the four attribute headings were taken from the Hillson’s model, therefore the headings remained the same as: **Culture**, **Process**, **Experience** and **Application**. There are some elaborations made upon RMM, on the descriptions of the maturity levels and on the suggested strategies for moving to the next level. Each PMI’s RMMM level is briefly described in Chapter 2.

**1.3.3.4. Model 4: International Association for Contract and Commercial Management (IACCM) Business Risk Management Maturity Model**

The IACCM Business Risk Management Working Group (2003) designed a tool for the organisations to evaluate their level of maturity in the area of business risk management. According to Öngel (2009), IACCM Business Risk Management Maturity Model (BRM3) seeks to assist organisations in assessing whether their approach to risk management is adequate or not, to compare their approach with best practice or against their competitors and create an accepted benchmark for organisational risk management. The author also expressed the opinion that, the developer of RMM (Model 1) took part in this project and provided a framework to be utilised in this model. Accordingly, the basic structure of the framework is not so different from RMM and RMMM. Four levels of organisational business risk management maturity were utilised (i.e. **Level 1**: Novice, **Level 2**: Competent, **Level 3**: Proficient, **Level 4**: Expert) against four key attributes (i.e. **Culture**, **Process**, **Experience**, **Application**).

The model provides the maturity characteristics through a maturity level – attribute matrix which is presented in Chapter 2. However, instead of this general framework, a detailed questionnaire is provided as a set of tables, each row containing one characteristic within an attribute. For the culture section there are ten rows of characteristics. Similarly, it is eight for the process, six for the experience and seven for the application sections. Each characteristic is scored according to the maturity levels (1, 2, 3 or 4) and at the end, total attribute scores and maturity score of the organisation are achieved. The variation in the characteristic and attribute scores reflects the strengths and weaknesses of the
organisation. Thus, along with serving for the assessment of the maturity level of the organisation, the questionnaire (Appendix F) can also be used to set realistic targets for improvement, on the basis of the identified strengths and weaknesses.

1.3.3.5. Model 5: Capability Maturity Model (Level 5 Assessment Model)

The concept of maturity models is well developed and accepted. The Software Engineering Institute (SEI) at Carnegie-Mellon University has developed a Capability Maturity Model (CMM) for software engineering organisations. This defines five levels of increasing capability and maturity, termed: Initial (Level 1), Repeatable (Level 2), Defined (Level 3), Managed (Level 4) and Optimising (Level 5). Each level is clearly characterised and defined, enabling organisations to assess themselves against an agreed scale. Having discovered its CMM level, an organisation can then set clear targets for improvement, aiming towards the next level of capability and maturity (Öngel, 2009).

Although the SEI CMM is well established, its application is limited to organisations involved in software development processes. There have been several attempts to broaden the scope of the CMM to other types of project, but these have not gained widespread acceptance. Each CMM level is briefly described in Chapter 2.

1.3.3.6. Model 6: Risk Management Capability Maturity Model for Complex Product Systems Projects

According to Ren & Yeo, 2009), this model was built upon RMM, HVR Risk maturity model by Hopkinson & Lovelock (2009), RMMM and CMM. It offers a framework for complex product systems projects to benchmark the current approach in risk management against five standard levels of maturity. The tool allows for the assessment of the current level of the organisation, identify realistic targets for improvement and develop action plans for enhancing its risk management maturity. The model utilises the maturity levels of CMM, which are; Level 1: Initial, Level 2: Repeatable, Level 3: Defined, Level 4: Managed and Level 5: Optimising. As claimed by Ren and Yeo (2009), for the improvement of risk management maturity, the organisation must develop its capabilities in organisational culture (context), risk management process (process) and risk management knowledge/techniques (content) simultaneously. Accordingly, the tool defines three key
capability areas; Organisation Culture, Risk Management Process and Risk Management Knowledge/Technology. For each maturity level, the model defines major organisation culture characteristics, risk management process characteristics and knowledge characteristics, and a theoretical framework is obtained as in Chapter 2.

1.4. RESEARCH PROBLEM STATEMENT
All organisations face risk and uncertainty, both at the process and business levels, and there is an increasing recognition of the need for structured approaches to deal with risk and improving the existing risk capability. Risk maturity assessments can be used to assess the current level of maturity, identify realistic targets for improvement and produce action plans for developing or enhancing risk capability and maturity level.

From the introduction and observations by the researcher, it can be concluded that, “Liberty Life has not determined whether or not its existing risk management processes has achieved realistic targets for improvement. Thus, capability maturity of its current risk management process is unknown”. Accordingly, this forms the basis for formulating the research problem statement.

1.5. RESEARCH AIM, OBJECTIVES AND SCOPE
The primary aim of this research study is to identify, adapt and recommend based on previously developed maturity models analysed through a literature review, a risk management maturity model and related information, which is applicable and effective for Liberty Life. In order to achieve this aim, the following objectives were identified and explored in detail:

- To synthesize available literature and conduct a critical literature review to define risk management, capability maturity and identify business process maturity models given the current evidence.
- To provide a overview of the previously developed maturity models in the area of risk management and to determine their advantages and disadvantages by comparing and evaluating them in terms of their usability and effectiveness.
• To investigate the key attributes of a long-term insurance-specific risk management maturity model identified through a literature review.

• Through unstructured face-to-face interviews with the senior executives and risk managers within Liberty Life, to identify life insurance-specific key attributes essential for inclusion in the development of an appropriate and effective risk maturity model.

• To develop and propose a risk maturity model to Liberty Life based on the theory and survey conducted. Yimam (2011:99) have proposed a framework for development of a maturity model. The model proposed by this research has been developed following the framework proposed by Yimam (2011). The author’s proposed framework for developing a maturity model consists of six major steps, these being: Scope, Design, Populate, Test, Deploy and Maintain. Test, deploy and maintain steps fall outside the scope of this research study.

• To recommend that the usefulness and applicability of the proposed model be tested through a case study and search for improvement steps in the future.

1.6. RESEARCH RELEVANCE

This research is highly relevant to both practicing the business community and the academic community on the grounds that:

• Risk management is an emerging practice.

• King III and Solvency Assessment and Management (SAM) regime require risk management practices to be entrenched in the organisations.

• Risk management can add value to Liberty Life as indicated in Chapter 2. For example, Liberty Life can use the results of the maturity assessment as initial benchmark information in prioritising and designing improvement actions.

• Risk is currently seen as the avoidance of the downside, as opposed to also including the potential of the upside.

• South Africa is currently a global leader in governance and risk practices; this offers an opportunity to demonstrate that South Africa practices are globally applicable. Refer to Global Competitiveness Report: 2012 – 2013 (Schwab, 2012:407).
1.7. RESEARCH METHODOLOGY
This section briefly addresses the research story as employed in this study. Chapter 3 has been devoted to show a detailed report of the research methodology employed in this study. The research approach applied for this study consists of a comprehensive literature review with substantiated field research and data gathering. The collected data is analysed to identify the common attributes used in maturity models. In broader terms, the research strategy consists of:

- A literature review that would identify and rate the effectiveness of the risk maturity models, processes and techniques being applied across different industries;
- The evaluation of the usefulness and applicability of the common attributes identified for these models; and
- The development of a proposed risk maturity model for Liberty Life.

1.7.1. NATURE OF THE RESEARCH
Distinctions are usually made between different approaches when conducting research, the quantitative and the qualitative approach. Quantitative research is more formalised and structured, mainly focusing on transforming empirical data into numbers which are analysed using statistical procedures (Andersson, Franzén, & Fries, 2008), as opposed to qualitative methods, which are used when an explanation or understanding of a situation or phenomena, and the surrounding context is needed. Qualitative research aims to provide an in-depth understanding of the area of interest, based on the researcher’s own interpretation of detailed and information rich data (Andersson, Franzén, & Fries, 2008).

A qualitative research approach does not develop a hypothesis in advance of data gathering as the emphasis is on developing findings from the data with minimal theoretical or researcher bias. Further, the outcome of this research is not intended to be statistically generalisable findings; rather the aim is to develop in-depth insight into risk maturity that contributes to understanding of that subject. Thus, the research study is qualitative in nature. The research design of the study is exploratory.
The use of qualitative research methods are a dominant feature in risk management. Citing Leedy & Ormrod (2005) indicates that qualitative research methods serve among other purposes the following:

- they can reveal the nature of certain situations, settings, processes, relationships, systems or people;
- they enable the researcher to gain insights about the nature of a particular phenomenon, develop new concepts or theoretical perspectives about the phenomenon and discover the problems that exist within the phenomenon;
- they allow a researcher to test the validity of certain assumptions, theories or generalisations within real-world contexts; and
- they provide a means through which a researcher can judge the effectiveness of particular practices or innovations.

1.7.2. RESEARCH DESIGN

There are many qualitative and quantitative research designs including: action research; grounded theory; ethnography; phenomenology and case studies (Wamundila, 2008). This research utilised the case study design and according to Sampson (2010), case studies are: detailed investigations of individuals, groups, institutions or other social units…a case study attempts to analyse the variables relevant to the subject matter. The principal difference between case studies and other research studies is that the focus of attention is the individual case and not the whole population cases. …in a case study the focus may not be on generalisation but on understanding the particulars of that case in its complexity.

Wamundila (2008) also supports the views expressed by Sampson (2010) above and observes that the value of case studies is seen through its ability to facilitate “in-depth analysis” of the study unit. Further, Wamundila (2008) stresses the fact that case studies “offer a richness and depth of information not usually offered by other methods”. Case studies have often been used to study different issues in universities. For instance, Olsson, (2006) discussed a case study conducted at SFK Group, a leading worldwide manufacturer
and supplier of ball and roller bearings, to develop a model for risk assessment of the projects.

Qualitative case studies make use of different methods for data collection. The data collection methods include among others the reviewing of documents, interviews, as well as direct and participant observation (Wamundila, 2008). In this research study, a qualitative approach will be used to enhance the validity of the study. Data collection methods are elaborated in detail below.

1.7.3. DATA COLLECTION METHODS
The following data collection methods will be used:

- Review of documents/literature; and
- Unstructured face-to-face interviews.

1.7.3.1. Empirical Study – Interviews
Data is primarily gathered through a total of ten unstructured face-to-face interviews comprising open-ended questions, to be conducted during October 2013. An interview guide will be created where questions relating to the study objectives are raised. The advantages of using an interview guide as suggested by (Wamundila, 2008) include “study reliability while the freedom to pursue unexpected themes capitalises on the strengths of the case study”. The interviews of 30 minutes to 45 minutes long each will be conducted in the workplace, notes taken with permission by an experienced note-taker and transcribed verbatim. The anonymity of interviewees will be preserved (See Appendix A: Interview Guide Accompanying Sample Letter). Interviews will be completed in three stages to allow theoretical sampling, (Mauelshagen, 2012) whereby the focus of interview questions in each round was informed by data analysis of the previous stage(s). This approach will allow the researcher to focus on themes relevant to the research question as they emerged while remaining open to new variables. The three stages comprised: scoping interviews (two); first tranche of interviews (three) and second tranche of interviews (five). In each tranche, respondents will constitute a diagonal cross-section of the organisation, representing a broad section of hierarchical and functional divisions, from the senior executives and risk managers.
Unstructured interviews are most useful when the researcher seeks to gain an in-depth understanding of a particular phenomenon within a particular cultural context. In addition, they are most appropriate when the researcher is working within an interpretive research paradigm, in which the researcher would assume that reality is socially constructed by the respondents in the setting of interest. Based on this underlying assumption, the researcher seeks to understand the phenomenon of interest from the individual perspectives of those who are involved with it. If these are the researcher’s goals, then it is useful to allow the interview/conversation to be mutually shaped by the researcher and the interviewee. Imposing too much structure on the interview will inhibit the interviewee’s responses and the researcher is likely to come away with only an incomplete understanding of the phenomenon of interest (Zhang & Wildemuth, 2007).

However, since personal interviews might not be achievable in every case, the researcher intends to conduct unstructured telephone interviews when there are significant reasons to do so. Telephonic interviews will limit the interaction, but in return the researcher believes it will open up the possibility of including respondents that could not have participated in this study otherwise (Andersson, Franzén, & Fries, 2008). Telephonic interviews will be conducted, if necessary.

Unstructured interviews are not useful when the researcher already have a basic understanding of a phenomenon and wants to pursue particular aspects of it. If the research goals have been well-defined, then the researcher can use other methods (e.g., unstructured, semi-structured interviews or surveys) to collect the needed data more efficiently (Zhang & Wildemuth, 2007).

1.7.4. UNIT OF ANALYSIS
The units of analysis for this study are senior executives and risk managers. Ten interviewees will be chosen based on two criteria: (1) responsibility for risk measurement or risk management process and (2) an interest in improving the risk assessment process. It is envisaged that the latter criterion will improve quality of the interviews, as interest was likely to be there throughout the process.
1.7.5. SAMPLING APPROACH

According to (Wamundila, 2008), “well developed sampling decisions are crucial for any study’s soundness”. (Creswell, 2003:185) notes that “the idea behind qualitative research is to purposively select respondents or sites (or documents or visual materials) that will best assist the researcher to understand the principles and research questions”. In qualitative research, only a sample (that is, a subset) of a population is selected for any given study. The study’s research objectives and the characteristics of the study population (such as size and diversity) determine which and how many people to select. In this section, the researcher briefly describes three of the most common sampling methods used in qualitative research: purposive sampling, quota sampling, and snowball sampling (see Figure 1.2). The explanations below are meant to assist the reader to understand the reasons for using each method.

![Diagram of Sampling Techniques](source)

**Figure 1.2: Sampling Techniques in Qualitative Research**

Purposive and quota sampling are similar in that they both seek to identify respondents based on selected criteria. However, quota sampling is more specific with respect to sizes and proportions of subsamples, with subgroups chosen to reflect corresponding proportions in the population. If, for example, gender is a variable of interest in how people experience HIV infection, a quota sample would seek an equal balance of HIV-positive men and HIV-positive women in a given city, assuming a 1:1 gender ratio in the population. Studies employ purposive rather than quota sampling when the number of respondents is more of a target than a steadfast requirement – that is, an approximate rather than a strict quota (Jawale, 2012).
Purposive sampling, one of the most common sampling strategies, groups respondents according to preselected criteria relevant to a particular research question (for example, HIV-positive women in Capital City). Sample sizes, which may or may not be fixed prior to data collection, depend on the resources and time available, as well as the study’s objectives. Purposive sample sizes are often determined on the basis of theoretical saturation (the point in data collection when new data no longer bring additional insights to the research questions). Purposive sampling is therefore most successful when data review and analysis are done in conjunction with data collection. Quota sampling, sometimes considered a type of purposive sampling, is also common. In quota sampling, the researcher decides while designing the study how many people with which characteristics to include as respondents. Characteristics might include age, place of residence, gender, class, profession, marital status, use of a particular contraceptive method, HIV status, etc. (Jawale, 2012).

A third type of sampling, snowballing – also known as chain referral sampling – is considered a type of purposive sampling. In this method, respondents or informants with whom contact has already been made use their social networks to refer the researcher to other people who could potentially participate in or contribute to the study. Snowball sampling is often used to find and recruit “hidden populations,” that is, groups not easily accessible to researchers through other sampling strategies.

The study has employed mixed methods research. The sampling methods used for this study are purposive and quota sampling. However, the purposive sampling is dominant in this research.

**1.7.6. DATA VALIDITY AND RELIABILITY**

In terms of reliability, this research ensured that it was achieved through the use of an interview guide where the same pattern of questioning was made on each interviewee. Thus, in as far as reliability of data collected was concerned, there was consistency. Further, every step was undertaken to ensure that extensive notes are taken during the interviews by an experienced notes taker. Therefore, it is possible that if another researcher undertook this research under similar conditions, they would be able to arrive at the findings
that have been obtained in this study. Thus, it is possible to replicate the data collection methodology (Wamundila, 2008:110).

1.8. RESEARCH LIMITATIONS AND ASSUMPTIONS

Limitations associated with case study research will also apply to this research. Generalisation of the research results is not likely possible since there is no randomisation of the subjects participating in this research. Secondly, the small number of respondents will also limit the ability to infer general theories about the relationships between risk maturities. Thirdly, maturity models that have been used to determine attributes of the risk maturity models may not be entirely comprehensive as there could be some of the readily accessible models that may not have been considered when developing the risk maturity model, and it is probable that there are other models in private use that might be more effective. Fourthly, the proposed risk maturity model developed in the empirical study is not empirically tested nor refined by submitting it to outside experts for their assessment. Furthermore, no specific in-depth investigation into the risk maturity level was conducted for Liberty Life. And lastly, risk maturity studies are often qualitative in nature as opposed to the data being recorded which is statistical in nature (Tillman, 2011:90).

1.9. RESEARCH ETHICAL CONSIDERATION

The ethics of science is concerned about what is wrong and what is right during the execution of the research study. Research forms part of the human conduct, it therefore follows that such conduct has to conform to generally accepted norms and values. In any sphere of human life, certain kinds of conduct are generally acceptable, whereas others are not (Mouton, 2011).

Researchers are often faced with ethical concerns while planning their research, seeking access to organisations or to individuals, data collection, analysis and reporting of their data. Mouton (2011) quotes a definition of ethics as “moral principles, norms or standards of behaviour that guide moral choices about our behaviour and our relationships with others”. Research Ethics considers the suitability of the researcher’s behaviour in relation to the rights of cases who become the subject of, or are affected by the research study (Mouton, 2011).
The authors, Saunders, Lewis, & Thornhill (2007) identified key ethical concerns which arise throughout the research study; some of these include:

- Privacy of possible and actual respondents.
- Voluntary nature of participation and the right to withdraw partially or completely from the process.
- Consent and possible deception of respondents.
- Maintenance of the confidentiality of data provided by individuals or identifiable respondents and their anonymity.
- Reactions of the respondents to the way in which data is collected.
- Effects on the respondents to the way, in which data is used, analysed and reported on.
- The behaviour and objectivity of the researcher.

The researcher will adhere to ethical standards throughout the research process, whereby consideration is given to maintaining fairness, honesty, protection from any harm, a right to privacy, openness of intention of the study, respect for the integrity of the respondents and the informed willingness of the respondents to participate voluntarily in the research study (Leedy & Ormrod, 2005).

1.10. STRUCTURE OF THE RESEARCH REPORT

This research report is composed of five chapters, of which this Introduction is the first followed by the chapters elaborated below.

**Chapter 2:** Provides the foundation of the study and presents a review of the relevant literature. Current work on risk governance, risk culture and risk management maturity are described and critiqued. The theory chapter explicates the theory of risk management, capability maturity models and the historical development of the approach from the traditional financial risk management until today’s risk management.

**Chapter 3:** Describes the methodology and method used during the empirical research. This research followed a qualitative methodology. The researcher conducts a qualitative research, in the form of an in-depth case study. Unstructured face-to-face interviews are
held with senior executives and risk managers individually in order to gather data regarding what they perceive as important elements of appropriate risk maturity model and acceptable measurement criteria for their organisation.

**Chapter 4:** The data collected is analysed. The emergent themes are described and presented in the table giving examples of underlying data. The results of this section provide answers to research questions.

**Chapter 5:** Finally, revisions made on the proposed risk maturity model are explained along with the reasons prompted them. The final chapter presents brief outline of the study and the summary of findings, bottlenecks of the study, and a discussion of how this study can be utilised for future research. Additionally, the strengths and weakness of this research are evaluated and suggestions for further research to develop the subject are outlined.

**1.11. CHAPTER SUMMARY AND CONCLUSION**

This chapter provides an overview of the research study. It also provides the context within which the study was determined. It also presented the problem for the study, the aims and objectives, and an overview of the research design and methodology used in the study. This chapter further provides an insight of the other chapters that constitute the research study. Finally, in this chapter, a brief overview of how business process maturity models evolved over the years and the importance of risk management for organisations to achieve their strategies is given. In it further stated in this chapter that the ultimate goal of this research study would be to identify, customise and recommend a risk maturity model, which is easily applicable and effective for Liberty Life, based on the previously developed risk management maturity models and related information.

In the next chapter, a comprehensive literature review will be undertaken to learn more about the identified problem areas. This will be based on most recent articles and books on strategic management, business process maturity models, financial management and risk management. Following this literature study, an empirical study will be conducted amongst the senior executives and risk managers within Liberty Life to solicit their views and input on
how risk management is applied in their organisation and key attributes suited for their organisation for possible prioritisation and inclusion in the recommended risk maturity.
This chapter is comprised of the issues obtained from the literature review, which are presented under five main sections. First section covers the definition of risk, risk management and related topics, and also explores characteristics of risk immature and mature organisation, its benefits and integration. In the second section are explained the processes of risk management, while the third section is dedicated to the maturity concept with an insight to maturity models and risk management maturity. Previously developed business process maturity models are introduced. In pursuit of that, life insurance specific regulatory issues and business process maturity models are presented. The chapter is concluded with inferences drawn from the literature review, focusing on the comparison and evaluation of the reviewed risk management maturity models, to shed the light on the research objectives and questions.

2.1. EXPLORING THE CONCEPT OF RISK AND RISK MANAGEMENT

2.1.1. DEFINITION OF CONCEPTS

In this section, first of all, the issues of risk and uncertainty, risk sources and risk management are explained with various definitions. Following that, in pursuit of a succinct look to the history and research of risk management, benefits of risk management are explored. Finally, the integration of risk management with other management functions is briefly described.

2.1.1.1. Defining Risk, Uncertainty and Opportunity

The concept of a Risk is neither new nor revolutionary; it is part of everyday activities both in and out of business; however, Risk Management and Enterprise Risk Management (ERM) is not the same thing (Tillman, 2011). The difference is not simple one of singular v/s plural; it is more akin to unique v/s aggregate. Risk Management is concerned with the management of individual risks that may appear anywhere in an organisation; ERM is concerned with risks that appear everywhere in the organisation and have material impact.
to the objectives of the organisation. ERM has evolved from the management of risk within an organisation’s lower level – the silo – such as a business unit or a division, to the comprehensive management of risk utilising an integrated approach with common factors to ensure global acceptability. Some organisations refer to ERM as Integrated Risk Management (IRM) (Tillman, 2011:6-7). Tillman (2011) further argues that the responsibility of overseeing risk management falls on the board of directors, while the ownership responsibility for ERM falls on the chief executive officer (CEO) and senior executives. In everyday language, the word “risk” is used to describe the danger and uncertainty related to the possibility of an adverse event (Liuksliala, 2012:13). In professional use, the term is used with more diversity, often linked to the specific context of use. However, both individuals and organisations take measures to control uncertainty in order to achieve objectives. These measures are known as “risk management”.

Despite decades of scientific research and discussion, there is no general agreement concerning the exact definition of “risk”. Moreover, the situation is further complicated by the fact that the concept of “risk” has been employed by various scientific disciplines, such as economics, insurance and engineering sciences. Each one of these disciplines use the concept fitted to the needs of their own theoretical frameworks (Liuksliala, 2012:13). For instance, in the insurance industry, “risk” is understood as a harmful event, which includes no potential “upside”, such as a hail storm or traffic accident. On the contrary, in the area of finance, risks have been traditionally regarded as opportunities, with a chance of both making a profit and losing money. The latter approach from the world of financial risk management has been brought to a wider use with the emergence of ERM. The terminological dispersion is further evidenced in a recent review of RM standards, which reveals that there are great differences in the way that “risk” is defined in different standards (Liuksliala, 2012:13).

Liuksliala (2012:13) classify risks in two categories: (1) pure and (2) speculative risks. Pure risks are risks with only adverse consequences. Correspondingly, speculative risks are risks with both upsides and downsides. In other words, speculative risks relate to decision making and the search for opportunities. Furthermore, pure risks can be divided into insurable and non-insurable risks.
2.1.1.2. Defining Likelihood and Consequences

Risks differ from one another in the sense of importance or noteworthiness. Expressions such as “degree of risk” (Liuksiala, 2012) and “level of risk” (e.g. ISO 31000:2009) are used in risk management literature to measure risks with regard to their importance. In a classical measurement of risk, two distinct dimensions are used to evaluate its significance: probability and consequences. “Consequences” refer to the effect of the risk, and correspondingly, “probability” refers to the associated likelihood of the occurrence. Correspondingly, in ISO 31000 level of risk is expressed in terms of the combination of consequences and their likelihood (ISO Guide 73:2009, definition 3.6.1.3).

