



**EXPLORING DIMENSIONS OF RISK
MANAGEMENT PRACTICE IN
AUSTRALASIAN UNIVERSITIES:
A MIXED METHODS STUDY**

A Thesis submitted by

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Abstract

The nature of risk management has significantly and rapidly advanced due to global rapid change with the occurrence of unprecedented risk events. Change is no longer linear but has become seditious. This phenomenon combined with decreased community risk tolerance, has led to risk management environments dealing with complex and bounded risk management frameworks reflecting compliance traditions. Emerging literature has suggested that risk management has shifted away from an analytic and internal focus to embracing a new paradigm linking leadership, risk management practice and strategy. Risk management thinking in the nexus between compliance focused risk management practice and strategic risk management practice has been advocated but literature that has investigated what the related strategic risk management practice looks like, is rare.

The aim of this study was to explore risk management practice in Australasian universities and describe what form a strategic risk management approach may assume. Australasian universities still largely practice risk management within an audit, compliance, and reporting framework of risk management. The research reveals that universities are aware that risk should inform a strategic risk management approach but are unclear as to how this shift affects current practice or what a strategic risk management framework in universities may look like. As such, this study is focused on conducting rigorous research based on current theory to develop an evidence-based insight as to current risk management practice and articulate the evidence into the development of a strategic risk management framework as an original knowledge contribution to professional practice.

The review of the extant literature underpinned the research within the context of the aim of the study while developing an understanding of current risk management practice in Australasian universities. Based on the different approaches that were identified in the literature the following research questions guided the study:

- a) What is current risk management practice in Australasian universities?

b) How does current risk management practice interpret strategic risk management?

c) How does current risk management in Australasian universities differ from a Strategic Risk Management (SRM) approach as reported in the literature and expert opinion?

The evidence emerging from the study suggested that Australasian universities should shift their risk management focus from audit, compliance and reporting requirement toward a broader risk management framework that includes input into the organisation's strategy considerations. The importance of risk perception, consultation and communication were highlighted as critical cross organisational functions of contemporary risk management practice. The study also suggests that certain audit, compliance, and reporting function remain within the framework. However, the realisation that all risk cannot be identified and mitigated was affirmed. Based on these research insights the study included the development of a strategic risk management framework as an artefact. Both the evidence and artefact represent the original knowledge contribution to professional practice made by the study.

The research apprehended the issue that was of importance in the study creating a strategic risk management framework. The artefact will enable a movement towards embracing a future in risk management practice. A further investigation in the issue of addressing strategic risk management either across higher education institutions or as a general industry practice would be of great interest and use to risk practitioners. Further, an enquiry into the risk dimensions either as a group or individually, would assist in understanding more detail of what role foresight, strategic thinking, decision making and strategic planning play in strategic risk management practice.

In conclusion, the research study has met its goals and generated outcomes in the form of a doctoral study and artefact. There are opportunities to further investigate the strategic risk framework in a broader sense including the core strategic risk dimensions as illustrated in this study.

Certification of Thesis

This Thesis is entirely the work of Carol McCabe except where otherwise acknowledged. The work is original and has not previously been submitted for any other award, except where acknowledged.

Principal Supervisor Dr Luke van der Laan

Supervisor Dr Marcus Harmes

Student and supervisors' signatures of endorsement are held at the University

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Abbreviations

AS/NZS 4360:1999/2004 - Risk management (AS/NZS) Standards Australia

AURIMS - Australasian Universities Risk and Insurance Management Society

COSO - Committee of Sponsoring Organizations of the Treadway Commission
2004

ICF - COSO Internal Controls Framework

ERM - Enterprise Risk Management Framework COSO. ERM now used widely across industries to mean enterprise risk management in practice (but not necessarily referring to the COSO ERM).

GFC - Global Financial Crisis

ISO - International Risk Standard, ISO 31000:2009 Risk management—principles and guidelines, International Organization for Standardization, (2009)

ISO - Revised International Risk Standard released 2018

LR - Literature Review

SARF - Social Amplification of Risk Framework

WW2 - World War Two

Chapter 1: Introduction

There is growing debate and awareness that the nature of risk management had been significantly and rapidly altered by the magnitude of unprecedented risk events associated with technological advancement. The phenomenon of unprecedented global risk events combined with decreased community risk tolerances led to a current business environment focused on complex and prudent risk management systems, reflecting audit and compliance traditions.

This study seeks to investigate the current practice of risk management in Australasian universities in order to understand what extent this practice reflects the viewpoints of uncertainty and risk in the Literature Review, and the results of an exploratory mixed methods research study.