Since “probability” is fundamentally a concept used in mathematics and statistics, other words have been employed to describe the degree of uncertainty. For instance, the word “likelihood” is preferred by some risk management practitioners, since mathematical concepts, such as “probability”, inherently indicate that the risk involved is measurable by an exact probability. Also ISO 31000 encourages the use of the concept “likelihood” when determining the uncertainty related to risks. According to Liuksiala (2012), in the context of ISO 31000, “probability” is used to express mathematical probability, as a number between 0 and 1.

Events can have negative impact, positive impact, or both. Events with a negative impact represent threats, which can prevent value creation or erode existing value. Events with positive impact may offset negative impacts or represent opportunities. Opportunities are the possibility that an event will occur and positively affect the achievement of objectives, supporting value creation or preservation. Management channels opportunities back to its strategy or objective-setting processes, formulating plans to seize the opportunities (COSO, 2004:8).

2.1.1.3. Risk Management Framework

According to ISO 31000 (ISO/IEC Guide 73) (the “Standard”), risk is the “effect of uncertainty on objectives” and an effect is a positive or negative deviation from what is expected. Uncertainty is defined in the same standard as a state or condition that involves a deficiency of information and leads to inadequate or incomplete knowledge or
understanding. In the context of risk management, uncertainty exists whenever the knowledge or understanding of an event, consequence or likelihood is inadequate or incomplete. Uncertainty is often modeled using statistical data (Liuksiala, 2012). However, using statistical data to estimate future probabilities has already for a while been subject to debate. The applicability of evaluating past occurrences to predict the future is problematic, since, among other reasons, the conditions that affected past events are constantly changing. In other words, even if there would be sufficient statistical data to evaluate probabilities with statistical significance, the statistics might not be applicable at all, since the particular phenomenon may not follow the same statistical pattern any longer (Liuksiala, 2012:14-15). Figure 2.1 reflect the framework approach in terms of ISO 31000 (ISO, 2009) diagrammatically.

**Figure 2.1: The Risk Management Process from ISO 31000:2009**

![Diagram of the Risk Management Process from ISO 31000:2009](Image)

*Source: Adapted from ISO 31000 (2009)*
“The structure of the standard is based on three pillars: the **principles**, **framework** and **process**. The text in the ISO 31000 standard is short, clear and relatively easy to understand. Nothing in the text is radically new and the principles describe good practices that are generally accepted” (Vandijck, 2009:2).

The Casualty Actuarial Society of America (CAS) states that risk management refers to “the discipline by which an organisation in any industry assesses, controls, exploits, finances and monitors risks from all sources for the purposes of increasing the organisation’s short and long term value to its shareholders” (Le Roux, 2010:29).

According to Le Roux (2010:29), the International Actuarial Association (IAA) defined risk management from an insurer perspective with a definition of being “concerned with the totality of systems, structures and processes within an insurer that identify, assess, treat, monitor, report and/or communicate all internal and external sources of risk that could impact on the insurer’s operations”.

Whilst the above definitions all represent different points of view on the concept of risk management, some commonality within the descriptions seems to emerge. To varying degrees the descriptions of risk management above speak to it being concerned with:

- a process, system or discipline
- that addresses the risks within an organisation
- through the identification, assessment, analysis, control and monitoring of risk

For the purposes of considering risk management in the context of insurance companies then, an adequate definition of risk management may be that risk management “**is the identification, assessment and treatment of all sources of risk within the insurer as well as the ongoing monitoring of risk and the reporting thereon through the use of systems, structures and processes**”.
2.1.1.4. Risk Governance

The American Committee of Sponsoring Organisations of the Treadway Commission (COSO), defines risk management as "a process, effected by an entity’s board of directors, management and other personnel, applied in strategy setting and across the enterprise, designed to identify potential events that may affect the entity, and manage risk to be within its risk appetite, to provide reasonable assurance regarding the achievement of entity objectives" (Le Roux, 2010:29).

It is essential that the framework is based on a mandate and commitment from the executive management. The design of a framework for managing risks in an organisation is based on an understanding of the internal and external context of the organisation (i.e. political, economic, social, technological, legal and environmental context). From this a policy statement must be developed, responsibilities defined, risk management integrated into the organisational processes of the organisation, the available resources for managing the risk identified and the internal and external reporting process outlined. Once the framework has been established the implementation of the framework and the process follows. The framework should be monitored and evaluated continuously to ensure continuous improvements (Vandijck, 2009:3). Figure 2.2 shows a COSO model of the Enterprise Risk Management (ERM).
The four objectives categories – strategic, operations, reporting, and compliance – are represented by the vertical columns, the eight components by horizontal rows, and an entity’s units by the third dimension. This depiction portrays the ability to focus on the entirety of an entity’s enterprise risk management, or by objectives category, component, entity unit, or any subset thereof (Havenga, 2006:17). During 2013, the Committee of Sponsoring Organisations (COSO) of the Treadway announced the release of the 2013 COSO update to its Internal Control-Integrated Framework. Accordingly, the revised framework falls outside the scope of this research study.

There is a very strong correlation between taking culture into account and successful ERM implementation. A research carried out by the Institute of Risk Management (IRM, 2012) indicates that little consensus has yet emerged amongst risk professionals on the best way to help the board approach the analysis of risk culture. Most organisations adopt informal evaluation techniques or avoid doing so at all. IRM is therefore offering the approach in this document as practical approach for addressing these challenges (IRM, 2012).
The prevailing risk culture within an organisation can make it significantly better or worse at managing these risks. Risk culture significantly affects the capability to take strategic risk decisions and deliver on performance promises. Organisations with inappropriate risk cultures will inadvertently find themselves allowing activities that are totally at odds with stated policies and procedures or operating completely outside these policies. An inappropriate risk culture means not only that certain individuals or teams will undertake these activities but that the rest of the organisation ignore, condones or does not see what is going on. At best this will hamper the achievement of strategic, tactical and operational goals. At worst it will lead to serious reputational and financial damage (IRM, 2012).

IRM (2012) has defined a Risk Culture Framework around which to analyse, plan and act to influence risk culture within any organisation. Figure 2.3 attempts to distil what is a complex and interrelated set of relationships into a simple and high level approach to analysing the various influences on risk culture.

![Figure 2.3: IRM Risk Culture Framework](Source: IRM, 2012)
Risk culture is the sum of multiple interactions. At the lowest level, each individual’s personal predisposition to risk contributes to their ethical stance, how they behave and make decisions. Group behaviours and the underlying organisational culture also influence risk culture (IRM, 2012).

2.2. HISTORY OF RISK MANAGEMENT

Risk management began to be studied after World War II. According to Dionne (2013), several sources, dates the origin of modern risk management to 1955-1964. The author observed that there were no books on risk management at the time, and no universities offered courses in the subject. The first two academic books were published by Mehr and Hedges and Williams and Hems in 1963 and 1964 respectively. The content of these books covered pure risk management, which excluded corporate financial risk (Dionne, 2013:2). In parallel, engineers developed technological risk management models. Operational risk partly covers technological losses; today, operational risk has to be managed by firms and is regulated for banks and insurance companies. Engineers also consider the political risk of projects.

Risk management has long been associated with the use of market insurance to protect individuals and companies from various losses associated with accidents (Dionne, 2013:2). Dionne (2013) suggests that, in 1982 Crockford wrote: “Operational convenience continues to dictate that pure and speculative risks should be handled by different functions within a company, even though theory may argue for them being managed as one. For practical purposes, therefore, the emphasis of risk management continues to be on pure risks.” According to this author, speculative risks were more related to financial risks than to the current definition of speculative risks.

Dionne (2013) further stated that, “New forms of pure risk management emerged during the mid-1950s as alternatives to market insurance when different types of insurance coverage became very costly and incomplete. Several business risks were costly or impossible to insure. During the 1960s, contingent planning activities were developed, and various risk prevention or self-protection activities and self-insurance instruments against some losses were put in place. Protection activities and coverage for work-related illnesses and accidents also arose at companies during this period.”
The use of derivatives as instruments to manage insurable and uninsurable risk began in the 1970s, and developed very quickly during the 1980s. It was also in the 1980s that companies began to consider financial management or portfolio management. Financial risk management has become complementary to pure risk management for many organisations. Financial institutions, including banks and insurance companies, intensified their market risk and credit risk management activities during the 1980s. Operational risk and liquidity risk management emerged in the 1990s (Dionne, 2013:3). International regulation of risk also began in the 1980s (Dionne, 2013:3). Financial institutions developed internal risk management models and capital calculation formulas to protect themselves from unanticipated risks and reduce regulatory capital. At the same time, governance of risk management became essential, integrated risk management was introduced, and the chief risk officer (CRO) position was created. The complementary to pure risk management for many companies. Financial institutions, including banks and insurance companies, intensified their market risk and credit risk management activities during the 1980s. Operational risk and liquidity risk management emerged in the 1990s (Dionne, 2013:3).

In the wake of various scandals and bankruptcies resulting from poor risk management, the Sarbanes-Oxley regulation was introduced in the United States in 2002, stipulating governance rules for companies. Stock exchanges, including the NYSE (New York Stock Exchange) in 2002 (Blanchard and Dionne, 2004), also added risk management governance rules for listed companies. However, all these regulations, rules, and risk management methods did not suffice to prevent the financial crisis that began in 2007. It is not necessarily the regulation of risks and governance rules that were inefficient, but rather their application and enforcement. It is well known that managers in various markets regularly skirt the regulation and rules. However, it seems that deviant actions had become much more common in the years preceding the financial crisis, a trend the regulatory authorities did not anticipate, notice, or, evidently, reprimand (Dionne, 2013:4).

2.3. MATURITY CONCEPT: BACKGROUND, MATURITY IN RELATION TO RISK MANAGEMENT

In this section, “maturity” as a concept is introduced. Explanations are given for the use of a maturity model, together with an insight to Software Engineering Institute (SEI)’s Capability
Maturity Model (CMM). Characteristics of immature and mature organisations are defined. Maturity research at Liberty Life and risk maturity relationship are discussed. Finally, six identified maturity models are presented in detail, which were used as a basis for this study.

2.3.1. RISK MATURITY DEFINED
The term Risk Maturity (“RM”) Model is used to refer to the level or performance of the RM architecture. “Maturity” is a quality that is achieved organically, in other words being “ripe” or “fully developed“(Liuksliala, 2012:18). However, in the case of “risk management maturity”, it is likely that a “mature” risk management architecture is before all a result of conscious efforts rather than chance or the natural evolution of things. In the risk management literature, “ERM” is sometimes used as a synonym for a fully mature RM, as a fulfillment of an implementation project. The word “implementation” is used to describe the pursuit for the aspired state of risk management that is built upon the principles of ERM. Semantically, “implementation” refers to conscious adaptation of certain elements (Liuksliala, 2012:19). In identifying the critical attributes required by the risk management process feasible to adapt to changes in the business, various maturity models will be examined.

In RM literature, there is no mutual agreement on what constitutes a fully “mature” or “implemented” risk management. ISO 31000 highlights, the RM framework needs to be continually upgraded to correspond the changes in internal and external contexts (ISO 31000:2009:13). Therefore it is questionable whether RM can be regarded as having achieved full maturity, since it is in a constant state of adaptation like the rest of the organisation (Hillson, 2010:50-51).

Risk maturity models are typically qualitative models, which aim at describing the current stage of implementation of ERM in an organisation. Risk maturity models typically consist of attributes, which are intended to describe essential characteristics for ERM, such as board commitment to RM. Different stages of maturity are assigned to the attributes to describe the level of progress.

2.3.2. BENEFITS OF A MATURE RISK MANAGEMENT PROCESS
According to the International Risk Management Institute (IRMI) (2009), almost all people and organisations strive to manage risk for three fundamental reasons (IVI, 2012):
• To protect resources from unexpected losses;
• To be prepared to seize opportunities; and
• To limit the degree and impact uncertainty.

With a mature Risk Management (RM) capability in place (IVI, 2012):
• All IT risks, including new and emerging risks, are regularly identified and effectively managed.
• RM is built into all relevant processes within the organisation. Risk management is integrated into Enterprise Risk Management (ERM) processes.
• RM budget and resources are allocated efficiently and effectively.
• RM is planned, tracked and monitored at the project, programme, and organisation levels; there is incorporation of lessons learned and feedback from RM.
• Key risks are known, their business impact is quantified, and appropriate risk handling strategies are in place.
• RM efficiency and effectiveness are confirmed in regular intervals.

According to IVI (2012), the higher the RM maturity level attained by an organisation, the more an organisation can leverage from the benefits of RM maturity.

2.4. RISK MATURITY MODELS

Risk management is not a simple concept; the reason being that each organisation devises its own, usually unique framework, consisting of different practices and activities, amongst other details. Organisations thus have to determine the quality and the quantity of activities to be implemented in order to determine whether risks are appropriately managed according to the wishes of its governing bodies and senior management, and whether the risk management process is in line with what is communicated to its stakeholders. This refers to the risk maturity of the organisation. The more effectively management has implemented the relevant activities and elements of the risk management framework, the more risk mature the organisation is (Coetzee & Lubbe, 2013:45-46).
2.4.1. MODEL 1: RISK MATURITY MODEL

The RMM has four levels of capability maturity, each linked to specific attributes. These are: Level 1: Naïve, Level 2: Novice, Level 3: Normalised and Level 4: Natural. Each RMM level is briefly described in Table 2.1. As claimed by Hillson (2006), to achieve a more detailed diagnostic tool required for objective and consistent assessment of risk management process maturity, four attribute headings are integrated to the system: **Culture, Process, Experience** and **Application**. With this breakout, clear criteria that had been accepted by numerous risk management organisations were attempted to be utilised in the assessment. The barriers faced by organisations when attempting to progress to the next level of maturity were also given by the author and some strategies were suggested for overcoming them. By the use of the descriptions in risk management knowledge area, a matrix of maturity levels and components was produced accordingly (Table 2.1).

<table>
<thead>
<tr>
<th>ELEMENT</th>
<th>MEASUREMENT CRITERIA</th>
<th>MEASUREMENT DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Naïve</td>
<td></td>
<td>● Unaware of the need for management of risk.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>● No structured to dealing with uncertainty.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>● Repetitive and reactive management processes.</td>
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<tr>
<td></td>
<td></td>
<td>● Little or no attempt to learn from past or to prepare for future.</td>
</tr>
<tr>
<td>Novice</td>
<td></td>
<td>● Experimenting with risk management (RM) through a small number of individuals.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>● No generic structured approach in place.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>● Aware of potential benefits of managing risk, but ineffective implementation, not gaining full benefits.</td>
</tr>
<tr>
<td>Normalised</td>
<td></td>
<td>● Management of risk built into routine business processes.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>● RM implemented on most or all projects.</td>
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<tr>
<td></td>
<td></td>
<td>● Formalised generic risk process.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>● Benefits understood at all levels of the organisation, although not always consistently achieved.</td>
</tr>
<tr>
<td>Natural</td>
<td></td>
<td>● Risk-aware culture, with proactive approach to RM in all aspects of the business.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>● Active use of risk information to improve business processes and gain competitive advantage.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>● Emphasis on opportunity management (&quot;positive risk&quot;).</td>
</tr>
<tr>
<td>Naïve</td>
<td></td>
<td>● No risk awareness.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>● Resistant/reluctant to change.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>● Tendency to continue with existing processes.</td>
</tr>
<tr>
<td>ELEMENT</td>
<td>MEASUREMENT CRITERIA</td>
<td>MEASUREMENT DESCRIPTION</td>
</tr>
<tr>
<td>---------</td>
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<td>-------------------------</td>
</tr>
<tr>
<td>PROCESS</td>
<td>Naïve</td>
<td>No formal processes</td>
</tr>
<tr>
<td></td>
<td>Novice</td>
<td>Risk process may be viewed as additional overhead with variable benefits.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>RM used only on selected projects.</td>
</tr>
<tr>
<td></td>
<td>Normalised</td>
<td>Accepted policy for RM.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Benefits recognised and expected.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Prepared to commit resources in order to reap gains.</td>
</tr>
<tr>
<td></td>
<td>Natural</td>
<td>Top-down commitment to RM, with leadership by example.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Proactive RM encouraged and rewarded.</td>
</tr>
<tr>
<td>EXPERIENCE</td>
<td>Naïve</td>
<td>No understanding of risk principles or language.</td>
</tr>
<tr>
<td></td>
<td>Novice</td>
<td>Limited to individuals who may have had little or no formal training.</td>
</tr>
<tr>
<td></td>
<td>Normalised</td>
<td>In-house core of expertise, formally trained in basic skills.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Development of specific processes and tools.</td>
</tr>
<tr>
<td></td>
<td>Natural</td>
<td>All staff risk-aware and using basic skills.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Learning from experience as part of the process.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Regular external training to enhance skills.</td>
</tr>
<tr>
<td>APPLICATION</td>
<td>Naïve</td>
<td>No structured application, no dedicated resources and risk tools.</td>
</tr>
<tr>
<td></td>
<td>Novice</td>
<td>Inconsistent application.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Variable availability of staff.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ad hoc collection of tools and methods.</td>
</tr>
<tr>
<td></td>
<td>Normalised</td>
<td>Routine and consistent application to all projects.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Committed resources and integrated set of tools and methods.</td>
</tr>
<tr>
<td></td>
<td>Natural</td>
<td>Second-nature, applied to all activities.</td>
</tr>
<tr>
<td>ELEMENT</td>
<td>MEASUREMENT CRITERIA</td>
<td>MEASUREMENT DESCRIPTION</td>
</tr>
<tr>
<td>---------</td>
<td>----------------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Risk-based reporting and decision-making.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• State-of-the-art tools and methods.</td>
</tr>
</tbody>
</table>

(Source: Adapted from Öngel, 2009)

2.4.2. MODEL 2: PROJECT MANAGEMENT MATURITY MODEL BY PROJECT MANAGEMENT SOLUTIONS

The Project Management Maturity Model (PMMM) by Project Management Solutions is intended for diagnosing the maturity of the project management processes of an organisation. Its focused view on the processes constitutes the main difference of the model from the other investigated models. According to Coetzee & Lubbe (2013), this model was developed to assist organisations in improving their project management processes by providing a conceptual framework. As Coetzee & Lubbe (2013) continues, it has become the industry standard in measuring project management maturity. Furthermore, it serves for improvement by mapping out a logical path and to track progress.

Five levels of maturity are; **Level 1**: Initial Process, **Level 2**: Structured Process and Standards, **Level 3**: Organisational Standards and Institutionised Process, **Level 4**: Managed Process and **Level 5**: Optimising Process.

For each maturity level, along with a brief general description of the characteristics, more detailed descriptions are provided for each component at each maturity level. By the use of the descriptions in risk management knowledge area, a matrix of maturity levels and components was produced accordingly (Table 2.2).
Table 2.2: Component-Maturity Matrix

<table>
<thead>
<tr>
<th>ELEMENT</th>
<th>MEASUREMENT CRITERIA</th>
<th>MEASUREMENT DESCRIPTION</th>
</tr>
</thead>
</table>
| RISK IDENTIFICATION | Level 1       | • Risks are not identified as a standard activity.  
• There is reaction to risks when the risk is already a current problem versus a future possibility. |
| RISK IDENTIFICATION | Level 2       | • Organisation has a documented process for identifying project risks, but it is used only for large, highly visible projects.  
• A conscious effort to identify total project risks - Input from key stakeholders is also considered in discussions.  
• To help identify the risks; scope statement, Work Breakdown Structure (WBS), a more detailed project schedule and cost estimate are used.  
• Procurement and staff management plans are also examined.  
• Top-level risks are included in project plan.  
• Expert judgment and known industry lessons are used. |
| RISK IDENTIFICATION | Level 3       | • A documented, repeatable process exists.  
• Documentation exists on all processes and standards.  
• Expanded with checklists, automated forms, etc.  
• Risk triggers are also identified.  
• Interrelationships among related projects are also considered.  
• Input from past, similar projects, lessons learned, key stakeholders are all consolidated and integrated. |
| RISK IDENTIFICATION | Level 4       | • Integrated with the cost management and time management processes and the project office.  
• Made within individual project, within programs and between projects and programs. |
| RISK IDENTIFICATION | Level 5       | • An improvement process is in place.  
• Lessons learned are being captured.  
• Includes a method to identify an organisational priority for the project. |
| RISK QUANTIFICATION   | Level 1       | • The impact of the somehow identified risks on the project is speculated without any analysis, forethought, and standard approach/process. |
| RISK QUANTIFICATION   | Level 2       | • A more structured approach to quantifying risks.  
• A standard methodology to consistently assess the risk items.  
• May include; low-medium-high ratings or expected monetary value of risks using simple probability and value calculations.  
• Employ more objective approaches to quantify the probability and impact of the risks.  
• Evaluation still on a project-by-project basis. |
<table>
<thead>
<tr>
<th>ELEMENT</th>
<th>MEASUREMENT CRITERIA</th>
<th>MEASUREMENT DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>• Risks are prioritised based on a single factor.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• More advanced procedures to quantify risks.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Multiple criteria to prioritise risk items.</td>
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<tr>
<td></td>
<td></td>
<td>• The entire process is fully documented and repeatable.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Range predictions, optimal calculations using simulation tools and decision trees, weighted average calculations.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Risks are prioritised based on multiple factors like Expected Monetary Value (EMV), criticality, timing, risk type.</td>
</tr>
<tr>
<td>Level 3</td>
<td></td>
<td>• Integrated with cost management, time management, finance/accounting, strategic planning processes and project office.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• The risks on other projects and other parts of the organisation are also considered.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Risks are evaluated on an organisational basis.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Performance indices can be used (to calculate the impact of risk on a project).</td>
</tr>
<tr>
<td>Level 4</td>
<td></td>
<td>• An improvement process is in place.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Cost and schedule impacts are adequately captured.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Lessons learned are being captured.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Management uses the quantified risks to make decisions regarding the project.</td>
</tr>
<tr>
<td>Level 5</td>
<td></td>
<td>• Risks are considered as they arise.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Determination of mitigation strategies or contingency plans for future is seldom.</td>
</tr>
<tr>
<td>Level 1</td>
<td></td>
<td>• Informal gatherings on the strategies to deal with the risk events.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• A risk management (RM) plan that documents the procedures to manage risk.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Contingency plans for near-term risks and mitigation strategies for large projects.</td>
</tr>
<tr>
<td>Level 2</td>
<td></td>
<td>• Templates are used.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Contingency plans and mitigation strategies are identified for each risk item.</td>
</tr>
<tr>
<td>Level 3</td>
<td></td>
<td>• Integrated with cost management, time management, finance/accounting, strategic planning processes and project office.</td>
</tr>
<tr>
<td>Level 4</td>
<td></td>
<td>• Lessons learned are being captured.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• A process for tracking the use of project reserves is in place.</td>
</tr>
</tbody>
</table>
## PROJECT MANAGEMENT

<table>
<thead>
<tr>
<th>ELEMENT</th>
<th>MEASUREMENT CRITERIA</th>
<th>MEASUREMENT DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RISK CONTROL</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Level 1      |                       | • Day-to-day problem solving if a new risk event arises.  
                |                       | • No RM plan or additional risk response strategies.  |
| Level 2      |                       | • Apply their own approach to manage and control risks.  
                |                       | • Assign responsibility for each risk item as it occurs.  
                |                       | • Discussion of the risks in staff meetings.  
                |                       | • Risk status of large projects is tracked.  
                |                       | • There is a process to report risk status to key stakeholders.  
                |                       | • A risk log, periodic meetings.  
                |                       | • Tracking changes and incorporating into the project schedule.  |
| Level 3      |                       | • Fully developed process, project risks are actively, routinely tracked.  
                |                       | • Corrective actions are taken, RM plan is updated and metrics are used.  |
| Level 4      |                       | • Integrated with organisation’s control systems, monitoring programs, cost and time management.  |
| Level 5      |                       | • Risk assessments and the current risk status are utilised for management decisions.  |
| **RISK DOCUMENTATION** |                       |                         |
| Level 1      |                       | • No historical database on typical risks encountered and related experiences.  
                |                       | • Individuals rely upon their own past experiences and discussions with other team members.  |
| Level 2      |                       | • Some historical information about general tendencies in risk may have been collected.  
                |                       | • No typical and centralised method to collect historical information.  |
| Level 3      |                       | • A historical database of information such as common risk items and risk triggers.  |
| Level 4      |                       | • Historical database is expanded to include inter-dependency risks between projects.  |
| Level 5      |                       | • An improvement process is in place.  
                |                       | • Post-project assessments.  
                |                       | • Lessons learned are being captured.  |

(Source: Adapted from Öngel, 2009)
2.4.3. MODEL 3: RISK MANAGEMENT MATURITY MODEL

According to Öngel (2009), this model is an elaboration of the initial work accomplished by Hillson, which is presented as Model 1, to enhance its diagnostic elements and to further aid in identification of the current level at which an organisation is operating. As claimed by Öngel (2009), this is a simplified maturity model designed to quickly target weaknesses and is applicable to all types of projects and all types of organisations in any industry, government or commercial sector.

The naming of the levels has been changed but the basic structure remained the same with the Hillson (2006)’s model. The maturity levels of Risk Management Maturity Model (RMMM) are: **Level 1:** Ad-Hoc, **Level 2:** Initial, **Level 3:** Repeatable and **Level 4:** Managed. Also the four attribute headings were taken from the Hillson (2006)’s model, therefore the headings remained the same as; **Culture, Process, Experience** and **Application.** Framework of RMMM is constructed as in Table 2.3. There are some elaborations made upon RMM, on the descriptions of the maturity levels and on the suggested strategies for moving to the next level.

Table 2.3: Risk Management Maturity Model (RMMM)

<table>
<thead>
<tr>
<th>ELEMENT</th>
<th>MEASUREMENT CRITERIA</th>
<th>MEASUREMENT DESCRIPTION</th>
</tr>
</thead>
</table>
| **CULTURE** | Level 1 – Ad Hoc | • No risk awareness, risk management (RM) seen as a nuisance and peripheral activity with no relevance or value to core business objectives.  
• No upper management involvement or support.  
• Resistance and reluctance to adopt risk management (RM).  
• Tendency to continue with existing processes even in the face of project failure.  
• Managers do not want to hear about problems. Many undiscussable problems.  
• People are punished for communicating bad news.  
• Secretive inward looking – no stakeholder communication. |
| | Level 2 – Established | • Risk processes are viewed as a compliance requirement and an additional overhead with variable practical benefits.  
• Scepticism of ability of RM to add value to organisation.  
• Focus on downside of risk.  
• RM system is primarily for public relations purposes but |
<table>
<thead>
<tr>
<th>ELEMENT</th>
<th>MEASUREMENT CRITERIA</th>
<th>MEASUREMENT DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>not implemented.</td>
<td>• Upper management encourages but does not require RM.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Little communication with stakeholders.</td>
</tr>
<tr>
<td>Level 3 – Managed</td>
<td>• Benefits of RM recognised, accepted and proven. Focus on upside and downside of risk.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Upper management requires risk reporting.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Bad news risk information is accepted.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Informal communication channels to top management.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Effective communication with stakeholders.</td>
</tr>
<tr>
<td>Level 4 – Integrated</td>
<td>• RM widely seen as a core business function.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Risk is an instinctive and automatic way of thinking for all employees at all levels of organisation.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Open flows of information and trusting relationships with business partners along entire supply chain.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Collective responsibility for risks and opportunities along supply chain.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• No blame culture – acceptance of mistakes.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Formal communication channels to top management.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• External stakeholders actively encouraged through formal mechanisms to participate in business decisions.</td>
</tr>
<tr>
<td>Level 1 – Ad Hoc</td>
<td>• No structured and documented approach to deal with risk.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• No formal processes. No RM plan. Reactive management of risks.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Over reliance on insurance as a substitute for effective RM.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• A policy of risk transfer to weaker parties through contractual mechanisms.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Internal business processes actively create risks.</td>
</tr>
<tr>
<td>Level 2 – Established</td>
<td>• Project-based RM systems with little inter-relationships.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• No generic risk processes and no RM planning across projects.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• RM processes inconsistent across different management systems.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• No attention to reducing risk exposure created by internal business processes.</td>
</tr>
<tr>
<td>Level 3 – Managed</td>
<td>• Generic RM processes widely communicated and implemented on most projects and common across different management systems.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Risks metrics collected to support basic quantitative analysis.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• A policy of risk fairness in contracts rather than risk transfer.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Steps activity taken to reduce risk in products, services, business and production processes.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Use of external experts and services in RM.</td>
</tr>
<tr>
<td>ELEMENT</td>
<td>MEASUREMENT CRITERIA</td>
<td>MEASUREMENT DESCRIPTION</td>
</tr>
<tr>
<td>---------</td>
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</tr>
</tbody>
</table>
|         | Level 4 – Integrated | • Risk-based organisational processes at all levels and functions of organisation.  
• Well-developed, tested and refines RM procedures.  
• Regular monitoring, evaluation, auditing and improvement of processes.  
• Management of risk built into all organisational processes and consistent across all management systems.  
• Wide range of reliable risk metrics covering whole risk portfolio collected and analysed systematically.  
• Processes reflect good principles of RM/transfer – re; pricing, capability, resources must be appropriate to risk.  
• Diversification and portfolio strategies in place.  
• Computerised inventories of plant, employees, products and capabilities.  
• Business continuity planning, crisis management and emergency systems in place and regularly tested – backed up by technical redundancy.  
• Regular legal and financial audits of threats and opportunities undertaken.  
• Dedicated research on hidden opportunities and threats.  
• Critical follow up and learning from incidents. |
|         | Level 1 – Ad Hoc     | • Unaware of the need for RM.  
• Little or no attempt to learn from past projects. |
|         | Level 2 – Established | • Experimenting with RM through a small number of enthusiastic individuals.  
• Aware of potential benefits of managing risk but no effective implementation.  
• Staff tends to react to risks as and when they arise. |
|         | Level 3 – Managed    | • Benefits of RM understood at all organisational levels and along supply chain, although not consistently.  
• Key internal stakeholders and suppliers can participate in RM process.  
• Proactive approach to risk when making decisions. |
|         | Level 4 – Integrated | • Risk awareness applied proactively in making all decisions.  
• Risk awareness instilled throughout all organisational levels and along entire supply chain.  
• Active use of risk feedback to improve organisational processes and gain competitive advantage.  
• Collective responsibility for risk along entire supply chain. Key suppliers, external and internal stakeholders and customers participate in RM process. |
<table>
<thead>
<tr>
<th>ELEMENT</th>
<th>MEASUREMENT CRITERIA</th>
<th>MEASUREMENT DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SKILLS/EXPERIENCE</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level 1 – Ad Hoc</td>
<td>● No understanding of RM language or principles.</td>
<td></td>
</tr>
</tbody>
</table>
| Level 2 – Established | ● Basic understanding of RM language or principles in organisational pockets.  
● Limited to individuals who have had little or no formal training.  
● No analysis capability apart from some basic qualitative analysis by individual managers. | |
| Level 3 – Managed | ● Widespread understanding of RM language or principles.  
● Qualitative analysis is widely practiced and some basic quantitative analysis. | |
| Level 4 – Integrated | ● Intimate and developing understanding of RM language or principles and how it applies to organisation’s business.  
● Where appropriate, complex quantitative analysis is possible using sophisticated probabilistic and simulation techniques.  
● State of the art tools and methods in use.  
● Evolving corporate memory of and learning about past risks and opportunities. | |
| **IMAGE** | | |
| Level 1 – Ad Hoc | ● Reputation for poor RM associated with cost overruns, delays, poor safety, and poor quality on projects. | |
| Level 2 – Established | ● Perception of competence but unreliability associated with variable performance and well publicised problems on contracts spreading between clients. | |
| Level 3 – Managed | ● Reputation for effective RM consistency of service, and product quality based on well publicised and widely implemented RM system. | |
| Level 4 – Integrated | ● Reputation for excellent RM acquired from successful completion of high-risk projects.  
● Company attracts educated clients which are sophisticated in RM and expect same standards.  
● Customers have confidence that organisation can take on higher risks than competitors.  
● Added value to customers often added by emphasis on upside as well as down side of risk.  
● Major efforts in public relations and stakeholder management. | |
| **APPLICATION** | | |
| Level 1 – Ad Hoc | ● No or very few managers practice RM. | |
| Level 2 – Established | ● RM applied inconsistently in response to customer demands and practiced on selected projects depending on knowledge of managers on those projects. | |
| Level 3 – Managed | ● RM applied consistently across systems and levels but needs continuous support and leadership to maintain.  
● RM focused on operational risks. | |
<table>
<thead>
<tr>
<th>ELEMENT</th>
<th>MEASUREMENT CRITERIA</th>
<th>MEASUREMENT DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONFIDENCE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level 4 – Integrated</td>
<td>• RM training.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• RM consistently and systematically implemented on all projects and across all management systems.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Enthusiasm for value of system develops its own momentum for continuous improvement.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• RM applied to broad range of risks – political, reputational, strategic, commercial and operational.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Regular RM training to all staff.</td>
<td></td>
</tr>
<tr>
<td>Level 1 – Ad Hoc</td>
<td>• Fear of RM.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• No experience in implementing risk procedures.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• No confidence in identifying, analysing and controlling risks.</td>
<td></td>
</tr>
<tr>
<td>Level 2 – Established</td>
<td>• Fear of RM remains in pockets.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Risk analysis beyond most people – better risk identification processes are a major step forward.</td>
<td></td>
</tr>
<tr>
<td>Level 3 – Managed</td>
<td>• Perceptions of fear have been broken.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• People work confidently at own ability level and actively seek further information to help manage risks.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Support system in place to help people with RM activities.</td>
<td></td>
</tr>
<tr>
<td>Level 4 – Integrated</td>
<td>• Overt confidence in managing risks communicated to customers and clients.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Enthusiasm to learn about RM and develop skills.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Staff sees RM as their core skill.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Interactive and intelligent support system available to staff which enables learning across different functions.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• RM system develops a life of its own – driven forward and developed by staff.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Risk leadership provided by staff.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Staff externally communicates RM capabilities as a competitive advantage.</td>
<td></td>
</tr>
<tr>
<td>RESOURCES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level 1 – Ad Hoc</td>
<td>• No dedicated resources for RM.</td>
<td></td>
</tr>
<tr>
<td>Level 2 – Established</td>
<td>• All risk personnel located under project.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• No central support.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Risk financed under project cost centres.</td>
<td></td>
</tr>
<tr>
<td>Level 3 – Managed</td>
<td>• Top management commitment to RM.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Active allocation and management of risk budgets.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• In-house core of expertise, formally trained in basic RM skills.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Development and use of specific dedicated processes and tools for business.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Training of key people in organisation who administer and involved in RM system.</td>
<td></td>
</tr>
<tr>
<td>Level 4 – Integrated</td>
<td>• Dedicated budget/resources for RM.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Top-down implementation of system led by strong</td>
<td></td>
</tr>
<tr>
<td>ELEMENT</td>
<td>MEASUREMENT CRITERIA</td>
<td>MEASUREMENT DESCRIPTION</td>
</tr>
<tr>
<td>---------</td>
<td>---------------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td></td>
<td></td>
<td>management leadership.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Dedicated RM unit or team.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Centralised RM expertise and resources and support for everyone in the organisation.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Human resources management support RM activities through incentives, training, rewards, etc. Resources to support, train supply chain in RM.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Psychological support for employees, stress management.</td>
</tr>
</tbody>
</table>

(Source: Adapted from Öngel, 2009)

2.4.4. MODEL 4: IACCM BUSINESS RISK MANAGEMENT MATURITY MODEL

The IACCM Business Risk Management Working Group (2003) designed a tool for the organisations to evaluate their level of maturity in the area of business risk management. IACCM Business Risk Management Maturity Model (BRM3) aims to assist an organisation to assess whether its approach to risk management is adequate or not, to compare its approach with best practice or against its competitors and create an accepted benchmark for organisational risk management. The developer of RMM (Model 1) took part in this project and provided a framework to be utilised in this model. Accordingly, the basic structure of the framework is not so different from RMM and RMMM. Four levels of organisational business risk management maturity were utilised (i.e. Level 1: Novice, Level 2: Competent, Level 3: Proficient, Level 4: Expert) against four key attributes (i.e. Culture, Process, Experience, Application) (Öngel, 2009).

The model provides the maturity characteristics by a maturity level – attribute matrix which is presented in Table 2.4. However, instead of this general framework, a detailed questionnaire is provided as a set of tables, each row containing one characteristic within an attribute (refer to IACCM Business Risk Management Working Group, 2003 for the questionnaire). For the culture section there are ten rows of characteristics. Similarly, it is eight for the process, six for the experience and seven for the application sections. Each characteristic is scored according to the maturity levels (1, 2, 3 or 4) and at the end, total attribute scores and maturity score of the organisation are achieved. The variation in the characteristic and attribute scores reflects the strengths and weaknesses of the
organisation. Thus, along with serving for the assessment of the maturity level of the organisation, the questionnaire can also be used to set realistic targets for improvement, on the basis of the identified strengths and weaknesses (Öngel, 2009).

Table 2.4: IACCM Business Risk Maturity Model

<table>
<thead>
<tr>
<th>ATTRIBUTE</th>
<th>Novice</th>
<th>Competent</th>
<th>Proficient</th>
<th>Expert</th>
</tr>
</thead>
<tbody>
<tr>
<td>Culture</td>
<td>Risk averse</td>
<td>Patchy, inconsistent</td>
<td>Prepared to take appropriate risks</td>
<td>Proactive - Intuitive understanding</td>
</tr>
<tr>
<td></td>
<td>Lacking awareness/understanding</td>
<td>Some understanding/awareness</td>
<td>Good understanding of benefits across most of organisation</td>
<td>Belief, full commitment to be the best</td>
</tr>
<tr>
<td></td>
<td>Lacking strategy</td>
<td>Cautious approach, reactive</td>
<td>Strategy mapped into process implementation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lacking commitment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Process</td>
<td>Where present tend to be inefficient, informal, ad hoc</td>
<td>Inconsistent</td>
<td>Consistent approach but scalable</td>
<td>Adaptive</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No learning from experience</td>
<td>Tailored to specific needs</td>
<td>Proactively developed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Standard approach/generic</td>
<td></td>
<td>Fit for purpose</td>
</tr>
<tr>
<td>Experience</td>
<td>None; nothing relevant</td>
<td>Basic competence</td>
<td>Proficient</td>
<td>Extensive experience</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Formal qualifications</td>
<td>Leading qualifications</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Externally recognised high competence</td>
</tr>
<tr>
<td>Application</td>
<td>Not used</td>
<td>Inconsistent-major projects only</td>
<td>Consistently applied</td>
<td>Proactively resourced</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Process driven</td>
<td>Adequately resourced</td>
<td>Across entire business</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Inadequately resourced</td>
<td></td>
<td>Flexible</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Measured for improvement</td>
</tr>
</tbody>
</table>

(Source: Adapted from Öngel, 2009)

2.4.5. MODEL 5: CAPABILITY MATURITY MODEL INTEGRATION (CMMI)
Continuous process improvement is based on small defined steps rather than a revolutionary innovation. By following the same fact, Capability Maturity Model (CMM)
provides a framework consisting of small revolutionary steps to build the foundation of continuous process improvement. The concept of maturity models is well developed and accepted. The Software Engineering Institute (SEI) at Carnegie-Mellon University has developed a Capability Maturity Model (CMM) for software engineering organisations. This defines five levels of increasing capability and maturity, termed: Initial (Level 1), Repeatable (Level 2), Defined (Level 3), Managed (Level 4) and Optimizing (Level 5). Each level is clearly characterised and defined, enabling organisations to assess themselves against an agreed scale. Having discovered its CMM level, an organisation can then set clear targets for improvement, aiming towards the next level of capability and maturity (Öngel, 2009).

Although the SEI CMM is well established, its application is limited to organisations involved in software development processes. There have been several attempts to broaden the scope of the CMM to other types of project, but these have not gained widespread currency. Each CMM level is briefly described in Figure 2.4.

Figure 2.4: Capability Maturity Model

(Source: Awan, 2010)
CMM rates the companies from level 1 to level 5. These levels are called Maturity Levels. Awan (2010) argues that, the higher the rating, the higher the maturity of the software organisations.

2.4.6. MODEL 6: RISK MANAGEMENT CAPABILITY MATURITY MODEL FOR COMPLEX PROJECTS (CoPS)

According to Ren & Yeo (2009), this model was built upon RMM, HVR Risk maturity model by Hopkinson and Hopkinson & Lovelock (2009), RMMM and CMM. It offers a framework for complex product systems projects to benchmark the current approach in risk management against five standard levels of maturity. The tool allows for the assessment of the current level of the organisation, identify realistic targets for improvement and develop action plans for enhancing its risk management maturity. The model utilises the maturity levels of CMM, which are; **Level 1**: Initial, **Level 2**: Repeatable, **Level 3**: Defined, **Level 4**: Managed and **Level 5**: Optimizing. As claimed by Ren and Yeo (2010), for the improvement of risk management maturity, the organisation must develop its capabilities in organisational culture (context), risk management process (process) and risk management knowledge/techniques (content) simultaneously. For each maturity level, the model defines major organisation culture characteristics, risk management process characteristics and knowledge characteristics, and a theoretical framework is obtained as in Table 2.5.

### Table 2.5: Risk Management Maturity Models for Complex Projects

<table>
<thead>
<tr>
<th>Level</th>
<th>Major Organisation Characteristics</th>
<th>Major RM Process Characteristics</th>
<th>Major Knowledge Characteristics</th>
</tr>
</thead>
</table>
| 5     | • Strong risk-awareness culture with proactive approach to risk management (RM) in the CoPS network  
• Active use of risk information to gain competitive advantage  
• Risk-based organisation that is dynamic and energetic, and flexible  
• Develop and sustain goodwill and long term relations with lead customers and clients | • RM processes are continuously improved  
• Develop a system of coalition and partnering with vendors and contractors  
• Project risk management process integrated into other project management processes | • Excellence in RM knowledge management  
• Continuous RM learning  
• Center of excellence in RM  
• RM knowledge shared and transferred |
<table>
<thead>
<tr>
<th>Level</th>
<th>Major Organisation Characteristics</th>
<th>Major RM Process Characteristics</th>
<th>Major Knowledge Characteristics</th>
</tr>
</thead>
</table>
| 4     | • Strong teamwork, even with external partners  
       • Continuous formal RM training for project teams  
       • Strong risk-based organisation process  
       • Strong senior support to RM | • Consistent and systematic RM for project portfolios  
       • RM processes are integrated internally and with external partners  
       • RM processes data are quantitatively analysed, measured, and stored continuously | • Strong RM learning capability  
       • RM information management system  
       • Integrated sets of tools and methods  
       • All staff risk aware and capable of using basic risk skills |
| 3     | • Dedicated resources to RM  
       • Formal training of RM skills and practices  
       • Risk awareness at the organisational level  
       • Recognition of risk ownership and allocation of risk and responsibility | • Formal project planning and control systems are established and applied  
       • RM system and procedures are used to identify, confront and mitigate risks continuously  
       • Ensure real time monitoring of budgets and schedules | • Full understanding of RM principles  
       • Mastering basic RM tools and techniques  
       • The personnel in charge of RM has high level of RM competence  
       • Formal RM databases are maintained |
| 2     | • Partial acceptance of RM  
       • Initial assignment of responsibility and accountability for risks  
       • Informal training of RM skills and practices | • Informal RM processes are defined  
       • RM problems are seldom systematically identified and analysed  
       • Fragmented RM data are collected | • Partial knowledge on RM principle and language  
       • Historical risk data are used in assessing future projects  
       • RM tools are used in some activities |
| 1     | • No senior management support and involvement  
       • Shoot the messenger, risk-fear culture  
       • Unaware of the need for RM | • No formed RM processes or practices are available  
       • No RM data are consistently collected or analysed | • No understanding of RM principles or language  
       • No RM tools in use  
       • No historical risk data collected and maintained |

(Source: Adapted from Öngel, 2009)

2.4.7. COMPARING RISK MATURITY MODELS

The comparison of different risk maturity models is challenging due to the heterogeneous composition and terminology. Each of the models has a different perception on what the necessary elements of risk management (RM) are. To assess RM maturity, ISO 31000 (2009) offers a set of RM performance criteria, the Principles and the Attributes (Shortreed 2010), which somewhat overlaps. Whereas Aon’s (2010) risk maturity model (RMM) includes nine “hallmarks”, or attributes, PwC’s (2008) has eight and RIMS’s (2006) seven (Liukisiala, 2012). Since the attributes presented are not usable per se without further clarification about what is measured, the text bodies of the RMMs provide expand the ideas behind the attributes. RIMS provide a list of key drivers, that is, the operationalisation of the
attributes. Such ready operationalisation is not presented in the other three RMMs (Liuksiala, 2012).

According to Liuksiala (2012), PwC has adopted its RMM from COSO ERM’s (2004) components, which corresponds to the Risk Management Process in ISO 31000 and similar components present also in majority of other RM standards. Compared to other notable RMMs, the model of PwC is the most narrowly defined, since it at large ignores the RM framework, that is, the foundations and organisational arrangements to support the management of risk. In all of the maturity models, alignment of RM objectives to organisational objectives is at some level present. Additionally, monitoring and improvement of the framework were also included in all of the models. As the study of Liuksiala (2012) implies, continual improvement of RM has been widely incorporated in RM practices. PwC’s RMM was the only one not to include managers’ support to ERM.

RMMs by RIMS (2006) and PwC (2008) are most visibly lacking of stakeholder-orientation present in ISO 31000 and Aon RMM. ISO 31000 (2009) encourages to take into account the stakeholders’ perceptions and opinions and communicate with them on a frequent basis (Liuksiala, 2012). However, the lack of stakeholder-orientation in RIMS and PwC may partly be explained by the advances in RM thinking, which has taken major leaps in the wake of the latest financial crisis of 2008. Althonayan, Killackey, & Keith (2013) see the appointment of a dedicated senior-level risk executive as an indicator of a mature RM architecture. ISO 31000 (2009) more vague regarding this topic, indicating management and board commitment, but makes no remark of the need of a dedicated risk management executive. The appointment of a Chief Risk Officer (CRO) has been used as an indicator of ERM implementation, i.e. high RM maturity. Consequently, Althonayan, Killackey, & Keith (2013) found that the presence of a Chief Risk Officer in the organisation correlated with the perceived RM maturity.

Aon, a leading global provider of risk management services, insurance and reinsurance brokerage, and human resource consulting and outsourcing, emphasizes quantification of risk information, whereas ISO 31000 takes a more tailored approach by encouraging risk information, whether quantitative or qualitative, to be suited to the need of the particular
context (Liiksiala, 2012). Other maturity models do not address this issue. Both RIMS and ISO 31000 (ISO 31000, 2009:17) consider root cause analysis as an important part of risk management. Risks and their causes and sources should be investigated to gain an articulate understanding of the particular risk (Liiksiala, 2012). However, unlike ISO 31000, RIMS does not consider interconnectedness of different risks.

Surprisingly, research reports using the existing RM maturity models are few in numbers. In the study of RIMS (2011), the RM maturity was found to be at a satisfactory level (Coetzee & Lubbe, 2013). On the contrary, surveys by COSO (2010) and Aon (2010) indicate overall low RM maturity. However, no unambiguous conclusions can be drawn from the results of these three investigations. In addition to using an entirely different scale, they were targeted to geographically and professionally different respondents (Coetzee & Lubbe, 2013).