This chapter consists of:

- a) Background
- b) Project overview
- c) Scope – embedding the praxis in theory, expected outcomes
- d) Research problem, gap and issues
- e) Literature Review overview
- f) Proposed methodology
- g) Conclusion

1.1 BACKGROUND

The ongoing debate between certainty and uncertainty has polarised researchers over decades in the field of risk management. There are two specific viewpoints. One supports a compliance approach towards risk management practice, the other a strategic risk approach.

A view from the influential researcher who reconceptualised the parameters of risk debate (Greenberg, Lowrie & Slovic 2014) contextualises this study. This risk scholar proposed that risk is something which cannot be manipulated mathematically to have meaning because it is a social construct. Slovic, in (Botterill and Mazur, 2004, p2) emphasises that risk,

“does not exist out there, independent of our minds and cultures, waiting to be measured. Human beings have invented the concept of risk to help them understand the uncertainties of life.”

This study seeks to investigate the practice of risk management in Australasian universities in order to understand to what extent this practice generally reflects either the compliance or strategic risk viewpoints. The study will contribute to professional practice in that it describes what strategic risk management practice in Australasian universities may ideally look like and estimates the gap between this and actual practice.

1.1.1 Risk Management

The goal of risk management is to create a reference framework that will allow organisations to manage risk and uncertainty. A universally agreed-upon definition of risk has been difficult to develop; one reason is that the concept is multidimensional and nuanced. Despite the variation in definitions, many recent cited works still refer back to Deloach’s (2000) definition of organisational risk as the level of exposure to uncertainties that the enterprise must understand and effectively manage as it executes its strategies to achieve its business objectives and create value.

The International Risk Standard ISO 31000:2009 (ISO) was modelled on the Australian and New Zealand AS/NZS 4360:2004 Risk Standard (AS/NZS). The most significant change in the ISO is the definition of risk, which changed from, “the chance of something happening that will have an impact on objectives” has changed to, “the effect of uncertainty on objectives” (ISO31000:2009). The new definition emphasizes strategic thinking and may remove the dominant focus of risk managers on probability

of an event happening. The ISO has intentionally left each organisation to deliver its own risk criteria based on its unique needs. For the purposes of the study, this shift in the ISO definition will serve as an insight to risk and the management thereof, in Australasian universities.

The field of risk management has evolved considerably with (Elahi 2013; Power 2015; Schiller & Prpich 2013; Schroeder, 2014; van der Laan & Yap 2016; Vennemann & Darkow 2010; von der Gracht et al. 2010; Vaara & Durand 2012; Yang et al, 2018) agreeing that there is a recent change in perspectives as to what risk is and where its management and usefulness sits within the organisation.

From early risk practice and continuing to be debated up to the present day is that risk management can add value to an organisation through adopting of a strategic risk management approach. This changing perspective is significant to the study and is evidenced in the literature.

The current research environment indicates that organisations continue to focus the practice of risk management through a compliance lens, hence they fail to benefit from a strategic perspective of risk management practice. As mentioned, researchers have suggested there is renewed interest in contemporary thinking on risk management, leadership and strategy (Elahi 2013; Power 2015; Rohrbeck 2015; Schiller and Prpich 2013; Schroeder, Wieland and Wallenburg, 2013; Schroeder, 2014; Van der Laan & Yap 2016; Yang et al, 2018) which stimulated the researcher's interest in beginning this investigation.

Elahi (2013) and Power (2015) indicated that a recent change in perspectives of what risk is and where it is located within an organisation is increasingly influential. Leading to an emerging view that risk management can promote creativity and add value to an organisation's strategy, Botterill and Mazur, (2004) highlight a declining public trust in corporations. Perhaps contemporary researchers can illustrate the benefits of strategic risk practice and the disincentives of a compliance focus. There are organisations who understand current environments through their positive strategic focus and demonstrated outcomes. Leading by example will enhance the future of risk management practice.

1.1.2 Risk management history

Since the early 1900s, risk management practice has evolved in step with world economies, through changing times, and economic struggle and depression, to decades

of abundance. The 1930 global depression, post-World War 2 revival of the global economy, and decades of high growth from the 1950s. Ultimately the high inflation of the 1970s drove a focus on financial risk, leading to the rise of audit and compliance risk management practice.

Following systematic failures of organisational governance in the past 2 decades, especially since the global financial crisis (GFC) or credit crunch, a growing global risk aversion has emerged in organisations. Power (2015) suggests that this phenomenon of control in organisations is driven by management functions. Elahi (2013) advised that a growing disquiet exists amongst some present-day risk practitioners and researchers who discredited the acceptance of a status quo approach to risk management practice.