2.4.8. ASSESSMENT SYSTEM

Most of the models investigated in this study (i.e. Models 1, 2, 3 and 6) are in the form of an attribute-maturity level matrix. These models provide general descriptions of the attributes at each maturity level, but do not provide a systematic assessment approach. Not each description entry has a correspondence in each of the maturity levels. As claimed by Öngel (2009) for Model 1, the diagnostic elements of the model should be enhanced. A self-assessment questionnaire is needed to better serve for the identification of the current risk management maturity level and provide sufficient usability as a diagnostic tool. As also pointed out by Loosemore, et al. (2006) for Model 6, these models are in the form of a guidance indicating the types of questions to ask for a maturity assessment.

Models 4 and 5 are one step forward in this respect, by providing more detailed questionnaires with defined assessment systems. After all, the questionnaire of Model 5 consists of very brief statements, which are hard to comprehend and lead for an assessment at once. Moreover, to evaluate these statements on a 1 to 5 Likert scale also creates vagueness, in which further guidance is needed. The approach of Model 4 was evaluated to be more practical and elaborate in this respect when compared to Model 5, as each of the features in an attribute is defined at each maturity level (Öngel, 2009:50).
2.4.9. DESCRIPTION OF THE TERM “MATURITY”

Maturity means fully developed or perfected, in general usage (Öngel, 2009). The author, Öngel (2009), claims that if the concept of maturity is adapted to an organisation, then it might denote an organisation as being in a perfect state of condition to achieve its objectives. According to the same author, today this maturity concept is being utilised increasingly to map out logical ways to improve an organisation’s services. It is used in “Best Practice” benchmarks, indicating increasing levels of sophistication and other features (PMI, 2002). Maturity refers to the degree that an organisation consistently carries out processes that are documented, managed, measured, controlled and continually improved (CMMI Product Team, 2002). As claimed by Öngel (2009), maturity can best be described for the business community through a combination of three different dimensions: action (ability to act and decide), attitude (willingness to be involved) and knowledge (understanding of the impact of willingness and action).

2.5. RISK MATURITY MODEL ATTRIBUTES

Simple and reasonable attributes are provided by Model 1 as Culture, Process, Experience and Application. Under culture attribute the model examines risk awareness, top management commitment and approach towards risk management. Process attribute is concerned with the existence of formal processes, risk budget and organisational learning from risks. Under experience attribute, staff dealing with risk management, training and use of tools are examined. And finally, application attribute deals with the existence of a structured application of risk management, dedicated tools and resources. Similarly, developed upon Model 1, Models 3 and 4 utilise the same attribute headings with Model 1. On the other hand, having a focused view on the processes, Model 2 takes risk management processes (in which it is called components) as attributes.

In a different approach, Model 5 utilises three key attributes as culture, process and knowledge/techniques. In Model 6, extra attribute headings are integrated to the RMM framework – awareness, image, confidence and resources. Taking cognizance of the descriptions of the term “organisational culture” in the literature, it was seen that the scope of culture attribute comprises awareness, so creating an extra heading may be unnecessary. Likewise, it was believed that confidence and image headings do not add any
value to the model and the content of the confidence heading can be involved under the experience heading. To create resources attribute heading was deemed reasonable in terms of comprehensiveness, since this subject is involved under the application heading of Model 1 and Model 3 (Öngel, 2009).

2.5.1. DETERMINING ORGANISATIONAL MATURITY LEVELS

The brief descriptions of each Risk Management Maturity Model (RMMM) level can indicate where an organisation stands in terms of the relative maturity of its risk process, but a more detailed diagnostic tool is required for objective and consistent assessment of risk management process maturity. Table 2.4 presents suggested attributes of a typical organisation at each RMMM level under four attribute headings: Culture, Process, Experience and Application (Hillson, 2006). This breakout enables an organisation to compare itself against clear criteria that have been accepted by numerous professional Risk Management organisations and assess its current level of risk maturity. It is recognised that some organisations may cross the boundaries between successive RMMM levels, but the granularity between levels is such that there should be a clear distinction in most cases and it should prove possible to determine where most organisations are to a single level (Hillson, 2006).

The extent to which the attributes noted in the Maturity Level Table 2.4 are implemented at each level determines the process maturity level rating of an organisation. The extent of implementation of a specific attribute is evaluated by assessing the following key attributes as established in Chapter 1 (Hillson, 2006):

- Culture;
- Process;
- Experience; and
- Application.

2.5.2. PROGRESSING BETWEEN MATURITY LEVELS

The assessed RMMM level can be used in a number of ways. For example, organisations may wish to enhance their level of risk capability by devising strategies to enable more
effective management of risk (Hillson, 2006). Alternatively, they may want to rate themselves against key competitors in order to gain advantage in the market place. Once the current risk maturity level is determined, action plans for moving towards the next level can be developed. Many organisations are at Level 2 or Level 3, or have embarked on the transition from Level 2 to Level 3 and a significant number are at Level 1. Different barriers are faced by organisations at each of the RMM levels, which must be overcome if progress is to be made to the next level of risk maturity (Hillson, 2006).

Table 2.6 summarises some proposed key activities and strategies that enable the moving towards the next higher level.

<table>
<thead>
<tr>
<th>Transition</th>
<th>Activities and Strategies</th>
</tr>
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</table>
| Level 1 to Level 2 – Towards a more disciplined process | • Initial training and education in risk management (RM).  
• Undertake awareness briefings to sell the vision of risk management and its potential benefits to the senior management.  
• Identify and use appropriate project risk management templates and historical risk data. |
| Level 2 to Level 3 – Developing a formal RM framework and standards | • Provide formal tiered risk management training to develop in-house expertise and process knowledge.  
• Formalise the chosen risk management systems and processes  
• Develop a culture that supports both the behavioral and quantitative sides of risk management.  
• Assessing and managing risk both qualitatively and quantitatively.  
• Plan, prioritise, mobilise and track risk management activities.  
• Identify proactively common known risk sources and reduce risks systematically.  
• Effective learning from experience. |
| Level 3 to Level 4 – Enabling a predictable networked process | • Have key suppliers and customers involved in both project management (PM) and RM processes.  
• Develop a fully RM culture and appointment of a risk manager.  
• Manage emergent risk through high risk awareness and quick response.  
• Assess the project structure and instill robustness to cope with emergent risks. |
<table>
<thead>
<tr>
<th>Transition</th>
<th>Activities and Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Facility double-loop learning <em>(According to Chris Argyris, the double-loop learning occurs when error is detected and corrected in ways that involve modification of an organisation’s underlying norms, policies and objectives).</em></td>
</tr>
</tbody>
</table>
| Level 4 to Level 5 – *Continuously improving and optimising process and working on networking and condition.* | • Ensure continued commitment and active involvement of senior management.  
• Encourage the corporate-wide acceptance of a culture that supports empowerment and self-organising guided by a set of protocols.  
• Continue to involve lead customers and suppliers in the shared risk process.  
• Develop societal network and community relations.  
• Continuously improve multiple capability in organisation, PM and RM processes, software tools and technology applications. |

*(Source: Adapted from Ren & Yeo, 2009)*

### 2.6. GENERAL AND BASIC DESIGN PRINCIPLES FOR MATURITY MODELS

In this section, the researcher proposes general Design Principles (DPs) for maturity models based on an extensive review of maturity model-related literature. Table 2.7 shows the resulting framework. As the researcher investigated the usefulness of maturity models, DPs are grouped into basic principles, principles for a descriptive purpose of use, and principles for a prescriptive purpose of use. Wherever reasonable, Table 2.7 includes sub-aspects of DPs as well (indicated by lower case letters). The researcher deliberately omitted the comparative purpose of use as the fact of whether corresponding DPs can be met largely depends on external factors (e.g., standardised and publicly available specifications, cross-industry adoption, data for benchmarks, or independent assessors). Although such DPs may be useful for evaluating alternative maturity models, they can only partially be influenced during maturity model design. The DP groups are organised as shown in Table 2.7. Basic DPs should be addressed independently of a specific purpose of use *(Roglinger, Becker, & Pöppelbuß, 2012)*.

Descriptive maturity models should also comply with the basic DPs. Prescriptive maturity models should fulfill the DPs for descriptive maturity models and the basic DPs. In the
following, each DP is defined in terms of what it means and how it is justified by existing literature. We do not require each maturity model to meet all DPs. Instead, the framework intends to assist practitioners and researchers with comparing existing maturity models. It also serves as a “checklist” when designing new maturity models (Pöppelbuß, 2011).

Design Principle 1.1: In order to help maturity model designers sharpen their field of work and to support assessors classifies a model at hand, maturity models have to provide a set of basic information, of which the application domain – together with prerequisites of applicability (Pöppelbuß, 2011). Moreover, the purpose of use, the target group, and the class of entities under investigation need to be documented. The target group comprises the people who apply the maturity model and those to whom results are reported (Pöppelbuß, 201:2).

Design Principle 1.2: With maturation as primary subject matter, maturity models are required to define central constructs related to maturity and maturation (Becker & Kahn, 2010). Although most maturity models do not define but circumscribe maturity, it has to be defined what maturity means in relation to the class of entities and application domain under investigation (see Design Principle 1.1) (Pöppelbuß, 2011). Such an explication may be one-dimensional (e.g., process or object maturity).

Many maturity models, however, operationalise maturity in a multi-dimensional manner (Pöppelbuß, 2011). As an example, CobiT (Control Objectives for Information and Related Technology) comprises the dimensions (1) awareness and communication, (2) policies, standards, and procedures, (3) tools and automation, (4) skills and expertise, (5) responsibility and accountability, (6) goal setting and measurement with maturity levels defined for each of them (Pöppelbuß, 2011). A multidimensional approach facilitates the definition of assessment criteria for a descriptive purpose of use (see Design Principle 2.1) and the classification of improvement measures for a prescriptive purpose of use (see Design Principle 3.1). Maturity levels are central constituents of maturation paths. Each level has to be identified by a concise descriptor.
Moreover, the rationale behind maturation needs to be disclosed by means of the logical relationship between successive levels (Pöppelbuß, 2011). According to Pöppelbuß (2011), maturity models can be structured hierarchically into multiple layers referring to different levels of granularity of maturation. A high level of abstraction provides a simple means for comparing and documenting maturity levels (e.g., on corporate level) as it is often intended for the communication with external stakeholders. A lower level of abstraction, in contrast, enables to cope with maturity within complex domains and provides better help with choosing among improvement measures (see Design Principle 3.2). Finally, maturity models should explicate the underpinning theoretical foundations of evolution and change with respect to the class of entities under investigation (Pöppelbuß, 2011). This includes among other things information about the way change typically happens in the respective application domain as well as about drivers and barriers of maturation.

**Design Principle 1.3**: Besides defining constructs related to maturity and maturation, maturity models have to include definitions of central constructs related to the application domain. This conforms to the qualities of “understandability” and “language adequacy” proposed by Pöppelbuß (2011:7) respectively. **Design Principle 1.4**: The basic information, the central constructs, and their interrelations need to be documented in a target group-oriented manner. This is justified by the requirement of “communication” proposed by (Pöppelbuß, 2011). The design principles framework presented in the Table 2.7 will be used to analyse the research data collected. Accordingly, the application of these principles to empirical study and conclusion are discussed in Chapter 4.

**Table 2.7: A Framework of General Design Principles for Maturity Models**

<table>
<thead>
<tr>
<th>Group</th>
<th>Design Principles</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Basic</td>
<td><strong>Basic information</strong></td>
</tr>
<tr>
<td></td>
<td>a) Application domain and prerequisites for applicability</td>
</tr>
<tr>
<td></td>
<td>b) Purpose of use</td>
</tr>
<tr>
<td></td>
<td>c) Target group</td>
</tr>
<tr>
<td></td>
<td>d) Class of entities under investigation</td>
</tr>
<tr>
<td></td>
<td>e) Differentiation from related maturity models</td>
</tr>
<tr>
<td></td>
<td>f) Design process and extent of empirical validation</td>
</tr>
<tr>
<td>Group</td>
<td>Design Principles</td>
</tr>
<tr>
<td>-------</td>
<td>-------------------</td>
</tr>
</tbody>
</table>
| 1.2   | Definition of central constructs related to maturity and maturation  
|       | a) Maturity and dimensions of maturity  
|       | b) Maturity levels and maturation paths  
|       | c) Available levels of granularity of maturation  
|       | d) Underpinning theoretical foundations with respect to evolution and change |
| 1.3   | Definition of central constructs related to the application domain |
| 1.4   | Target group-oriented documentation |
| 2.1   | Inter-subjectively verifiable criteria for each maturity level and level of granularity |
| 2.2   | Target group-oriented assessment methodology  
|       | a) Procedure model  
|       | b) Advice on the assessment of criteria  
|       | c) Advice on the adaptation and configuration of criteria  
|       | d) Expert knowledge from previous application |
| 3.1   | Improvement measures for each maturity level and level of granularity |
| 3.2   | Decision calculus for selecting improvement measures  
|       | a) Explication of relevant objectives  
|       | b) Explication of relevant factors of influence  
|       | c) Distinction between an external reporting and an internal improvement perspective |
| 3.3   | Target group-oriented decision methodology  
|       | a) Procedure model  
|       | b) Advice on the assessment of variables  
|       | c) Advice on the concretization and adaption of the improvement measures  
|       | d) Advice on the adaptation and configuration of the decision calculus  
|       | e) Expert knowledge from previous application |

(Source: Adapted from Röglinger, Pöppelbuß & Becker, 2012)

2.7. THE ROLE OF INTERNAL AUDIT FUNCTION IN Enterprise Risk Management

Internal auditing is an independent, objective assurance and consulting activity. Its core role with regard to enterprise risk management (ERM) is to provide objective assurance to the board on the effectiveness of risk management. Indeed, research has shown that board directors and internal auditors agree that the two most important ways that internal auditing provides value to the organisation are in providing objective assurance that the major
business risks are being managed appropriately and providing assurance that the risk management and internal control framework is operating effectively (IIA, 2009:3).

Figure 2.5 presents a range of ERM activities and indicates which roles an effective professional internal audit activity should and, equally importantly, should not undertake. The key factors to take into account when determining internal auditing function’s role are whether the activity raises any threats to the internal audit activity’s independence and objectivity and whether it is likely to improve the organisation’s risk management, control and governance processes (IIA, 2009).

Figure 2.5: The Role of Internal Audit in Enterprise Risk Management (ERM)

(Source: Adapted from IIA Positioning Paper, 2009)
The roles internal auditing should **NOT** undertake (IIA, 2009):

- Setting the risk appetite.
- Imposing risk management processes.
- Managing risk assurance.
- Taking decisions on risk responses.
- Implementing risk responses on management's behalf.
- Accountability for risk management.

The Institute emphasizes that organisations should fully understand that management remains responsible for risk management. Internal auditors should provide advice, and challenge or support management’s decisions on risk, as opposed to making risk management decisions. The nature of internal audit’s responsibilities should be documented in the audit charter and approved by the Audit Committee (IIA, 2009).

### 2.8. CHAPTER SUMMARY AND CONCLUSION

In this chapter a definition of risk and risk maturity was given. The risk management process and risk management maturity levels were described. The relationship of risk management with general management was illustrated. Various risk management frameworks and business process maturity models were explained and compared. The common elements or attributes of maturity model were identified, described and used as a baseline for this research. Then an overview of each attribute was presented. Tools and techniques and risk management competencies were addressed to ensure that a holistic view on risk could be achieved and to assist in identifying, customising and proposing a risk maturity model for use at Liberty Life.

This chapter sets the scene for Chapter 3, where the empirical research methodology followed in this research study will be introduced.
This chapter describes the research methodology used in this study. Firstly, the section consists of the choice of study, research philosophy, research purpose, research approach and research strategy are presented. Subsequently, the data collection method is explained. The chapter has the following sections: 1) research design 2) sample approach and unit of analysis 3) interview guide design and development 4) conduct of interviews and 5) data analysis strategy. Finally, the validity and reliability of the research is explained.

3.1. METHODOLOGY, DESIGN AND DATA COLLECTION

3.1.1. INTRODUCTION

Research is a complex undertaking that, without a systematic approach, would be difficult to achieve. This chapter therefore, discusses in detail the research approach and design employed in this study to effectively assess the strengths and weaknesses of the research in the area of risk management.

3.1.2. RESEARCH APPROACH

Distinctions are usually made between different approaches when conducting research, the quantitative and the qualitative approach. Quantitative research is formalised and structured, mainly focusing on transforming empirical data into numbers which are analysed using statistical procedures (Andersson, Franzén, & Fries, 2008), as opposed to qualitative methods, which are used when an explanation or understanding of a situation, phenomena, and the surrounding context is necessary. Qualitative research aims to provide an in-depth understanding of the area of interest, based on the researcher’s own interpretation of detailed and information rich data (Andersson, Franzén, & Fries, 2008).

A qualitative research approach does not develop a hypothesis in advance of data gathering as the emphasis is on developing findings using data with minimal theoretical or researcher bias. Furthermore, the outcome of this research is not intended to deliver
statistically generalised findings; rather the aim is to develop in-depth insight into risk maturity that contributes to the researcher’s understanding of that subject.

The use of qualitative research methods are a dominant feature in risk management. Citing Leedy & Ormrod (2005) indicate that qualitative research methods serve among other purposes the following:

- they can reveal the nature of certain situations, settings, processes, relationships, systems or people;
- they enable the researcher to gain insights about the nature of a particular phenomenon, develop new concepts or theoretical perspectives about the phenomenon and discover the problems that exist within the phenomenon;
- they allow a researcher to test the validity of certain assumptions, theories or generalisations within real-world contexts; and
- they provide a means through which a researcher can judge the effectiveness of particular practices or innovations.

Quantitative research was considered for this study based on the understanding that it provides “high level measurement precision and statistical power” (Wamundila, 2008:21). For instance, the researcher used a survey method to solicit information on various attributes of risk maturity model and related practices which necessary to be verified with the literature review. Research that blends both qualitative and quantitative approaches is called mixed research (Wamundila, 2008:21). In the light of the above, virtues associated with qualitative and quantitative research approaches, their blending has been seen as an option that seeks to minimise on their individual short-comings and enhance confidence levels for the research findings.

The research methodology adopted in this research study is qualitative in nature. The research design for this study is exploratory. In certain circumstances, where appropriate, a qualitative approach has been adopted. The background/rationale for the research topic was established through the literature review, the next logical step was to draw a route map for achieving the research objectives. Figure 3.1 describes the general steps that have
been taken whilst conducting this research. Lastly, the researcher shortly describes the analysis model.

**Figure 3.1: The Research as Iterative, Cyclic Learning Journey**

As depicted in Figure 3.1, options decrease as decisions are made. Due to the data collection narrows the scope of subsequent decisions, it is important to spend sufficient time iterating the first three stages in the process, as indicated by the wider cyclical arrows in the model. As a research question becomes more focused, initial research design ideas emerge and are refined and elaborated. Design choices broadly involve the type of data to be collected and the methods used to collect the data (e.g., observation, interviews, and surveys). The researcher strives to resolve the tension between the ideal version of his or her project and one that is feasible and viable causing the design to evolve. “Considering how to operationalise, explore, or test different research questions often leads to the realisation that those questions or hypotheses need to be sharpened, revised, or scrapped” (Edmondson & McManus, 2007:1174).
3.2. RESEARCH DESIGN

According to Johnson and Christensen (2004) “the outline, plan, or strategy” used to arrive at conclusions for a research question is called research design. Several such designs exist for various research purposes and one such design is the case study (Wamundila, 2008).

There are many qualitative and quantitative research designs including: action research; grounded theory; ethnography; phenomenology and case studies (Wamundila, 2008). However, this research adopted the case study design. According to the definition by Sampson (2010), case studies are: “detailed investigations of individuals, groups, institutions or other social units…a case study attempts to analyse the variables relevant to the subject matter. The principle difference between case studies and other research studies is that the focus of attention is the individual case and not the whole population of cases. …in a case study the focus may not be on generalisation but on understanding the particulars of that case in its complexity”.

Wamundila (2008) supports the views expressed by Sampson (2010) above and observes that the value of case studies is seen through their ability to facilitate for an “in-depth analysis” of the study unit. Further, Wamundila (2008) stresses the fact that case studies “offer a richness and depth of information not usually offered by other methods”. Case studies have often been used to study a variety of issues in universities. For instance, Olsson, (2006) informs of a case study conducted at SFK to develop a model for risk assessment of the projects.

3.2.1. CASE STUDY

A case study is a research design which provides a detailed story of the study case (Wamundila, 2008:97). There has been a notable increase in the usage of a case study research. This increase has been attributed to the fact that it allows for an in-depth investigation of a problem and contends that the rationale for undertaking case study research has been due to the fact that it is a “convenient and meaningful technique” that provides “face-value credibility … they can be seen to provide evidence or illustrations with which some readers can readily identify”. Wamundila (2008) further stresses that “the key features of a case study are its scientific credentials and its evidence base for professional
applications”. The wide usage of case study research is also mainly due to its capacity to “offer in-sights that might not be achieved with other approaches”. To sum-up the fundamental nature of case study as a research approach, the author also stresses that “the goal of the case study method is to describe as accurately as possible the fullest, most complete description of the case”.

Given the above importance, advocacy has been made for the usage of the case study approach. The author notes that case study research usually “emerges as an obvious option for students and other new researchers who are seeking to undertake …research …based on their workplace or the comparison of a limited number of organisations” (Wamundila, 2008).

Soy (2006) note some of the virtues associated with case study research below:

- Offers a richness and depth of information;
- A highly versatile research method and employs any and all methods of data collection from testing to interviewing;
- Enables an understanding of a complex issue or object;
- Can extend experience or add strength to what is already known through previous research; and
- Puts emphasis on context which can help bridge the gap between abstract research and concrete practice by allowing researchers to compare their firsthand observations with the quantitative results obtained through other methods of research.

Although case study research has been commended for its virtues, it has its shortcomings. For instance, Soy (2008) indicates that the short-comings of case study research include bias of the research findings mainly due to over exposure of studied cases and that the small number of studied cases is difficult to generalise. Besides the weakness associated with case study research identified above, Soy (2008) contends that many researchers in various disciplines are successfully carrying out case study research based on “carefully planned and crafted studies of real-life situations, issues, and problems”. For the purpose of this research, the case study design was adopted. The selection of this design was mainly
due to the requirement to perform a detailed investigation of various maturity models which could be adapted to meet the specific needs of Liberty Life.

3.3. SAMPLING APPROACH AND UNIT OF ANALYSIS

According to Johnson and Christensen (2004:197) “Sampling is the process of drawing a sample from a population”. Drawing from the “principle fundamental of mixed research” (Wamundila, 2008:98) as a mechanism for addressing the validity of a research undertaking, this study had two sample frames. The first sample frame comprised respondents in the survey while the second sample frame constituted respondents who were interviewed.

The size of the sample is important and cannot be decided upon arbitrarily. A decision on the optimum size has to be taken with due regard to the type of statistical analysis required of the data. Although a sample size of 30 is generally regarded by many to be the minimum number in many cases, there are statistical techniques for the analysis of samples below 30. Of more importance to the researcher is the need to determine in advance of data collection the types of relationship that he wishes to explore within the subgroups of his eventual sample. The sample size depends on the budget available and degree of confidence required. For any survey task and population, the researcher can "buy" higher reliability, lower sampling error and more confidence. Ordinarily, though, there are some minimum sample sizes below which the data is useless (de Villiers, 2003:25)

Before determining the actual sample size to be used, the researcher should be aware of the maximum and minimum practical sizes that apply to virtually all surveys. Ordinarily, a sample of fewer than about 30 respondents provides too little certainty to be practical and experienced researchers usually regard 100 or so respondents as the minimum sample size when the population is large. The exception would be in the case where the survey contained only a few items and there is unlikely to be variance, (de Villiers, 2003:25).

The central limit theorem states that for large samples, the sampling distribution of the mean can be approximated closely with a normal distribution. Therefore the theorem is of fundamental importance in statistics, because it justifies the use of normal-curve methods in
a wide range of problems; it applies to infinite populations and also to finite populations when the sample size (n), though large, constitutes but a small portion of the population. It is difficult to say precisely how large n must be so that the central limit theorem can be applied, but unless the population distribution has a very unusual shape, n = 30 is usually regarded as sufficiently large, (de Villiers, 2003:25). After taking all the factors into consideration it was decided for this study to have fewer than 30 responses. The actual figure was 10. As the sample size represents more than 25% of Liberty Life executive management, it can be concluded that the sample will represent the population. The details of the interview schedule are detailed in Appendix C.

Ten (10) unstructured interviews were conducted. Typical interviewees were senior executives and risk managers and other respondents as deemed appropriate for this research. A request for an interview was either made by an email (see Appendices A, B and C) or telephonically. A dual approach as recommended by Klemetti (2006) was be adopted for this research study. Firstly, was to make a telephone call to a named person who was most likely to be appropriate for the interview, and then to follow this up with an introductory letter that clearly clarified the research purpose, process and requirements. The researcher applied the snowball technique to identify respondents who have been involved in risk management at Liberty Life. Whyte (1982) suggest that this technique be used to make initial contact with a small group of people who are relevant to the research topic and then these contacts should be used to establish contacts with others. According to the author, such actions enhances the accessibility to potential respondents, which increases data credibility.

This study employed mixed methods research, the sampling methods used for this study are purposive and quota sampling. However, the purposive sampling was dominant in this research study. Purposive sampling is the process whereby the researcher selects a sample based on experience or knowledge of the group to be sampled. It is also referred to as the “judgement” sampling, whereas, quota sampling is the process whereby a researcher gathers data from individuals possessing identified characteristics and quotas. The unit of analysis relates to concept of level is being studied. Therefore, research may focus on (1) individuals (2) groups (3) organisations (4) societies (Na Ranong &
This research study, the design drew samples from the specific individuals within the organisation, ranging from the risk managers to senior executives. Thus, the main unit of analysis is defined as individuals for this research (see Appendix D). The interview survey enquired of the selected individuals, about their perceived view of the key attributes of a risk maturity model, including measurement criteria for each. The goal of using the individuals as the unit of analysis was to provide findings that were useful to Liberty Life in designing and developing a risk maturity model that fit its unique set of circumstances and risk management culture.

The interview length ranged approximately from thirty to forty-five minutes. The researcher deployed different types of interview methods dependent on the interviewees' reference as well as practical constraints (e.g. geographical distance between researcher and interviewees).

### 3.4. DATA COLLECTION METHODS

The collection of data is a crucial operation in the execution of good research design. The quality of research data depends upon the quality of the data collected. The collection of data occurs in a designed enquiry only after a long series of steps including the following (Miller, 1991:15):

- The definition of the problem;
- The construction of the theoretical framework;
- The stating of hypotheses;
- The establishment of the design inquiry; and
- The determination of sampling procedures.

While acknowledging the fact that qualitative case studies research makes use of different methods for data collection, this research study employed the mixed method approach in order to strengthen the evidence and validity of the study (Wamundila, 2008:101). According to (Andersson, Franzén, & Fries, 2008:6-7), there are two different approaches classified for this purpose, primary and secondary sources of data. By utilising a primary approach, new data is collected in order to support and act as a foundation of the analysis.
The other approach using a collection of secondary sources of data, involves gathering data collected by others and for different purposes than the researchers (Andersson, Franzén, & Fries, 2008). Researchers argue that primary sources of data in conjunction with secondary sources of data are preferable since together they generate a valid supplementary investigation (Andersson, Franzén, & Fries, 2008). Additionally, Andersson, Franzén, & Fries (2008) state that, it is the interaction of existing knowledge and new research where interesting connections can be made. It is therefore vital to do a thorough examination of existing knowledge to be able to develop new knowledge. In accordance with these assumptions the data in this research will be collected from both primary and secondary sources (Andersson, Franzén, & Fries, 2008).

3.4.1. THE INTERVIEW GUIDE

The research instrument is a critical component of the research undertaken, the physical design and layout, order of questions and instructions are critical in gaining the respondents’ interest which leads to a fully completed interview guide. The interview guide was developed, and divided into different parts focusing on a single topic each. By structuring the interview guide into 7 questions based on research objectives, this simplified the completion and analysis of the results by the researcher. The interview guide was derived from the literature review and accordingly, followed the areas/questions specifically referred to in designing and developing a risk maturity model for Liberty Life. The interview guide is presented in Appendix B.

To confirm and ensure that the interview guide provides the correct response to answer the research questions and objectives, it is important to pilot the interview guide (Kruger, 2010). The interview guide was piloted as the researcher believed that this will provide for refinement of the guide to ensure that the interviewees have no difficulty in answering the questions and that there are no problems in recording the completed data (Kruger, 2010). Adjustments were thereafter made to the final questions and structure of the interview guide, following feedback received from the individuals, after which it was used accordingly during the interviews. A refined interview guide allowed for investigative questions asked to be answered by the research respondents surveyed.
Furthermore, the other benefit of this approach was, it allowed the researcher to assess the guide validity and likely reliability of the data collected. The interview guide provided the researcher with a deep understanding of the attitudes, opinions, and organisational practices of the individual executives, by having them to respond to the same set of questions (Kruger, 2010). The researcher regarded this approach as an efficient way of collecting responses from a very small sample prior to analysis. Kruger (2010) supports the utilisation of a quantitative approach in the study of risk maturity on the grounds that previous studies in this area provided limited insight as to the reason around why half of these initiatives have failed.

3.4.2. THE INTERVIEWS

Ethics approval for the following interview methodology was obtained from the research supervisor. Prior to each interview a one-page summary of the research aims and purpose was emailed to each interviewee so that they were aware of the nature of the study. The researcher ensured that the discussion bordered within the purpose of the interview as suggested by the authors, Saunders, Lewis, & Thornhill (2007).

During this research, the interviews were conducted face-to-face, one-on-one or via a combination of open-ended survey and unstructured interviews in the workplace. Interviews were conducted in a private space (private meeting room) where interviewees were more likely to speak freely without fear of being overheard. Where the use of private meeting rooms was not possible, the interviews were carried out in noisy cafeterias to minimise the risk of being overheard. This approach suited the purpose of this research very well, since the direct contact with the interviewees aided the generating of a deep understanding needed when evaluating the arguments in the analysis. Interviews also allowed the researcher flexibility in the sense that immediately follows-up and clarify aspects that have been revealed in the interaction with the respondents. According to Creswell (2003), researchers also used interviews as another tool for data collection. For purposes of consistency on data collected, an interview guide document was designed and used during the interviews.
It is nevertheless important to be aware of the risk the interviewer faced by failing to ask questions that generates a correct reflection of the truth, due to lack of skill and expertise. Failure to comprehend and interpret responses may also cause incorrect data (Andersson, Franzén, & Fries, 2008). The researcher kept this in mind when preparing for, performing and finally analysing the outcome of the interviews, thereby minimising the impact thereof on the research objectives. All interviews were conducted during the month of October 2013.

An important advantage of research interviews is their adaptability. A skilled interviewer can (to varying degrees, depending on the type and purpose of an interview) follow up on the thoughts, feelings and ideas behind the responses given, in a way that completing a questionnaire cannot capture. Having gained access to a person or group of people to interview, the researcher is guaranteed some sort of response (in comparison to relying on people’s willingness to complete and return a postal or online questionnaire) (Soy, 2008). Another advantage of research interviews is, unstructured interviews enables the researcher to create an interview setting where the interviewees were free to reveal their arguments for characteristics of a mature risk management practice with limited influence from the researcher. Therefore, aim of this exercise was to conduct an interview where the arguments for characteristics of a mature risk management process are brought up by the respondents, not by the researcher. (Andersson, Franzén, & Fries, 2008) The researcher unstructured interviews provided the researcher with limited possibility to influence only that is necessary.

Additionally, when combining the unstructured approach with personal interviews, the researcher gained from their respective strengths. Personal interviews add value to the research study by facilitating a relaxed atmosphere where the respondents can talk freely about the subject, and hopefully provide the researcher with comprehensive explanations for the techniques and tools they use when conducting risk assessments.

Andersson, Franzén, & Fries (2008) support the researcher’s choice by stating that telephone interviews is the second best choice when personal interviews are not feasible. In addition to that, it is also often a lot cheaper and faster to conduct than personal interviews.
(Andersson, Franzén, & Fries, 2008). However, unstructured interviews might also compose a problem by increasing the risk that the researcher might fail to cover the questions of interest due to the lack of structured preparation (Andersson, Franzén, & Fries, 2008). Bearing this in mind, the purpose of the interviews and the expected outcome were thoroughly discussed as a preparation for the empirical study. Interview techniques were also be considered, regarding how to guide the respondent to stay within the area of interest without interfering too much. Since the researcher is not an experienced interviewer, the researcher also intend to be very observant on his own performance by evaluating techniques and approaches adopted, so that the researcher can adapt and change appropriately if the researcher discovers techniques which are less or more successful (Andersson, Franzén, & Fries, 2008).

The most obvious disadvantage of conducting any type of research interview is that such interviews are time consuming, particularly if they are recorded and fully transcribed (i.e. word for word). As with the advantages of conducting research interviews, disadvantages vary with the type of interview. Structured interviews inevitably limit responses and the data obtained may not be reliable if there are faults in the way questions are asked or understood by the respondent. Structured interviews can be very limiting in terms of allowing any real exploration or understanding of the responses given. In highly structured interviews the key difference, in comparison with postal questionnaire completion by the respondent, is that the researcher can explain questions that the respondent does not understand, or provide prompts to help the respondent answer the question. Consistent prompts are agreed beforehand. The sample size for in-depth and unstructured interviews is generally small and may not be representative of a particular population. Some would argue that it can be difficult to compare the results of in-depth and unstructured interviews in that they may be very specific to a particular interaction (the research interview itself). In practice many interviews are neither completely structured nor completely in-depth, but somewhere between the two (Andersson, Franzén, & Fries, 2008).

Falling in between these two extremes is the semi-structured interview, where the researcher only uses an interview guide with a few main topics and issues that need to be covered. Moreover, interviews can be categorised into personal interviews and group
interviews. In a personal interview the interviewer and the respondent meet face to face and interact directly. **Andersson, Franzén, & Fries (2008) stresses that a personal interview is an excellent way to add depth to the interview since a close contact with the respondent becomes feasible.** In a group interview, also referred to as focus groups, people are brought together to have a free flowing yet focused discussion on a particular topic. This type of setting is a good way to reveal and bring forth discussions and alternative thinking patterns (Andersson, Franzén, & Fries, 2008).

Questionnaire responses have to be taken at face value, whereas responses to interview questions can be clarified and expanded on the spot. Validated structured questionnaires (that is, questionnaires that have already been used and shown to measure what they say they do), can also be administered as part of an interview, and are highly respected for their reliability. Less structured and in-depth interviews allow for exploration and understanding of responses (they are more likely to elicit valid responses). A skilled interviewer is more capable of eliciting open and honest answers in unstructured interviews. In comparison with structured interviews or postal questionnaires, structured interviews are generally easier to analyse than in-depth and unstructured interviews.

### 3.5. DATA ANALYSIS

The collection of data usually is followed by its analysis. Data analysis refers to the process of generating value from the raw data (Wamundila, 2008:106). This research employed a single approach to data collection, and the interviews data was analysed using appropriate data analysis techniques. There are a number of data analysis techniques that can be employed to analyse qualitative and quantitative data.

According to Lewins & Gibbs (2007) Qualitative Data Analysis (QDA) “is the range of processes and procedures whereby we move from the qualitative data that have been collected into some form of explanation, understanding or interpretation of the people and situations we are investigating”. Wamundila (2008) informs that qualitative studies are unique and often employ unique data analysis strategies. Leedy & Ormrod (2005) also echo similar sentiments as they indicate that “there is no single or best way" for achieving order and understating when analysing and interpreting qualitative data but certainly it “requires
creativity, discipline and a systematic approach”. Thus, Leedy & Ormrod (2005)) informs that “qualitative data analysis consists of identifying, coding, and categorising patterns found in the data”. For Wamundila (2008), the analysis process involves the following steps:

- Get to know the data;
- Focus the analysis;
- Categorise information;
- Identify patterns and connections within and between categories; and
- Interpretation – bring it all together.

Although it is agreeable that a systematic approach as outlined above is necessary for data analysis, Wamundila (2008) further indicate the choice for either analysing qualitative data manually or using a computer program such as a word processing program, relational database management program (for example Access) or a special qualitative data analysis program depends on the “size of the data set, resources available, preferences and level of analysis needed or warranted”. There are number of specialised qualitative data analysis software that researchers can be able to use. Among them are Atlas/ti, Nudist and NVivo (Wamundila, 2008).

On the other hand, quantitative data analysis involves analysing quantifiable data. Due to quantitative data is usually being voluminous, application of computer software that aids the analysis process has been in use for a long time. Common software used includes SPSS® (Jones, 2007). While it has been agreed that specialised qualitative data analysis software enhance the analysis of large volumes of data, researchers have been urged to be mindful of the fact that qualitative studies are not undertaken with a view to generalise findings and that responsibility of interpreting the process of analysis is entirely their jurisdiction (Wamundila, 2008). The researcher took note of this guidance in the data analysis process in this study and thus limited the use of software to a word processing program (Microsoft Word®).
3.5.1. INTERVIEW DATA ANALYSIS

The interviews of 30 minutes to 45 minutes long each were conducted in the workplace, notes taken with permission by an experienced note-taker and transcribed verbatim. The anonymity of interviewees was preserved. Interviews were completed in three stages to allow theoretical sampling, whereby the focus of interview questions in each round was informed by data analysis of the previous stage(s) (Mauelshagen, 2012). This approach allowed the researcher to focus on themes relevant to the research question as they emerged while remaining open to new variables. The three stages comprised: scoping interviews (two); first tranche of interviews (three) and second tranche of interviews (five). In each tranche, respondents will constitute a diagonal cross-section of the organisation, representing a broad section of hierarchical and functional divisions, from the senior executives and risk managers.

3.6. DATA RELIABILITY

The reliability of a measurement instrument is the extent to which it yields consistent results when the characteristic being measured has not changed. It is essential that the reliability of a developing interview guide can be demonstrated. Reliability refers to the repeatability, stability or internal consistency of an interview guide (Rattray & Jones, 2007). One of the most common ways to demonstrate this uses the Cronbach’s statistic. This statistic uses inter-item correlations to determine whether constituent items are measuring the same domain (Rattray & Jones, 2007). If the items show good internal consistency, Cronbach’s should exceed 0.70 for a developing questionnaire or 0.80 for an established questionnaire (Rattray & Jones, 2007). It is usual to report the Cronbach’s a statistic for the separate domains within a questionnaire rather than for the entire questionnaire.

Several forms of reliability are identified (Leedy & Ormrod, 2005):

- Interpreter reliability is the extent to which two or more individuals evaluating the same product or performance give identical judgements.
- Internal consistency reliability is the extent to which all the items within a single instrument yield similar results.
Equivalent forms reliability is the extent to which two different versions of the same instrument yield similar results.

Test-retest reliability is the extent to which the same instrument yields the same result on two different occasions.

The researcher tested the internal consistency which involved correlating the responses to each question in each response with those of other questions in the interview guide (Saunders, Lewis, & Thornhill, 2007). The internal consistency was therefore tested per section of the interview guide.

3.7. DATA VALIDITY

Credibility (validity) of data gathered during interviews was established by triangulation between data sources (interviews and documents) (Yin 2008). The idea of reliability is important for measuring. The method used is carefully explained throughout this research.

The sample selection is based upon non-probability. The people are selected because of their positions of authority and responsibility in this area. The respondents are free to answer the interview questions without undue stress which would have negative effects upon the reliability of this study. This study is possible to reproduce with consistent results.

Further verification of results and mitigation of researcher bias was achieved through comparison of the results produced by member checking and peer review (Yin 2008). For member checking, results were sent to all interviewees and feedback requested. However, because of the low sample size further feedback was sought from the individual respondents. The researcher strove to be upfront and explicit about theoretical influences and his epistemological stance in the research process. Key theories that retrospectively influenced interpretation of data and results included sense making; schemata and mental models; a constructivist and discourse based view of the organisation; community of practice theory (Mauelshagen, 2012); coordination theory; and a knowledge based theory of the organisation (Mauelshagen, 2012).
Finally, during the interviewing process, an interview guide was sent as a pilot study to non-survey respondents to ensure that the interview guide is understandable and acceptable. And the empirical data was analysed manually, which could inadvertently introduce errors into the process. As a result, feedback was sought from the individual respondents. Additionally, thirty-percent of the respondents were presented with the extensive notes taken during the interview in order to validate that it was an accurate reflection of what was said. Therefore, this research can safely be said to be fairly valid.

3.8. RESEARCHER INFLUENCE
The possibility that the researcher may have influenced the responses of the interviewees, for example through choice of language or even through his appearance or presence, cannot be completely removed (Labov, 1971). To minimise this risk, the researcher was mindful of his choice of language and aimed to influence the interviewees as little as possible (Mauelshagen, 2012). A balance was struck between minimal influence and encouraging the interviewee to be as forthcoming as possible.

Depending on the interviewees attitude and willingness to talk the researcher adapted his interview style. Typically, in each interview the researcher covered all six levels in Whyte’s (1982) directiveness scale of interview technique. The researcher tried to make interviewees as comfortable and relaxed as possible. The researcher used simple language and avoided jargon in questions and conversation to avoid the interviewee viewing the researcher as an expert in risk management and modifying their responses as a result. To avoid this possibility and encourage the interviewee to be candid and truthful, the researcher stressed upon the respondents that the researcher was there to ‘learn from them as an expert in managing risk by virtue of their own jobs’.

3.9. CHAPTER SUMMARY AND CONCLUSION
This chapter presented the methodology used in this research study. The approach used for selection of respondents and interviewees has been explained, methods used for data collection have been discussed and an evaluation of the methodology has been provided. The next chapter, Chapter Four, presents findings of the study based on empirical data collected through literature review, interviews, interview guide and concluding remarks.
CHAPTER 4: DATA ANALYSIS AND DISCUSSION

This chapter is comprised of three sections. In this chapter, the empirical data collected from unstructured interview surveys will be presented. In the first section the results of the research survey are given. The subsequent section is composed of the analysis conducted on the compiled data, the results given together with the inferences about risk management processes and commentaries on the proposed risk maturity model. In the final section, revision of the model is explained, which was derived from literature review and analysis of the research data.

4.1. INTRODUCTION

The previous chapter addressed the methodology used in data collection for the study. The case study approach adopted a qualitative method for data collection. This method included document review and face-to-face, one-on-one interview surveys with the senior executives, risk managers and other officials as deemed appropriate as selected by the researcher.

This chapter presents findings of the data collected for this research study. Data was collected based on the objectives of the study as they appear in Appendix A. The first section presents findings of the interviews carried out. As the interpretation of findings indicate, based on the applicability and usefulness, the four attributes of capability maturity model identified through the literature review used as a basis for developing a risk maturity model for Liberty Life. This chapter further presents summary of major findings, conclusion and recommendations. The framework regarding general design principles provided in the Table 2.7 below is used to present the findings below.
Table 2.7: A Framework of General Design Principles for Maturity Models

<table>
<thead>
<tr>
<th>Group</th>
<th>Design Principles</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Basic</strong></td>
</tr>
<tr>
<td>1.1</td>
<td><strong>Basic information</strong></td>
</tr>
<tr>
<td></td>
<td>a) Application domain and prerequisites for applicability</td>
</tr>
<tr>
<td></td>
<td>b) Purpose of use</td>
</tr>
<tr>
<td></td>
<td>c) Target group</td>
</tr>
<tr>
<td></td>
<td>d) Class of entities under investigation</td>
</tr>
<tr>
<td></td>
<td>e) Differentiation from related maturity models</td>
</tr>
<tr>
<td></td>
<td>f) Design process and extent of empirical validation</td>
</tr>
<tr>
<td>1.2</td>
<td><strong>Definition of central constructs related to maturity and maturation</strong></td>
</tr>
<tr>
<td></td>
<td>a) Maturity and dimensions of maturity</td>
</tr>
<tr>
<td></td>
<td>b) Maturity levels and maturation paths</td>
</tr>
<tr>
<td></td>
<td>c) Available levels of granularity of maturation</td>
</tr>
<tr>
<td></td>
<td>d) Underpinning theoretical foundations with respect to evolution and change</td>
</tr>
<tr>
<td>1.3</td>
<td><strong>Definition of central constructs related to the application domain</strong></td>
</tr>
<tr>
<td>1.4</td>
<td><strong>Target group-oriented documentation</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Descriptive</strong></td>
</tr>
<tr>
<td>2.1</td>
<td><strong>Inter-subjectively verifiable criteria for each maturity level and level of granularity</strong></td>
</tr>
<tr>
<td>2.2</td>
<td><strong>Target group-oriented assessment methodology</strong></td>
</tr>
<tr>
<td></td>
<td>a) Procedure model</td>
</tr>
<tr>
<td></td>
<td>b) Advice on the assessment of criteria</td>
</tr>
<tr>
<td></td>
<td>c) Advice on the adaptation and configuration of criteria</td>
</tr>
<tr>
<td></td>
<td>d) Expert knowledge from previous application</td>
</tr>
<tr>
<td></td>
<td><strong>Prescriptive</strong></td>
</tr>
<tr>
<td>3.1</td>
<td><strong>Improvement measures for each maturity level and level of granularity</strong></td>
</tr>
<tr>
<td>3.2</td>
<td><strong>Decision calculus for selecting improvement measures</strong></td>
</tr>
<tr>
<td></td>
<td>a) Explication of relevant objectives</td>
</tr>
<tr>
<td></td>
<td>b) Explication of relevant factors of influence</td>
</tr>
<tr>
<td></td>
<td>c) Distinction between an external reporting and an internal improvement perspective</td>
</tr>
<tr>
<td>3.3</td>
<td><strong>Target group-oriented decision methodology</strong></td>
</tr>
<tr>
<td></td>
<td>a) Procedure model</td>
</tr>
<tr>
<td></td>
<td>b) Advice on the assessment of variables</td>
</tr>
<tr>
<td></td>
<td>c) Advice on the concretization and adaption of the improvement measures</td>
</tr>
<tr>
<td></td>
<td>d) Advice on the adaptation and configuration of the decision calculus</td>
</tr>
<tr>
<td></td>
<td>e) Expert knowledge from previous application</td>
</tr>
</tbody>
</table>

(Source: Adapted from Röglinger, Pöppelbuß & Becker, 2012)
With maturity models representing theories of stage-based evolution, their basic purpose consists in describing stages and maturation paths. Accordingly, characteristics for each stage and the logical relationship between successive stages need to be explicated (Kuznets, 1965). As for their application in practice, maturity models are expected to disclose current and desirable maturity levels and to include respective improvement measures. The intention is to diagnose and eliminate deficient capabilities (Pöppelbuß, 2011:3). Pöppelbuß (2011) suggested that; metaphorically refer to such tools as engines for continuously improving systems, roadmaps for guiding organisations, and blueprints for designing new entities. Typically, the following application-specific purposes of use are distinguished (de Bruin, et al. 2009):

- **Descriptive:** A maturity model serves a descriptive purpose of use if it is applied for as-is assessments where the current capabilities of the entity under investigation are assessed with respect to given criteria (Becker & Kahn, 2010). The maturity model is used as a diagnostic tool. The assigned maturity levels can then be reported to internal and external stakeholders.

- **Prescriptive:** A maturity model serves a prescriptive purpose of use if it indicates how to identify desirable maturity levels and provides guidelines on improvement measures (Becker et al. 2009).

- **Comparative:** A maturity model serves a comparative purpose of use if it allows for internal or external benchmarking. Given sufficient historical data from a large number of assessment respondents, the maturity levels of similar business units and organisations can be compared.

As discussed in Chapter 2, although such design principles (DPs) may be useful for evaluating alternative maturity models, they can only partially be influenced during maturity model design (Pöppelbuß, 2011). The DP groups are organised into the following groups: 1) Basic Design Principles, 2) Design Principles for Descriptive Purpose of Use, and 3) Design Principles for Prescriptive Purpose of Use. Basic DPs should be addressed independently of a specific purpose of use. Descriptive maturity models should also comply with the basic DPs. Prescriptive maturity models should fulfil the DPs for descriptive maturity models and the basic DPs. In the following, each DP is defined in terms of what it
means and how it is justified by existing literature. The framework intends to assist practitioners and researchers with comparing existing maturity models. It also serves as a “checklist” when designing new maturity models (Pöppelbuß, 2011:5).

4.2. RESULTS OF THE SURVEY
After a thorough examination of the reviewed six maturity models dealing with risk management, several advantageous and disadvantageous points were identified, both in terms of content and in terms of usability. Brief descriptions of the models are presented in Section 2.4 of Chapter 2. In Sections 2.1.3 and 2.3.7, specific characteristics of the models were identified, described/evaluated and compared. As a result of the aforementioned reasons, instead of taking and using one of them as the tool for this study; all six reviewed models were utilised in the development of the proposed risk maturity model, as well as the reviewed Liberty Life-specific attributes and long-term insurance industry specific issues.

The attributes are composed of dimensions, which are the issues questioned under cover, as presented in Table 4.1. The content of each attribute is briefly described herein.

Table 4.1: Attributes and Dimensions of the Proposed Risk Maturity Model

<table>
<thead>
<tr>
<th>ATTRIBUTES</th>
<th>DIMENSIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Culture</td>
<td>This attribute describes the attitude, commitment and degree of support from the governing body and senior management with regard to risk management, referring in particular to the extent to which the risk management framework is adopted and implemented. It includes aspects such as setting a risk management policy (including the determination of the risk appetite), the level of integration of various risk management initiatives across the organisation, starting with the integration of risk management within the strategy setting process, internal and external communication (including the overall awareness of the importance of risk management), and the coordination between various parties.</td>
</tr>
<tr>
<td>Experience</td>
<td>Personnel should be equipped and supported to manage risk promptly and</td>
</tr>
<tr>
<td>ATTRIBUTES</td>
<td>DIMENSIONS</td>
</tr>
<tr>
<td>------------</td>
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</tr>
<tr>
<td></td>
<td>appropriately as risks could materialise on all levels of the organisation. This attribute includes the need for risk tasks to be performed by qualified staff with the appropriate range and depth of knowledge, skills, and competencies and a positive attitude. Furthermore, management should ensure that sufficient resources are allocated to the staff in the form of training or personal development.</td>
</tr>
<tr>
<td>Application</td>
<td>This attribute refers to the application as well as to the performance measurement of the adequacy of the risk management framework, with reference to aspects such as resource allocation, policies, the risk management process, implementation of the risk response within the boundaries of the risk appetite, quality of communication, and the achievement of objectives, to name but a few of the areas that should be covered in a comprehensive risk management framework.</td>
</tr>
<tr>
<td>Process</td>
<td>This attribute refers to the steps and initiatives undertaken to identify (uncovering and cause), assess, evaluate, mitigate and monitor risks. It includes the integration with other business processes as well as the risk appetite accepted by management, and how the accountability of various parties is used to guide decision-making and to eliminate gaps.</td>
</tr>
</tbody>
</table>

(Source: Author Self-developed)

Arising from detailed comparison conducted in Section 2.4.7 of Chapter 2, the model developed by Hillson (2006) was chosen as the most comprehensive and therefore the most appropriate for the purpose of developing a risk maturity model for Liberty Life.

Through a literature review, the common attributes used in model development of the models were identified and used as the basis for developing the proposed model (see Appendix E for proposed risk maturity model), the model needed to be adapted to address particular aspects as discussed hereafter. Firstly, the model was adapted to address the limitations identified after completing the comparison of all the models’ attribute. Secondly, as the model was developed for all RIMS members on a global scale, the model had to be
adapted to address Liberty Life specific requirements. Four further attributes were identified by respondents and subsequently added on, namely: 1) Involvement in Strategy Setting 2) Risk Management Performance Measures 3) Internal Audit – Assurance 4) Reporting/Communication. Deliverables for the five maturity levels of these two areas were developed by interviewing various senior executives and risk managers at Liberty Life, but as subordinate to the guidance contained in the second subordinated to the guidance contained in the second King Report.

In this section, the results of the interview survey are presented. Results are interpreted for the case study and are given in the following sub-sections together with the commentaries made by the respondents. A complete record of responses is given below and supported by the interview guide, schedule and detailed survey results are provided in Appendices A, B and C.

4.2.1. ATTRIBUTE 1: CULTURE
The majority of the research respondents surveyed unanimously agreed that an effective risk culture is one that enables and rewards individuals and groups for taking the right risks in an informed manner. Equally important, they argued that inappropriate behaviours should be challenged and sanctioned. Secondly, a consensus was also reached by the respondents surveyed on the fact that, a distinct and consistent tone from the top from the board and senior management in respect of risk taking and avoidance (and also consideration of tone at all levels) would lead to a successful risk culture being embedded throughout the organisation. Thirdly, during the discussions, it was further highlighted that critical issues in risk culture were being played out in the space between what is called First and Second Lines of Defense, suggesting that this distinction, which many take for granted, may not be helpful in advancing the debate about risk culture. Finally, improving risk culture was also regarded by majority of research respondents as a matter of improving the organisational footprint of the risk management function.

The respondent 4 surveyed, cited the recent corporate scandals and failures such as LIBOR manipulation, Barings Bank, Enron as classic examples in which many of these features were notably absent. Problems with risk culture are frequently found at the root of
organisational scandals and collapses. In another case cited by the same research participant, in May 2012, JP Morgan incurred a multi-billion trading loss on its "synthetic trading portfolio". By its own admission, JP Morgan reported that the events that led to the company’s losses included inadequate understanding by the traders of the risk they were taking, ineffective challenge of traders’ judgement by risk control functions, weak risk governance and inadequate scrutiny. Despite this apparent consensus on the importance of ‘risk culture’, there is little agreement on what ‘risk culture’ is and how it should be measured and managed in the organisation. To measure the impact of culture it is necessary to identify a casual relationship between inputs that can be controlled and the desired or required outcomes. The respondent 3 recommended the adoption of the model developed by Institute of Actuaries of Australia (Quantifying and Measuring a Risk Culture). Additionally, the respondent 4 provided ten questions that the Boards should ask itself regarding the ‘risk culture’ in their organisations and this is presented in Appendix G.

4.2.2. ATTRIBUTE 2: EXPERIENCE

The majority of the respondents surveyed further stressed the importance of a successful risk culture, which includes, but is not limited to: 1) risk management skills and knowledge valued, encouraged and developed, with a properly resourced risk management function and widespread membership of and support for professional bodies, 2) Professional qualifications supported as well as technical training, and 3) Alignment of culture management with employee engagement and people strategy to ensure that people are supportive socially but also strongly focused on the task in hand.

The respondents lamented that employees do not always readily co-operate with risk management initiatives. These respondents argued that employees’ attitude stems from the fact that they perhaps see risk management as bureaucracy with no value. Some are seen as reluctant to adopt new risk management processes due to lack of understanding and accountability for risk management, which is often not clear to the lower-level management or employees. Managers and employees alike often have to participate in risk assessment activities, compile risk reports and adhere to risk policies and procedures. Majority of the respondents suggested an employee risk awareness training as a tool to encourage them
to perform these responsibilities with greater commitment. It can build risk awareness and contribute to the organisation’s change management efforts.

The desired outcome is that managers should be proactive in responding to risk and see risk management in a positive light. Risk management should be a leadership competency and senior management can be role models for desired behaviours. The research respondents surveyed agreed that, these outcomes can be enabled through training.

4.2.3. ATTRIBUTE 3: APPLICATION
Four of the research respondents attributed inadequate risk management execution to poor risk culture and lack of experience. They cited as an example, for operational risk types, not enough data and information exists for use to improve the current risk management practice by taking into account lessons learned from past events. Lack of established key performance indicators, risk indicators analytical tools exacerbates the current challenge were also cited as contributory factors by the respondents surveyed. As a consequence, performance is evaluated after the fact. It was further noted by the research respondents that, alternative scenarios were not always considered in periodic stress tests of financial models. As a result, models were not regularly adapted to take into account changed internal operating conditions and external markets. Finally, the research respondents also raised a concern about a familiar issue – the role of documentation. The argument was that some documentary and evidentiary demands were creating the wrong kind of risk culture.

Risk culture poses some unique problems of documentation, as organisations increasingly need to be good at ‘writing things down’. This poses a challenge in terms of maintaining a good relationship with regulators and making the best use of risk culture toolkits that stimulate valuable discussion and informal interaction.

4.2.4. ATTRIBUTE 4: PROCESS
According to the guidelines outlined in the King III report, the risk management process is inseparable from the company’s strategic and business procedures. Corporate governance is an important aspect of running a successful business, as stakeholders including potential investors, shareholders, employees, government (local and national) as well as non-
governmental movements would look into an organisation’s governance framework to form a perception about the competence of that organisation.

Risk Management is only one of the many levers of an organisation’s combined assurance function. The combined assurance function includes elements such as the risk, compliance, legal and internal as well as external auditing roles. These levers are related but vary in their approach; put together they provide reasonable governance assurance to any organisation. Hence, they are required when one evaluates the effectiveness of an organisation’s governance framework.

According to the majority of the research respondents surveyed suggested that, although the Enterprise Value and Risk Management (EVRM) Framework have been approved by the Board of Liberty Group Holdings for implementation in 2008/2009, they do not believe that this framework has been embedded into organisation-wide process management activities due to lack of an independent and continuous assessment and measurement of the effectiveness of their organisation’s risk management process. A number of the research respondents also highlighted a need to invest in better processes and technology in the future when ascending the maturity cycle. A number of respondents survey acknowledged efforts currently underway in their organisation to address most of the concerns highlighted above.

4.2.5. ADDITIONAL ATTRIBUTES IDENTIFIED BY SURVEY RESPONDENTS

4.2.5.1. Attribute 5: Involvement in Strategy Setting
Objectives must exist before management can identify potential events affecting their achievement. Majority of the research respondents surveyed believes that the involvement of risk management in strategy setting will ensure that management considers the entity’s risk appetite in evaluating strategic alternatives, setting related objectives, and developing mechanisms to manage related risks. One of the survey respondents argued that, risk quantification methods such as the stress-testing of assumptions which allows for better forecasting and planning of the capital buffers to hold should be forward-looking and used to change and challenge the risk decisions, including risk diversification strategies in the organisation.
Although currently being a case at Liberty Life, the research respondents would like the current capability and maturity of this practice included in the proposed risk maturity model for measuring in the future. This practice is highly advocated by the COSO model (2004). It is anticipated by the research respondents that the proposed changes to be brought about by SAM regime will result in a reasonable forecasting accuracy of the buffers to hold for liquid assets, enhance stress testing, and introduce a more rigorous internal pricing structure for new products.

4.2.5.2. Attribute 6: Performance Measurement

Increasingly, boards of directors and senior executive teams are exploring the concept of enterprise risk management (ERM) to better connect their risk oversight practices with the execution of their strategic plan. ERM has become an important emerging business discipline that has attracted the attention of regulators, financial markets, and rating agencies as they examine firms within their areas of responsibility and interest. The recent financial crisis, emerging political unrest in nations around the globe, and the impact of significant natural disasters are placing even more emphasis on the importance of robust and strategic risk management practices in organisations of all types and sizes. In spite of this increased focus on ERM, organisations still find it difficult to understand how ERM differs from traditional risk management, and what an effective ERM process looks like (CGMA, 2012).

The majority of the research respondents surveyed agreed that suitable and effective risk maturity models are needed in the organisation to continuously assess and measure the capability and maturity of their organisational risk management process. They believe that this outcome will provide them with a stepping-stone approach which in turn will assist their organisation in progressively reaching the desired maturity levels. One of the research respondents surveyed noted that the benefits of using a maturity model when determining the risk maturity level as increasingly being recognised by individuals, organisations and governments worldwide. At present Value-at-Risk (VaR) and Economic Capital Embedded (ECE) models (risk quantification metrics) are used at Liberty Life to assess and measure the risk of trading activities.
4.2.5.3. Attribute 7: Assurance

Internal auditing is an independent, objective assurance and consulting activity. Its core role with regard to ERM is to provide objective assurance to the board on the effectiveness of risk management. Indeed, research has shown that board directors and internal auditors agree that the two most important ways that internal audit provides value to the organisation are in providing objective assurance that the major business risks are being managed appropriately and providing assurance that the risk management and internal control framework is operating effectively. Figure 2.5 presents a range of ERM activities and indicates which roles an effective professional internal audit function should and, equally importantly, should not undertake.

Majority of the research respondents surveyed, believes that the internal audit function can assist the organisation to maximise its effectiveness by recommending that the risk management initiative receives the support and commitment from senior management. This in turn will help to set the proper tone at the top for the program, as well as ensure that controls are managed properly and implemented risk management policies and procedures are adhered to by company staff. In addition, the proper tone at the top will help to establish the organisation's attitude toward risk and the kinds of risks that are acceptable. Finally, the audit team should have the proper training or expertise in the area of risk management to identify and rate risk levels as well as evaluate controls to determine if they meet the organisation's risk management needs. At present, the respondents feel that the internal audit role in enterprise risk management is not adequate.

4.2.5.4. Attribute 8: Information and Communication

Relevant information is identified, captured, and communicated in a form and timeframe that enable people to carry out their responsibilities. Effective communication also occurs in a broader sense, flowing down, across, and up the entity. One of the research respondents surveyed, argued that the current practice needs improving to ensure transparent and timely risk information flowing up and down the organisation with bad news rapidly communicated without fear of blame. The same participant further emphasized that risk event reporting and whistle blowing; actively seeking to learn from mistakes and near misses should be actively encouraged going forward.
4.3. APPLYING THE GENERAL DESIGN PRINCIPLES TO EMPIRICAL STUDY AND CONCLUSION

4.3.1. BASIC DESIGN PRINCIPLES

DP 1.1: Maturity models have to provide a set of basic information, of which the application domain – together with prerequisites of applicability – is an essential part. Moreover, the purpose of use, the target group, and the class of entities under investigation need to be documented. The proposed risk maturity and associated questionnaire will be used by Liberty Life to assess capability maturity of its current risk management practices. The model will be used in line with its approved the “Three-lines of Defense – Risk Governance” model. The results of the maturity assessment will be reported to the relevant sub-committees of the Board charged with the responsibility of managing risk in the organisation. Once tested and proven to be appropriate to Liberty Life, proposed model should be incorporated into its ERM Framework and communicated in an understandable way to the relevant business units and functions within the organisation. Communication will include – among other – to what extent a maturity model has already been subject to empirical validation (e.g., by means of interviews with domain experts, case studies, focus groups, or surveys addressing the relationship between maturity model usage and corporate performance).

DP 1.2: With maturation as primary subject matter, maturity models are required to define central constructs related to maturity and maturation. Although most maturity models do not define but draws the circle around the maturity, the proposed risk maturity model for Liberty Life has defined what maturity means in relation to the class of entities and application domain under investigation (see DP 1.1 and Appendix E). The proposed model is clearly depicted with a one-dimensional diagram (e.g., attribute and/or object maturity – see Appendix E). Maturity levels are central constituents of maturation paths. Each level has to be identified by a concise descriptor (see Appendix E) Moreover, the rationale behind maturation has been disclosed by means of the logical relationship between successive levels. Finally, the proposed risk maturity model explicates the underpinning theoretical foundations of evolution and change with respect to the class of entities under investigation. This includes among other things information about the way change typically happens in the respective application domain as well as about drivers and barriers of maturation.
**DP 1.3**: Besides defining constructs related to maturity and maturation, maturity models have to include definitions of central constructs related to the application domain. This conforms to the qualities of “understandability” and “language adequacy” proposed by Pöppelbuß (2011) and Becker & Kahn (2010) respectively. The definitions of central constructs related to the application domain have been incorporated into the proposed risk maturity model (see Appendix E) and associated questionnaire (see Appendix F).

**DP 1.4**: The basic information, the central constructs, and their interrelations need to be documented in a target group-oriented manner. This is justified by the requirement of “communication”. By integrating the proposed risk maturity model into its current ERM Framework, this will enable Liberty Life to ensure that the basic information, the central constructs and their interrelations are documented in a target group-oriented manner.

### 4.3.2. DESIGN PRINCIPLES FOR A DESCRIPTIVE PURPOSE OF USE

**DP 2.1**: Maturity models following a descriptive purpose of use need to propose assessment criteria for each maturity level and available level of granularity. The proposed risk maturity model has a supporting artefact, i.e., the assessment questionnaire (Appendix F). Maturity models that operationalise maturity by means of multiple dimensions can refer to these dimensions for deducing and structuring assessment criteria (see DP 1.2). In order to ensure the comparability of maturity assessments, the criteria defined and incorporated exhibits a high level of inter-subjective verifiability, i.e., the corresponding descriptions are precise, concise, and clear to discriminate between levels (see Appendices E and F).

**DP 2.2**: Not only the criteria, but also the assessment methodology needs to be inter-subjectively verifiable, which is particularly difficult in complex application domains. Thereby, assessment methodologies need to feature a procedure model that guides model users through maturity assessments by elaborating on the assessment steps, their interplay, and particularly on how to elicit the criteria’s values. Results from an assessment need to be “correct, accurate, and repeatable”. Moreover, they should provide advice on how to adapt or configure the criteria according to different situational characteristics. Finally, assessment methodologies should report available knowledge from previous
applications. The proposed risk maturity model satisfies these requirements as evidenced in have been satisfied as depicted on Appendices E and F. Furthermore, section 5.1.2.1 elaborates on the assessment steps, their interplay and particularly on how to elicit the criteria’s values (see Appendix F).

4.3.3. DESIGN PRINCIPLES FOR A PRESCRIPTIVE PURPOSE OF USE

DP 3.1: Maturity models following a prescriptive purpose of use need to include improvement measures for each maturity level and available level of granularity in the sense of good or best practices. The proposed risk maturity model satisfies these requirements as evidenced in have been satisfied as depicted on Appendices E and F. This model discloses potential for improvement.

DP 3.2: In order to enable maturity model users to select improvement measures, prescriptive maturity models should include a decision calculus. According to decision theory, a decision calculus assist decision makers to evaluate different alternatives with respect to given objectives and to identify which (optimal) alternative satisfies the objectives best. In the context of maturity models, an alternative includes a set of improvement measures to be implemented. As most maturity models refer to a business context, it is corporate performance that determines the objective system of improvement measure selection. If possible, the decision calculus should point out factors that influence corporate performance as well as how these factors in turn would be influenced by implementing distinct improvement measures. In line with the possible existence of multiple levels of granularity (see DP 1.2), the decision calculus should distinguish between external reporting and internal improvement endeavours.

For example, if a company intends to satisfy a potential customer’s request for a distinct overall maturity level (on corporate level), the decision calculus should consider this as an (additional) restriction when identifying the optimal set of improvement measures. If maturation is motivated purely from inside the organisation, those improvement measures should be pursued that generate the greatest value for the organisation independent of external restrictions or overall maturity.

The proposed risk maturity model satisfy these requirements as evidenced in have been
satisfied as depicted on Appendices E and F. By integrating this model into its risk management framework, this will enable Liberty Life to pursue only the improvement measures that generate the greatest to its shareholders and other stakeholders.

**DP 3.3:** Analogous to DP 2.3, maturity models following a prescriptive purpose of use are required to define a target group-oriented decision methodology. Again, the most essential component is the procedure model that guides model users through the steps of improvement measure selection – particularly with respect to the elicitation of the relevant variables’ values. The decision methodology should also provide advice on how to concretize and adapt improvement measures as well as on how to adapt and configure the decision calculus itself. Finally, it should report available knowledge from previous applications if possible. By integrating this model into its risk management framework, this will enable Liberty Life concretize and adapt improvement measures as well as how to adapt and configure the decision calculus (Liberty Life – Risk Impact Rating Tables/Scales).

### 4.4. CHAPTER SUMMARY

It is widely recognised that problems with organisational culture played a major role in the financial crisis which crystallised in the late 2000s. ‘Risk culture’ in particular has become an object of focus and discussion by regulators and other bodies, yet there is no consensus on exactly what it is or how it might be managed (Ashby, Palermo, & Power, 2012:4). Much of the commentary and analysis about the actions of financial organisations, from the global financial crisis to events such as product mis-selling, rogue trading and the recent LIBOR scandal, share a common and fundamental focus. It is argued that these problems arose because of weaknesses in the cultures of the banks and other financial institutions (BOFIs) (Ashby, Palermo, & Power, 2012:5).

With regard to the face-to-face interviews with the respondents, the approach of the organisation was evaluated and found to be open for innovation and change. The respondents stated that especially in the preceding years, the company had been undertaking a development process for the risk management activities. Liberty Life has initiated a Solvency Assessment and Management (SAM) programme to improve its current risk management capability and maturity. The respondents stated that they believe in the
importance of risk management and consider it as one of the areas for the organisation which is open to improvement. They believed the systematic application of risk management to be an asset and advantage for their company. They also noted that requirements that come with specifications like ISO 31000 and COSO ERM had already entailed the use of risk management. The individual interpretations of the attributes for Liberty Life are presented in Appendix D. It includes the additional attributes identified by the research respondents surveyed and requested for inclusion in the proposed risk maturity model for the organisation. It is believed by most of the research respondents that continuous measuring of the risk management process will help their organisation to avoid some of the risk management failures reported as major contributory factor to some of the recent corporate scandals (e.g., Enron, Worldcom, Tyco and Shell) and failures such as:

- Poor governance and “tone at the top”.
- Reckless risk taking.
- Inability to implement enterprise risk management.
- Non-existent, ineffective or inefficient risk assessment.
- Falling prey to a “herd mentality”.
- Misunderstanding the “if you can’t measure it, you can’t manage it” mindset.
- Accepting a lack of transparency in high-risk areas.
- Not integrating risk management with strategy-setting and performance management.
- Ignoring the dysfunctionalities and “blind spots” of the organisation’s culture.
- Not involving the board in a timely manner.
CHAPTER 5: CONCLUSION AND RECOMMENDATIONS

In this chapter is firstly a summary of the study, organisation by a succinct explanation of its aim and the principal stages. Then a discussion on how this study can be organisation for practical purposes and the main research findings are given. The chapter is concluded with the limitations of the study and recommendations for future research.

5.1. INTRODUCTION

5.1.1. SUMMARY OF THE RESEARCH

An effective Enterprise Risk Management (ERM) provides a reasonable assurance on the achievement of the entity’s objectives. But a reasonable assurance does not mean absolute assurance. Even effective ERM can experience a failure. A failure can be due to judgment mistakes, collusion and illegitimate activities. An entity is made up of people, each of them having different experiences and cultures that affect their judgments.

Value and benefits realised are increasingly being recognised by Liberty Life. Risk management applications are rapidly growing in the long-term insurance sector. Risk management is accepted as the major agent in ensuring successful business and project management and as a critical success factor for organisations, aiming at proper functioning of the projects and organisations. There is a growing amount of research on risk management, although some areas are still open to improvement. There is no much research conducted on “maturity” models appropriate for measuring risk management for long-term insurance companies, although various generic maturity models and models specific to other industries in the area of risk management have been developed. For example, risk capability maturity model used for complex projects (CoPS) discussed in Chapter 2.

Maturity models are aimed at assessing the current capability maturity of an organisation in a particular area, aid in the determination of strengths and weaknesses, and by that means, assist in the development of targeted improvement strategies for companies. Improved risk
management maturity would mean enhanced risk management practices, a mature organisational culture with risk awareness and advanced communication within the company and among project stakeholders, better use of organisational resources for risk management and all in all, a stronger structure in terms of risk management. From this point of view, this study was intended to investigate business management maturity models and propose an appropriate model for use at Liberty Life.

Subsequent to model development, the applicability and usefulness of the model was examined through a case study within Liberty Life. A total of ten respondents made of 5 senior executives and 5 risk managers were selected among the 30 members of the risk management community within Liberty Life using the research methodology described in Chapter 3.

5.1.2. CHAPTER SUMMARY AND CONCLUSION

5.1.2.1. Proposed Risk Maturity Model for Liberty Life

Growth in the development and use of maturity models provides strong support for the relevance of the maturity assessment approach in practice. As stated by Carcary (2013), “as organisations constantly face the pressures to obtain and retain competitive advantage, invent and reinvent new products and services, reduce cost and time to market, and enhance quality at the same time, the need for and the development of new maturity models will certainly not diminish given that they assist decision makers to balance these sometimes divergent objectives on a more or less comprehensive manner”. Based on the literature, the greatest concern regarding this assessment approach is the processes involved in maturity model development – rather than building on a theoretical basis, many models are simply based on practices drawn from organisation or industry specific projects that demonstrated favourable results, for many models there is a lack of model testing in terms of validity, reliability and generalisability, and little documentation on how the model was designed and developed. (Carcary, 2013).

Risk management is an area of research that needs continued development. Many companies strive to improve their risk assessment processes by using simple tools and methods. Many of the available tools and methods are extensive and involve statistical
models that require large amounts of input. These methods seem less feasible for implementation in rather immature processes.

The proposed model for assessing capability maturity of risk management process within Liberty Life is based on the results of the research study on the risk definition, the process of risk management and maturity models. To define this model, based on a literature review and input obtained from the survey respondents, the following eight attributes were identified and ranked in the order of importance to Liberty Life:

1. Culture;
2. Involvement in strategy setting;
3. Experience;
4. Application;
5. Process;
6. Performance measurement;
7. Assurance; and
8. Reporting/communication.

The framework of the model was initially constructed with four attributes and their relative dimensions, as presented in the material section of Chapter 2. The questionnaire based on the framework is composed of thirty three (33) main questions and given in Appendix F. This model proposes the following approach for assessing the maturity of a risk management process:

- List all the risk management activities.
- For each activity identified:
  - Define its eight attributes.
  - Assess the level of maturity for each activity and attribute.
  - Assess the level of maturity of each activity by a formula that consolidates the all the attributes with its weights for the risk management.
  - Assess the level of maturity of the whole process by a formula that consolidates (e.g., risk impact rating formula) all the activities.
- For all risk management activities:
• Estimate the level of maturity of each activity by a formula that consolidates the all risk management with its weights for the organisation.
• Estimate the level of maturity of the whole process by a formula that consolidates the all activities.

The proposed model is represented under the matrix shape mentioned in the Appendix E. The model matrix lists all the risk management activities. Then, every activity is determined under its eight core attributes. The proposed model has five levels of maturity. This choice is justified by the studied literature and input obtained from the research respondents. Indeed, most of the selected models are structured at levels that number varies between four and five levels according to consider or not the risk management existence in the studied organisation. The five levels proposed are summarised as:

- **Level 1**: *Ad-hoc*: The work is based on individual initiatives. No methodology or procedure (based on the best practices) formalised and normalised. Everyone manages the risks in his way. The result is unpredictable.
- **Level 2**: *Initial*: There is an effort from stakeholders to use best practices. However, there are no standard methods or common criteria for evaluating results.
- **Level 3**: *Repeatable*: For each activity of the risk management process there are formalised and normalised techniques.
- **Level 4**: *Managed*: A knowledge base is built and it includes the return on experience. The organisation begins to measure the effectiveness and the relevance of risk management activities.
- **Level 5**: *Optimised*: Risk management activities are part of a continuous improvement process based on the results and measurements of the level 4.

### 5.2. MAIN SURVEY RESULTS

Based on the analysis of previously developed business maturity models, the researcher identified, customised and proposed a risk maturity model and associated maturity questionnaire for use at Liberty Life to enhance its existing risk management approach. The research has proposed a maturity model that could be used to frame improvement efforts and assess risk management maturity at Liberty Life. The proposed model can also be
used in business and IT projects for self-assessment purpose and to guide their improvement effort. Nevertheless, this research study is meant only a starting work towards a long journey to the improvement of risk management practice at Liberty Life. The main goal was to do initial work and open the door for further refinement and investigation and demonstrate the application of the concepts raised. The research presumed that future works will address the rest and the details. For example, the actual testing of the proposed risk maturity model for usefulness and applicability to Liberty Life specific operating environment.

The findings of the research surveys conducted revealed that the model is capable of differentiating attributes of different maturity and hence different levels of organisational maturity. It was seen through the case study that the interview guide was easy to comprehend and easy to apply based on a high level feedback received from the pilot-testing and respondents of the actual survey.

5.3. ACHIEVEMENT OF OBJECTIVES
The measurement of the success of this study is based upon the achievement of the primary and secondary objectives, as presented in Chapter 1 of the research study.

5.4. RESEARCH RECOMMENDATION
Enterprise Risk Management (ERM) is clearly a complex issue, and there are many critical questions that must be addressed in the formation of a robust ERM program. According to Deloitte (2008:11), because of the complexity and the length of time to achieve full maturity of the ERM capability, organisations should start the process now of laying a solid foundation upon which to develop a successful ERM program that satisfies the demands of regulators, rating agencies and other key stakeholders in the years to come.

The implementation of risk management into an organisation is not a minor challenge, and cannot be undertaken in a short period of time. Risk Management is not a simple process of identifying techniques, sending personnel to training courses, buying software and getting on with it. Risk management capability is a broad spectrum, ranging from the occasional informal application of risk techniques to specific projects, through routine formal processes
applied widely, to a risk-aware culture with proactive management of uncertainty. To manage risks more effectively, Liberty Life could benchmark their risk management strategies against best practices. This would ensure that their strategies are addressing all their needs, including checking the effective implementation of the identified and necessary risk management elements. One way of doing this is to assess the organisation’s risk maturity.

It is recommended that the risk maturity model (see Appendix E) proposed for Liberty Life be tested using a questionnaire (see Appendix F) developed to assess its applicability and usefulness in the future. Where necessary, refine and update this model to suit its business needs and goals. According to Fisher (2004:7), companies that progress up the mountain through each state of process maturity have the opportunity to gain efficiency, lower costs, improve customer satisfaction, grow the top line, and achieve competitive advantage. These advantages become more pronounced the further the company can progress. On the flip side, companies will find themselves in a disadvantageous state if they don’t progress, as their competitors will likely be trying to accomplish this same feat. Ultimately, to climb the mountain and organise these benefits, companies must understand that there will be high hurdles to overcome at each step in the maturity process, and the only way to overcome these challenges is to achieve organisational alignment around all eight Levers of Change by creating an enterprise-wide environment that supports and rewards the appropriate behavior at each step of the way.

The Risk Management Maturity Model (RMMM) presented in this report (Appendix E) and associated maturity questionnaire (Appendix F) will enable Liberty Life to benchmark its risk management capability against five standard levels of maturity. It will also allow Liberty Life to identify what needs to be done in order to improve and increase their ability to manage risk. Use of the RMMM will also enable customers, suppliers and other areas of the organisation to determine how well a project or organisation is implementing risk management, and can aid in the development of specific strategies for going to a higher maturity level. Liberty Group Holdings: Chief Risk Officer (CRO) has agreed for this model together with associated questionnaire to be tested in March 2014.
5.5. RECOMMENDATIONS FOR FUTURE RESEARCH

The best way to turn the made suggestions into practical tools is most likely to apply them on a set of projects and evaluate the results. This evaluation should focus on any noticeable quality changes between the proposed improvements and the current processes, as well as feasibility, i.e. if the methods are practical to use in daily work. The initial screening process should be further developed and the checklist issues quantified. The best way to do this is probably an iterative process with quantification and testing on the current risk management process. This research work is a starting one and needs be followed by a number of researches to investigate scopes which are not considered in this research and to refine the concepts raised and further enhance our understanding, and contribute to the construction PM knowledge pool.

Thus, this research recommends the following for further research and investigation:

- To determine the overall risk maturity capability of the industry, conducting similar studies by including other life assurers in operating in South Africa.
- Conducting further research to improve the proposed model to make it a generic model that could be used for assessment of risk management maturity of any organisation in any industry. The rating system can be developed in a way that interrelations and fuzzy borders between the attributes are taken into account.
- Extend the proposed maturity model/s process dimension of maturity definition and the assessment tools to the continually improved (optimisation) maturity level for possible use in the developing countries such as South Africa.
- Conduct further research to refine the model the models and the assessment questionnaire through active involvement of academicians and professionals using focus group and further extensive literatures review.
- Test the generalisability of the findings using quantitative methodologies, for example a standardised survey encompassing a large sample of organisations.
- Investigating the effect of different national cultures on the effectiveness of risk management process.
- Conduct a longitudinal study exploring the organisational factors involved in sustaining risk management capability.
Given the role of experience and expertise in risk management identified in this research and the research of others it would be interesting to explore how expertise was perceived in organisations and how that affected risk management capability.

What are the effects of regulation on risk culture? Is regulation making organisations more risk averse and more averse to the risk of regulatory censure? Is it having further unintended consequences around how organisations manage their risks? For example, does regulation increase attention to risk measurability?

How are risk culture tools actually used? There are a number of products in the consulting marketplace in addition to in-house change programmes.

Further, the following research questions have been identified that would build on this research study and add to understanding of risk governance (Mauelshagen, 2012):

- Does richness of informal communication affect organisational ability for proactive and adaptive risk management?
- How can organisations balance the benefits derived from allowing employees to use their expertise against the need for internal control and accountability to external stakeholders?
- How can organisations achieve sustained risk management capability?
- How can senior risk managers utilise the distributed expertise of organisational actors to inform strategic risk management decisions?
- How can informal communication within organisations be supported?
REFERENCES – LITERATURE CITED


Beasley, M. S., Branson, B. C., & Hancock, B. V. (2010, December). Developing Key Risk Indicators to Strengthen Enterprise Risk Management. Durham, USA.


APPENDIX A: INTERVIEW GUIDE ACCOMPANYING SAMPLE LETTER

The Group Risk Officer
Liberty Group Holdings
1 Ameshoff Street
Braamfontein
2017

12 August 2013

Dear Sir/s

RESEARCH TOWARDS COMPLETION OF M COM IN BUSINESS MANAGEMENT: RISK MATURITY AT A LIFE INSURER”

I am completing a Master of Commerce in Business Management degree through the University of Johannesburg (UJ). For my final year Research Report I have selected Risk Management in a long-term insurance industry as my topic, with specific reference to practical development of a maturity model to propose for use to measure capability maturity of Risk Management process for a Life Insurer (“Liberty Life”). As a registered long-term insurance company, I would be grateful for your contribution to this research by allowing me time in your busy schedule to interview you and other executives and risk professionals within your organisation on what you and them expect to be included in the proposed Risk Maturity Model in order for it to be useful and applicable to your organisation.

Based on previously developed business maturity models, the aim of this study is to propose a risk management maturity model to a Life Insurer (“Liberty Life”) using the five levels of capability and four dimensions of organisation, namely: Culture, Process, Experience and Application, which is simplified and designed to quickly target weaknesses but not to be so formal that it would become a constraint or overly invasive.
To achieve this aim, various business management maturity models are examined, and the proposed model is further supported with a life insurance-specific attributes such as King III and the Financial Services Board (FSB) proposed Solvency Assessment and Management (SAM). Additionally, the following objectives were identified and explored in an attempt to achieve this aim:

- To determine through a literature review the key components of a life insurance specific risk management model.
- To determine through a survey the applicability of the identified key components.
- Through a face-to-face interview survey, to identify your preferred life insurance-specific components of a risk maturity model.
- To develop and propose a risk maturity model for your organisation based on the theory and survey conducted.

**The findings will be kept confidential and the report will only refer to respondents as Respondent 1 or 2 as an example.**

I would appreciate it if I could receive your confirmation of our face-to-face interview by no later Friday, the 27th of September 2013.

Yours sincerely,

Oupa Mokgoantle

Senior Audit Manager – Liberty GIAS
APPENDIX B: INTERVIEW GUIDE

This interview guide was developed in respect of the master’s minor dissertation in “Risk Maturity in a Life Insurer”, which is an on-going study at Department of Business Management, University of Johannesburg (UJ). It is intended to provide a methodology to measure the risk management maturity at Liberty Life. Using the framework, Liberty Life can identify its strengths and weaknesses in the risk management area, and develop improvement plans accordingly. By participating in this study, you will contribute to the validation and refinement of the interview guide, and provide valuable research data.

Initially, it is expected the researcher will fill out general information about yourself and your company. The main body of the interview guide is composed of four parts, each with sub-components, as follows:

1. **Awareness/Culture**
   - Belief in value of risk management
   - Attitude towards risk management
   - Impact of risk management on project and company success criteria
   - Senior management commitment
   - Communication of risk information

2. **Application/Practices**
   - Formalisation of risk management practices
   - Scope of risk management practices
   - Integration of risk management with other business management process

3. **Experience/Competency**
   - Budget for risk management
   - Staff dealing with risk management
   - Risk management training

4. **Processes**
   - Risk identification
   - Risk analysis
   - Risk information database
- Risk response development
- Risk monitoring and control
- Risk evaluation

Any information provided from respondents on behalf of Liberty Life will be confidential and used only for academic purposes. We would like to thank for your time and your contribution to our study. Refer to the table below for an interview guide.

<table>
<thead>
<tr>
<th>No.</th>
<th>Research Question</th>
<th>Related Questions in an Unstructured Interview</th>
<th>Duration</th>
</tr>
</thead>
</table>
| 1.  | Could you please specify your role in Risk Management in your organisation? | - Please state your number of years you have been participating in Risk Management.  
- Please state your designation in the organisation. | 5 mins |
| 2.  | What is your organisation’s view on Risk and related concepts such as Uncertainty and Opportunity? (Culture) | - Give me an example for each of these concepts (i.e. Risk, Opportunity and Uncertainty)  
- Explain how risk-taking and innovation is rewarded in your organisation. Is this supported by the Values Charter or Ethical Code of Conduct? | |
| 2.  | In your own view, what characterises a mature risk management process? | - Explain how the following elements are defined and measured in your organisation:  
  * Culture/Awareness  
  * Processes  
  * Experience/Competency  
  * Application  
- Give examples of some of the Dashboard Risk Reports used for monitoring and Stakeholder reporting in your organisation. | 5 mins |
| 4.  | How do you identify and assess strategic and emerging risks? (Application) | - Give me brief overview of risk management practices in your organisation.  
- Explain how risks are identified and assessed (incl. Quantification, where practical).  
- Explain how these risks and related value | 5 mins |
<table>
<thead>
<tr>
<th>No.</th>
<th>Research Question</th>
<th>Related Questions in an Unstructured Interview</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.</td>
<td>Drivers are systematically linked to organisation strategy and related goals and objectives.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Briefly explain some of the essential components that form part of your organisation’s due diligence assessment process and procedures.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>What frameworks/methodologies and information systems are utilised in your organisation to capture all the strategic risks identified and analysed?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Briefly explain the <em>techniques</em> and <em>tools</em> used to perform <em>Risk Planning and Analysis</em>.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Explain the risk assessment models used to inform the next course of action to take.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
|     | Please explain the following:  
* How risks are identified?  
* How risks are analysed?  
* How risks are evaluated?  
* Who participates in the risk assessment? |  |  |
| 6.  | Do you have formal awareness training initiatives planned and implemented in 2013 for your Risk Management communities? |  |  |
|     | Explain how these initiatives are linked to your employee performance standards (KPIs, Employment Contracts, Development Plans, etc.) |  |  |
|     | Explain the process used to measure and track the achievement of the intended goals and objectives. |  |  |
| 7.  | How can Strategic Risk Planning be improved for future strategic initiatives such as M&A transactions and Regulatory compliance in your organisation? |  |  |
|     | List the critical success factors used during your previous M&A transactions. |  |  |
|     | List some of the failures and root causes experienced by your organisation in previous M&A transactions and/or Regulatory compliance audits. |  |  |
## APPENDIC C: INTERVIEW SCHEDULE

<table>
<thead>
<tr>
<th>No.</th>
<th>Experience/Role in Risk Management</th>
<th>Location</th>
<th>Interview Date &amp; Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>± 8 Years</td>
<td>GA2, Liberty Life Centre</td>
<td>07 Oct 2013, 09:00 – 10:00</td>
</tr>
<tr>
<td>2</td>
<td>± 20 Years</td>
<td>Leopard Liar, Liberty Life Centre</td>
<td>08 Oct 2013, 08:00 – 08:30</td>
</tr>
<tr>
<td>3</td>
<td>± 30 Years</td>
<td>2nd Floor (LibFin), Liberty Life Centre</td>
<td>16 Oct 2013, 14:00 – 15:00</td>
</tr>
<tr>
<td>4</td>
<td>± 18 Years</td>
<td>Executive Suite, Liberty Life Centre</td>
<td>04 Oct 2013, 08:00 – 08:30</td>
</tr>
<tr>
<td>5</td>
<td>± 15 Years</td>
<td>3 Orange 3, Liberty Life Centre</td>
<td>18 Oct 2013, 11:00 – 11:45</td>
</tr>
<tr>
<td>6</td>
<td>± 15 Years</td>
<td>Conf Rm 4.11, Liberty Life Centre</td>
<td>21 Oct 2013, 09:00 – 10:00</td>
</tr>
<tr>
<td>7</td>
<td>± 12 Years</td>
<td>3 Orange 3, Liberty Life Centre</td>
<td>23 Oct 2013, 12:00 – 13:00</td>
</tr>
<tr>
<td>8</td>
<td>± 20 Years</td>
<td>Executive Suite, Liberty Life Centre</td>
<td>24 Oct 2013, 09:00 – 10:00</td>
</tr>
<tr>
<td>9</td>
<td>± 20 Years</td>
<td>3 White 3, Liberty Life Centre</td>
<td>22 Oct 2013, 13:30 – 14:15</td>
</tr>
<tr>
<td>10</td>
<td>± 15 Years</td>
<td>3 Yellow 4, Liberty Life Centre</td>
<td>24 Oct 2013, 11:00 – 11:30</td>
</tr>
</tbody>
</table>
## APPENDIX D: SUMMARY OF THE RESEARCH SURVEY RESULTS

<table>
<thead>
<tr>
<th>KEY ATTRIBUTES</th>
<th>SUCCESS INDICATOR</th>
<th>SURVEY RESPONDENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Culture</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Top-down commitment to risk management, with leadership by example.</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td></td>
</tr>
<tr>
<td>- Upper management uses risk information in strategic and high-level decision-making (e.g. risk adjusted capital and/or value-at-risk).</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td></td>
</tr>
<tr>
<td>- Proactive risk management encouraged and rewarded.</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td></td>
</tr>
<tr>
<td>- Organisational philosophy accepts idea that people make mistakes.</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td></td>
</tr>
<tr>
<td>- Risk-aware culture with proactive approach to risk management in all aspects of the organisation.</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td></td>
</tr>
<tr>
<td>- Active use of risk information to improve organisational processes and gain competitive advantage.</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td></td>
</tr>
<tr>
<td><strong>2. Processes</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Risk Management culture permeating the entire organisation.</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td></td>
</tr>
<tr>
<td>- Regular evaluation and refining of process.</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td></td>
</tr>
<tr>
<td>- Routine risk metrics used with consistent feedback for improvement.</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td></td>
</tr>
<tr>
<td>- Key suppliers and customers participate in the Risk Management process.</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td></td>
</tr>
<tr>
<td>- Direct formal communication channel to organisation management.</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td></td>
</tr>
<tr>
<td><strong>3. Application</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Risk ideas applied to all activities.</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td></td>
</tr>
<tr>
<td>- Risk-based reporting and decision-making.</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td></td>
</tr>
<tr>
<td>- State-of-the-art tools and methods.</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td></td>
</tr>
<tr>
<td>KEY ATTRIBUTES</td>
<td>SUCCESS INDICATOR</td>
<td>SURVEY RESPONDENTS</td>
</tr>
<tr>
<td>------------------------------------</td>
<td>-----------------------------------------------------------------------------------</td>
<td>--------------------</td>
</tr>
<tr>
<td></td>
<td>Both qualitative and quantitative risk analysis methodologies used with great</td>
<td>1 2 3 4 5 6 7 8 9 10</td>
</tr>
<tr>
<td></td>
<td>stress on having valid and reliable historical data sources.</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
</tr>
<tr>
<td></td>
<td>Dedicated organisational resources.</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
</tr>
</tbody>
</table>

4. Experience / Competency

- All staff risk aware and capable of using basic risk skills.  
  ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓
- Learning from experience as part of the process.  
  ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓
- Regular training for personnel to enhance skills.  
  ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓

√ Participant believes that this factor is important in relation to related attribute.

The actual detailed notes taken relating to each interview held were subsequently typed out and have been made available to the research supervisor separately in order to preserve confidentiality of the research respondents.
# APPENDIX E: RISK MATURITY MODEL PROPOSED FOR LIBERTY LIFE

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Level 1 Ad-hoc</th>
<th>Level 2 Initial</th>
<th>Level 3 Repeatable</th>
<th>Level 4 Managed</th>
<th>Level 5 Optimised</th>
<th>Maturity Level</th>
<th>Risk Score</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Definition</strong></td>
<td>Unaware of the need for management of uncertainties (risk).</td>
<td>Experimenting with risk management through a small number of individuals.</td>
<td>Management of uncertainty built into all organisational processes.</td>
<td>Risk-aware culture with proactive approach to risk management in all aspects of the organisation.</td>
<td>Linking risk management performance into executive compensation.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>No structured approach to dealing with uncertainty.</td>
<td>No structured approach in place.</td>
<td>Risk management implemented on most or all projects.</td>
<td>Active use of risk information to improve organisational processes and gain competitive advantage.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Repetitive and reactive management processes.</td>
<td>Aware of potential benefits of managing risk, but ineffective implementation.</td>
<td>Formalized generic risk process.</td>
<td>Benefits understood at all organisational levels, although not always consistently achieved.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Little or no attempt to learn from past projects or prepare for future projects.</td>
<td></td>
<td>Risk management implemented on most or all projects.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Culture (tone at the top)</strong></td>
<td>No risk awareness, risk management (RM) seen as a nuisance and peripheral activity with no relevance or value to core business objectives.</td>
<td>Risk processes are viewed as a compliance requirement and an additional overhead with variable practical benefits.</td>
<td>Benefits of RM recognised, accepted and proven. Focus on upside and downside of risk.</td>
<td>Top-down commitment to risk management, with leadership by example.</td>
<td>Expanding the scope of ERM to include strategic risk.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>No upper management involvement or support.</td>
<td>Scepticism of ability of RM to add value to organisation.</td>
<td>Upper management requires risk reporting.</td>
<td>Allocating economic capital to underlying market, credit, operational, and business risks.</td>
<td>Maximising shareholder value by actively allocating organisational resources at the “efficient frontier”.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Resistance and reluctance to adopt risk management (RM).</td>
<td>Focus on downside of risk.</td>
<td>Bad news risk information is accepted.</td>
<td>Incorporating the cost of risk into product and relationship pricing, as well as portfolio management and risk transfer strategies.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Managers do not want to hear about problems. Many undiscussable problems.</td>
<td>RM system is primarily for public relations purposes but not implemented.</td>
<td>Informal communication channels to top management.</td>
<td>RM widely seen as a core business function.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>People are punished for communicating bad news.</td>
<td>Little communication with stakeholders.</td>
<td>Effective communication with stakeholders.</td>
<td>Risk is an instinctive and automatic way of thinking for all employees at all levels</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attribute</td>
<td>Level 1 Ad-hoc</td>
<td>Level 2 Initial</td>
<td>Level 3 Repeatable</td>
<td>Level 4 Managed</td>
<td>Level 5 Optimised</td>
<td>Maturity Level</td>
<td>Risk Score</td>
</tr>
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</tr>
<tr>
<td>Secreive inward looking – no stakeholder communication.</td>
<td>-</td>
<td>encourages, but does not require, use of RM.</td>
<td>-</td>
<td>of organisation.</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>No risk awareness.</td>
<td>-</td>
<td>RM management used only on selected projects.</td>
<td>-</td>
<td>Open flows of information and trusting relationships with business partners along entire supply chain.</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Resistant/reluctance to change.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Organisational philosophy accepts idea that people make mistakes.</td>
<td>-</td>
<td>-</td>
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</tr>
<tr>
<td>Shoot the messenger.</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<td>-</td>
</tr>
<tr>
<td>Involvement in strategy setting</td>
<td>-</td>
<td>Risk identification part of strategic objective setting.</td>
<td>-</td>
<td>Board decides risk tolerance and indicators for major strategic objectives’ risks.</td>
<td>-</td>
<td>Integrating ERM into strategic planning processes.</td>
<td>-</td>
</tr>
<tr>
<td>Annual risk identification for strategic objectives.</td>
<td>-</td>
<td>Report significant risks to executive committee(s).</td>
<td>-</td>
<td>Monthly management feedback on progress in mitigating risks.</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Experience (staff)</td>
<td>-</td>
<td>Limited to individuals who may have had little or no formal training.</td>
<td>-</td>
<td>All staff risk aware and capable of using basic risk skills.</td>
<td>-</td>
<td>Extensive experience</td>
<td>-</td>
</tr>
<tr>
<td>No understanding of risk principles or language.</td>
<td>-</td>
<td>Need for internal risk champions identified.</td>
<td>-</td>
<td>Learning from experience as part of the process.</td>
<td>-</td>
<td>Leading qualifications</td>
<td>-</td>
</tr>
<tr>
<td>No understanding or experience in accomplishing risk procedures.</td>
<td>-</td>
<td>Training outsourced to third-party.</td>
<td>-</td>
<td>Regular training for personnel to enhance skills.</td>
<td>-</td>
<td>Externally recognised high competence</td>
<td>-</td>
</tr>
<tr>
<td>Risk management perceived as finance management function.</td>
<td>-</td>
<td>Guidance within organisation to develop capabilities.</td>
<td>-</td>
<td>Training programme in-house.</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>External training courses on ‘as needed’ basis.</td>
<td>-</td>
<td>In-house core of expertise, formally trained in basic risk management skills.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Application</td>
<td>-</td>
<td>Routine and consistent application to all projects.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>No structured application.</td>
<td>-</td>
<td>Inconsistent application of resources.</td>
<td>-</td>
<td>Risk ideas applied to all activities.</td>
<td>-</td>
<td>Leveraging risk management skills, tools, and information to deepen customer relationships by</td>
<td>-</td>
</tr>
<tr>
<td>No dedicated resources.</td>
<td>-</td>
<td>Qualitative risk analysis methodology used exclusively</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>No risk management</td>
<td>-</td>
<td>Dedicated project resources.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Integrated set of tools</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<td>-</td>
</tr>
</tbody>
</table>

118
<table>
<thead>
<tr>
<th>Attribute</th>
<th>Level 1 Ad-hoc</th>
<th>Level 2 Initial</th>
<th>Level 3 Repeatable</th>
<th>Level 4 Managed</th>
<th>Level 5 Optimised</th>
<th>Maturity Level</th>
<th>Risk Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>tools in use.</td>
<td>• No risk analysis performed.</td>
<td>• Both qualitative and quantitative risk analysis methodologies used.</td>
<td>• Both qualitative and quantitative risk analysis methodologies used with great stress on having valid and reliable historical data sources.</td>
<td>• Dedicated organisational resources.</td>
<td>• helping them manage their risks.</td>
<td>• Providing risk transparency to key stakeholders – regulators, investors, rating agencies – with respect to current risk exposures and future risk drivers.</td>
<td>•</td>
</tr>
<tr>
<td>Attribute</td>
<td>Level 1</td>
<td>Level 2</td>
<td>Level 3</td>
<td>Level 4</td>
<td>Level 5</td>
<td>Maturity</td>
<td>Risk Score</td>
</tr>
<tr>
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<td>------------</td>
</tr>
<tr>
<td><strong>Risk management performance measures</strong></td>
<td>Ad-hoc</td>
<td>Initial</td>
<td>Repeatable</td>
<td>Managed</td>
<td>Optimised</td>
<td>Level</td>
<td>Score</td>
</tr>
<tr>
<td>● Meet legislative requirement (E.g. SAM &amp; King III).</td>
<td>● Reduce internal and external audit findings.</td>
<td>● Reduce number of significant surprises.</td>
<td>● Ensure strategic objectives will be achieved within boundaries of risk appetite.</td>
<td>● Establishing &quot;trigger points&quot; to make timely business decisions, including risk mitigation and exit strategies.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>● No measure of benefits.</td>
<td>● Limited evidence of improved outcome.</td>
<td>● Measures improved outcome including stakeholders' perceptions.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Internal audit (assurance provider)</strong></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>● No formalised audit of risk management process.</td>
<td>● Internal audit function performs overview of the framework.</td>
<td>● Internal audit function performs audit on certain areas of the framework.</td>
<td>● Ad hoc audit of the framework.</td>
<td>● Annual audit of the framework.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Reporting/communication</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>● No formal communicating regarding risk management.</td>
<td>● Only internal communication to relevant parties.</td>
<td>● Risk management included in financial statements as a sub-section.</td>
<td>● Risk management included in financial statements as a separate section.</td>
<td>● Automating ERM reporting from monthly reports to electronic dashboards, including customised queries and real-time escalations.</td>
<td></td>
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</tr>
</tbody>
</table>

* The individual scores will be derived from Liberty Group Holdings' approved Risk Impact Rating Tables/Scales as discussed and agreed upon with Group Chief Risk Officer.
This questionnaire was developed with respect to the master’s minor dissertation “Risk Maturity in a Life Insurer”, which is aimed at providing a methodology to measure the risk management maturity of the Life Insurer (“Liberty Life”). This exercise is excluded from the current scope of this research study. Using the framework, Liberty Life may identify their strengths and weaknesses in the area of its risk management, and develop improvement plans accordingly. This questionnaire will be used to test the proposed risk maturity model as discussed and agreed upon with Liberty Group Holding: Chief Risk Officer (CRO). This exercise will be carried out towards the end of March 2014.

The main body of the interview guide is composed of four parts, each with sub-components, as follows:

5. **Awareness/Culture**
   - Belief in value of risk management
   - Attitude towards risk management
   - Impact of risk management on project and company success criteria
   - Senior management commitment
   - Communication of risk information

6. **Application/Practices**
   - Formalisation of risk management practices
   - Scope of risk management practices
   - Integration of risk management with other business management process

7. **Experience/Competency**
   - Budget for risk management
   - Staff dealing with risk management
   - Risk management training

8. **Processes**
   - Risk identification
   - Risk analysis
   - Risk information database
- Risk response development
- Risk monitoring and control
- Risk evaluation

The questionnaire is further divided into three sections, summarised as follows:

**Section 1** consists of demographic information.

**Section 2** seeks to determine your organisation’s current approach towards enterprise risk management.

**Section 3** seeks to determine what your organisation’s approach towards enterprise risk management should be, based on your views, experience as well as knowledge.

Please indicate your choice by marking the applicable box with a cross (X) or specify your answer under “other”.

**Section 1: Demographic Information**

1. Indicate the name of the business unit / functional area that you are representing

<p>| | |</p>
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>1.1. Retail SA</td>
<td></td>
</tr>
<tr>
<td>1.2. Liberty Corporate</td>
<td></td>
</tr>
<tr>
<td>1.3. Liberty Properties</td>
<td></td>
</tr>
<tr>
<td>1.4. Liberty Health</td>
<td></td>
</tr>
<tr>
<td>1.5. Liberty Africa</td>
<td></td>
</tr>
<tr>
<td>1.6. STANLIB</td>
<td></td>
</tr>
<tr>
<td>1.7. Frand.Net/Direct Financial Services (DFS)</td>
<td></td>
</tr>
<tr>
<td>1.8. Other (e.g. Internal Audit, Group Finance, Group Risk, etc.)</td>
<td></td>
</tr>
</tbody>
</table>

2. Indicate your role within the organisation

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>2.1. Managing Director / Chief Executive Officer</td>
<td></td>
</tr>
<tr>
<td>2.2. Financial Director / Chief Financial Officer</td>
<td></td>
</tr>
<tr>
<td>2.3. Chief Risk Officer</td>
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</tr>
<tr>
<td>2.4. Chief Information Officer</td>
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<tr>
<td>2.5. Chief Compliance Officer</td>
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<tr>
<td>2.6. Chief Operating Officer</td>
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</tr>
</tbody>
</table>
2.7. Risk Manager
2.8. Line Manager
2.9. Actuarial
2.10. Internal Audit
2.11. Other (specify)

3. Indicate your number of years of experience in the long-term insurance industry

3.1. Less than 5 years
3.2. Between 5 and 10 years
3.3. Between 10 and 15 years
3.4. Between 15 and 20 years
3.5. Greater than 20 years

4. If you would like a copy of the results, please indicate your email address below:

Sections 2
Please answer the following questions by indicating your answer with a cross (X) in the applicable box according to the following scale or specify your answer under "other":

Scale for answers:
1 = Not at all
2 = To a lesser degree
3 = To a fair degree
4 = To a high degree
5 = Totally
6 = Unsure

Section 3: Your organisation’s current approach towards enterprise risk management

1. To what degree of primary importance would you rate the following areas of risk within your organisation?

1.1. Insurance risk
1.2. Market risk
1. To what degree of primary importance would you rate the following areas of risk within your organisation?  

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
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<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.3. Credit risk</td>
<td></td>
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<tr>
<td>1.4. Operational risk</td>
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<td>1.5. Liquidity risk</td>
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<td>1.6. Reputation risk</td>
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<tr>
<td>1.7. Political risk</td>
<td></td>
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<tr>
<td>1.8. Legal risk</td>
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<tr>
<td>1.9. Other: (specify)</td>
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</tr>
</tbody>
</table>

2. To what degree does your organisation believe that the following are factors of operational risk?  

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1. People</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
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<tr>
<td>2.2. Process</td>
<td></td>
<td></td>
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<tr>
<td>2.3. Systems</td>
<td></td>
<td></td>
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<tr>
<td>2.4. Other external factors (fraud, natural disasters)</td>
<td></td>
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</tr>
<tr>
<td>2.5. Liquidity risk</td>
<td></td>
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<td>2.8. Legal risk</td>
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Sections 3 (Continued)  
Please answer the following questions by indicating your answer with a cross (X) in the applicable box according to the following scale or specify your answer under “other”:  

**Scale for answers:**  
1 = Not at all  
2 = To a lesser degree  
3 = To a fair degree  
4 = To a high degree  
5 = Totally  
6 = Unsure
Completion tip – For each element being assessed should have ONLY two selections (X). That is, one for Effectiveness and the other for Capability Maturity for the same process element.

3. **Internal Environment** – Sets the foundation for how risk is viewed and addressed by an organisation’s people, including risk philosophy and risk appetite, integrity, ethical and the environment in which they operate.

   3.1. **Risk Management Philosophy** – the company’s risk management philosophy is composed of a set of shared beliefs and attitudes characterising how it considers risk from strategic development and implementation to its day-to-day activities. This philosophy is communicated and understood by all personnel enabling the company to effectively recognise and manage risk.

   3.2. **Risk Appetite** – the company has determined the amount of risk, on a broad basis, it is willing to accept in the pursuit of shareholder value. In addition, the company has aligned its risk appetite with its strategy.

   3.3. **Board of Directors** – the company’s Board of Directors is a critical part of the internal environment and significantly influences other internal environment elements.

   3.4. **Integrity and Ethical Values** – the company’s strategy and objectives are implemented and achieved based on sound ethical behavior and management integrity and are communicated and reinforced throughout the organisation.

   3.5. **Commitment to Competence** – the company specifies the competency levels for particular jobs and translated those levels into requisite knowledge and skills.

   3.6. **Organisational Structure** – the company’s organisational structure provides the framework to plan, execute, control and monitor its activities, including defining key areas of authority and
3. **Internal Environment** – Sets the foundation for how risk is viewed and addressed by an organisation's people, including risk philosophy and risk appetite, integrity, ethical and the environment in which they operate.

   - Responsibility and establishing appropriate lines of reporting.

3.7. **Assignment of Authority and Responsibility** – the company has established policies that describe appropriate business practices, knowledge and experience of key personnel, and resources provided for carrying out duties, including accountability, in order to achieve Company objectives.

3.8. **Human Resource Standards** – the company has formal practices pertaining to hiring, orientation, training, evaluating, counseling, promotion, compensating and taking remedial actions allowing employees to understand expected levels or integrity, ethical behavior and competence.

4. **Objective Setting** – Objectives must exist before management can identify potential events affecting their achievement. ERM ensures that management has in place a process to set objectives and that the chosen objectives support and align with the entity’s mission and are consistent with its risk appetite.

   - Strategic Objectives – the company has established high-level goals, aligned with and supporting the company mission/vision and has communicated these objectives throughout the organisation.

   - Related Objectives – the company has established operations, reporting and compliance objectives that support and are aligned with the company's mission and strategy and that the chosen objectives are consistent with the company's risk appetite.

   - Risk Appetite – the company’s strategy is based on management’s established risk appetite.

   - Risk Tolerances – the company has established risk tolerances that can be measured and are at acceptable levels of variation relative to its achievement of objectives (performance measures are aligned to help ensure that actual results will be within the acceptable risk tolerances).

5. **Event Identification** – Internal and external events affecting the achievement of an entity’s objectives must be identified, distinguishing between risks and opportunities.

   - Events – the company has identified events, incidents or occurrences from external or internal
5. Event Identification – Internal and external events affecting the achievement of an entity’s objectives must be identified, distinguishing between risks and opportunities.

5.2. Influencing Factors – the company actively considers external and internal factors that influence how events could potentially affect strategy implementation and achievement of objectives.

5.3. Event Identification Techniques – the company uses a combination of techniques, looking at both the past and the future, in its event identification (i.e., Facilitate workshops, event inventories, etc.).

5.4. Event Interdependencies – the company assesses interrelationships of events in order to determine where risk management efforts should be directed.

5.5. Event Categories – the company aggregates events horizontally across the company and vertically within the operating units in order to understand the interrelationships between events and gain enhanced information as a basis for risk assessment.

5.6. Distinguishing Risk and Opportunities – the company identifies events that have a negative impact, a positive impact or both. The company considers these events in management’s risk assessment and response.

6. Risk Assessment – Risks are analysed, considering likelihood and impact, as a basis for determining how they should be managed. Risks are assessed on an inherent and a residual basis.

6.1. Inherent and Residual Risk – the company assesses risk of all potential events that are likely to have a significant impact on the company, including affective strategy implementation and achievement of objectives.

6.2. Estimating Likelihood and Impact – the company evaluates potential events by likelihood, possibility that the event will occur, and impact, the effect of the event.

6.3. Assessment Techniques – the company uses both qualitative and quantitative techniques in assessing risks within the company.

6.4. Events Relationships – the company assesses how events correlate, where sequences of events combine and interact to create significantly different
6. **Risk Assessment** – Risks are analysed, considering likelihood and impact, as a basis for determining how they should be managed. Risks are assessed on an inherent and a residual basis.

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probabilities or impacts.

7. **Risk Response** – Risks are analysed, considering likelihood and impact, as a basis for determining how they should be managed. Risks are assessed on an inherent and a residual basis.

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7.1. **Identify Risk Responses** – the company has a process to determine the appropriate risk response, after having assessed relevant risks to the Company that brings expected likelihood and impact within the desired risk tolerances. (i.e., Avoid, reduce, share, and accept).

7.2. **Evaluate Possible Responses** – the company analyses inherent risks and responses are evaluated with the intent of achieving a residual risk level aligned with the company’s risk tolerances. In addition the company considers how individual responses, or combinations of responses, interact to affect potential events.

7.3. **Selected Responses** – the company selects the appropriate response or combination of responses that brings anticipated risk likelihood and impact within risk tolerances. In addition, the company develops an implementation plan to execute the response, recalibrates the risk on a residual basis, and develops procedures to ensure effective implementation.

7.4. **Portfolio View** – the company considers risk from a company-wide, or portfolio, perspective. Senior Management takes the view of risk for individual units and taking a portfolio view determines whether the company’s risk profile is commensurate with its overall risk appetite relative to its objectives.

8. **Control Activities** – Policies and procedures are established and implemented to help ensure the risk responses are effectively carried out.

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8.1. **Integration with Risk Response** – the company develops control activities to help ensure that the risk responses selected by the company are carried out properly and in a timely manner. These control activities serve as mechanisms for managing the achievement of objectives and are built directly into the management process.

8.2. **Type of Control Activities** – the company determines the appropriate type of control (i.e. Preventive, detective, manual, system and
8. **Control Activities** – Policies and procedures are established and implemented to help ensure the risk responses are effectively carried out.

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Management controls that will ensure adherence to established action plans and to keep the company on track toward achieving its objectives. Control activities involve two elements: a policy establishing what should be done and procedures to effect the policy.

8.3. **Controls over Information Systems** – the company has established general controls that include controls over information technology management, information technology infrastructure, security management and software acquisition, development and maintenance. The company has established application controls that are designed to ensure completeness, accuracy, authorisation and validity of data capture and processing.

8.4. **Entity Specific** – the company has considered such factors as its industry environment, complexity, location and geographical dispersion, extensiveness and sophistication of operations and information processing methods in designing its control activities that will contribute to the achievement of its objectives.

9. **Information and Communication** – Relevant information is identified, captured and communicated in a form and timeframe that enable people to carry out their responsibilities. Effective communication also occurs in a broader sense, flowing down, across and up the entity.

9.1. **Information** – the company has information available at all levels of its organisation to identify, assess and respond to risks, and to otherwise run the Company and achieve its objectives.

9.2. **Strategic and Integrated Systems** – the company has effectively designed and used its information systems to support its business strategy and these systems are fully integrated into most aspects of its operations.

9.3. **Communication** – the company has developed communication plans in dealing with expectations, responsibilities of individuals and groups, and other matters both internal (i.e., the company’s risk management philosophy and delegation of authority) and external (i.e., open communication with customers enabling the company to address customer demands or preferences).

THANK YOU FOR TAKING THE TIME TO COMPLETE THE QUESTIONNAIRE
Other comments:
Please add any other comments that you may wish to express with regard to operational risk management in the long-term insurance industry here:
APPENDIX G: TEN QUESTIONS THE BOARD SHOULD ASK ITSELF

1. What tone do we set from the top? Are we providing consistent, coherent, sustained and visible leadership in terms of how we expect our people to behave and respond when dealing with risk?

2. How do we establish sufficiently clear accountabilities for those managing risks and hold them to their accountabilities?

3. What risks does our current corporate culture create for the organisation, and what risk culture is needed to ensure achievement of our corporate goals? Can people talk openly without fear of consequences or being ignored?

4. How do we acknowledge and live our stated corporate values when addressing and resolving risk dilemmas? Do we regularly discuss issues in these terms and has it influenced our decisions?

5. How do the organisation’s structure, processes and reward systems support or detract from the development of our desired risk culture?

6. How do we actively seek out information on risk events and near misses – both ours and those of others – and ensure key lessons are learnt? Do we have sufficient organisational humility to look at ourselves from the perspective of stakeholders and not just assume we’re getting it right?

7. How do we respond to whistle-blowers and others raising genuine concerns? When was the last time this happened?

8. How do we reward and encourage appropriate risk taking behaviours and challenge unbalanced risk behaviours (either overly risk averse or risk seeking)?

9. How do we satisfy ourselves that new joiners will quickly absorb our desired cultural values and that established staff continue to demonstrate attitudes and behaviours consistent with our expectations?

10. How do we support learning and development associated with raising awareness and competence in managing risk at all levels? What training have we as a board had in risk?

Source: IRM, (2012)
### APPENDIX H: COMMON RISK LANGUAGE AND GLOSSARY OF RISK TERMS

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<tr>
<th>Description</th>
<th>Definition</th>
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<tr>
<td>Cause</td>
<td>The business condition that allowed a risk to occur. Causes generally fall into two categories: internal problems or external matters.</td>
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<tr>
<td>Control</td>
<td>A preventative and/or detective activity, intended to manage the inherent risks identified within a business. This will normally relate to management of the potential impact and/or likelihood of risk exposure but may also involve risk transfer, mitigation or elimination.</td>
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<tr>
<td>Control Activities</td>
<td>Policies and procedures that ensure management directives are executed; they ensure necessary actions are taken to address risks to the achievement of corporate objectives.</td>
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<tr>
<td>Control Environment</td>
<td>The operating environment that comprises the integrity and competence of colleagues, management’s philosophy and operating style and the way management communicates and delegates responsibility, and develops its people.</td>
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<tr>
<td>Event</td>
<td>The definition of an event originates in COSO’s ERM Framework. An event is an incident or occurrence from internal and external sources that affects achievement of objectives.</td>
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<tr>
<td>Enterprise Risk</td>
<td>Enterprise Risk is the extent to which the outcome from the corporate strategy of a company may differ from those specified in its corporate objectives, or the extent to which they fail to meet these objectives.</td>
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<tr>
<td>Enterprise Risk Management</td>
<td>A structured and disciplined risk management approach considering strategy, process, people, technology and knowledge with the purpose of continually evaluating and managing risks to business strategies and objectives on an enterprise-wide basis. Enterprise risk management is a continuous activity that aggregates and integrates risk management activities across all types of risk in order to achieve maximum risk-adjusted returns.</td>
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<tr>
<td>Internal Control</td>
<td>The definition of an internal control originates in COSO’s ERM Framework. Internal control is a process, effected by an entity’s board of directors, management and other personnel, designed to provide reasonable assurance regarding the achievement of the objectives in the following categories:</td>
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<tr>
<td></td>
<td>• Effectiveness and efficiency of operations.</td>
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<td></td>
<td>• Reliability of reporting.</td>
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<td>Description</td>
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<td>- Compliance with applicable laws and regulations.</td>
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<tr>
<td>Interviewees</td>
<td>“Interviewees” is the term used for the people interviewed in the study. They serve as units of analysis when collecting the evidence about the study area.</td>
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<tr>
<td>Risk</td>
<td>Risk is elaborated in Chapter 2. In the ERM context, risk is seen as the possibility of an event occurring, influencing the achievement of objectives negatively.</td>
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<td>Risk Culture</td>
<td>A risk culture is based on particular beliefs and assumptions. These can be clustered according to specific cultural tenets, namely risk, integrity, governance and leadership, decision-making, empowerment, teamwork, responsibility and adaptability… These tools are expressed in everyday workplace practices via attitudes and behaviours and, when they are expressed by leaders, they serve as powerful (human) culture embedding mechanisms.</td>
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<td>Risk Description</td>
<td>A detailed articulation of a risk, designed to give clearer understanding of the risk.</td>
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<td>Risk Effect</td>
<td>The consequence that the risk has to the company. The effect can be measured on a qualitative (high, low) or quantitative manner (Rand amount, number of transactions impacted).</td>
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<tr>
<td>Risk Event</td>
<td>A high level articulation of risk and potential or actual exposure often used in risk registers / portfolios.</td>
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<td>Risk Framework</td>
<td>The overarching, unifying approach and process for the management of risk within an organisation, which is often expressed diagrammatically. The framework includes all the key building blocks for risk management which typically include a common language for risk, the organisation’s risk policy and appetite, identification and assessment of risk, monitoring and assurance of risk and of the risk management process and reporting.</td>
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<td>Risk Policy</td>
<td>Documented approach and rules to be followed in relation to a particular area or issue that has been agreed by the Board or a properly delegated committee.</td>
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<td>Risk Management</td>
<td>Risk Management is in the present thesis defined as a broad term of managing risks. Every activity of managing risks, i.e. insurancing, hedging or assessing risk factors, will be characterised as Risk Management.</td>
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<td>Risk Management Process</td>
<td>The Risk Management Process is broadly defined in the present study. When speaking of the “risk management process”, it does not necessarily</td>
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<td>imply a formal process. The risk management process can also be viewed as an umbrella for all the sub processes in a company concerning Risk Management. This entails that the risk management process in this thesis is a common term, whether speaking of a formal process or informal, unstructured processes constituting the risk management activity of the company all together.</td>
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<td>Risk Maturity</td>
<td>The extent by which a robust risk management approach has been adopted and applied, as planned, by management across the organisation to identify, assess, decide on responses to and report on opportunities and threats that affect the achievement of the organisation's objectives.</td>
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