There is evidence that the nature of risk has been significantly and rapidly altered to include dimensions of unprecedented non-linear risk associated with technological advancements. Elahi (2013) advanced that risk management is currently poorly managed in organisations and risk is generally viewed as an extension of the audit process by practitioners and researchers.

The study proposes that risk management in Australasian universities may be predominantly influenced by prevailing audit and compliance practice. An emphasis on financial health has historically encouraged a view that reliance on internal audit must, by definition, deliver better productive analyses in planning and risk management (McKinsey 2011). There is excessive confidence in risk practice which is evidenced by the dramatic shift in employment after the GFC or credit crunch to back office compliance staffing at the cost of frontline service staff (Power 2015; Vaara & Durand 2012; Van der Laan & Yap 2016; Von der Gracht et al. 2010).

The study seeks to establish to what extent the current modes of risk management in Australasian universities reflects this trend. Additionally, how a more proactive and strategic outlook of risk management may inform better practice.

1.1.3 Current risk situation

Many researchers are critical of the rise of audit and risk management related roles in organisations, aligned and directed as managerial concepts of compliance-driven risk management practice (Elahi 2013; Schiller and Prpich 2013; Schroeder, 2014; Vaara & Durand 2012; Van der Laan & Yap 2016; Von der Gracht 2010; Yang

et al, 2018). There are contemporary understandings about risk management practice that question current risk-averse business management practice.

Van Der Laan (2016) submitted that in engaging with foresight, organisations can embrace the future through knowledge creation while also detecting risks and hazards. Foresight, by definition, looks at possible futures taking risk into account but not allowing it to constrain opportunity and possibility. The effect is a tendency to reduce uncertainty while influencing the achievement of organisational goals in terms of the expert group who produced the ISO.

1.1.4 Risk management frameworks

This research study will examine the features of three risk management frameworks, ISO, ERM/COSO and SARF. This study will determine how the frameworks are used and whether there are significant influences which affect risk practice in Australasian universities. This study will also explore whether the frameworks are viewed as comprehensive, strategic risk management enablers within Australasian universities.

The emergence of the ISO as a contemporary risk framework sets the scene for this study. The current ISO defines risk as, ‘the effect of risk on uncertainty’, re-designed with the view to encourage and enable new risk thinking across organisations. There was little information into the use of the ISO, or any other risk framework for that matter in Australasian universities. Such information illustrated a gap in the literature that is a key premise of the study and supports the assertion that it will contribute original knowledge to professional practice.

The ISO encouraged organisations to follow a set of risk management principles based on protecting organisation value; it addresses uncertainty; is systematic and structured; is integral within organisational processes; responsive, inclusive, and incorporates human and cultural factors.

Whether these considerations are actively driving current risk management practice in Australasian universities is to play a key role in this study. At present there is little understanding of what constitutes risk management practice in Australasian universities. It will be argued that, given the robust attention to its formation and the vast risk expertise of its establishing Board, the ISO exemplifies a strong, validated risk

management framework which can deliver a strategic risk management environment, but has yet not been discovered.

The COSO-ERM model (2004) is a process effected by the COSO Board of Directors, risk managers and other risk personnel. Its design allows its application in strategy settings and across the whole enterprise. Its purpose is designed to identify potential events that may affect the entity in the first instance and then to manage these with sound risk management practice.

The SARF framework conveys an understanding that psychological, social, institutional, and cultural influences should be taken into account in any risk management practice (Botterill & Mazur, 2004; Mase et al. 2015; Schiller & Prpich 2013; Schmidt, 2004). Importantly this framework highlights the importance of understanding the dependencies between risks and is its key feature. Rather than exclusively adopting a single risk framework, it has been indicated that institutions adopt a form of hybridized model from existing risk frameworks, as suits each individual context.

1.1.5 Literature

The researcher took a broad approach in the literature initially to examine and determine what direction research into industry risk management was taking. A wealth of information was found including much work on risk management practice in governance, audit and compliance, and leadership. Equally as much information was available illustrating social constructs, risk perception, decision-making, probability, and risk communication influences on risk management practice which have been well documented since the 1960s and provided alternative viewpoints on risk management practice up to the present day.

The literature revealed a breadth of views on what constitutes risk management practice. Historically risk management began as a purely mathematical structure to inform insurance decisions on the scope of a risk event and later emerged as a finance and insurance risk discipline. In contrast, the social construct views of risk practice in the workplace included risk perception, risk culture, decision-making, individual views and values and numerous other internal and external environmental factors which completed the risk management picture. These social constructs also served to reveal

the gap in practice knowledge as it relates to the application of risk management in Australasian universities.

1.1.6 Research aims

This study seeks to investigate the practice of risk management in Australasian universities to understand to what extent it reflects the viewpoints related to uncertainty and risk through a mixed methodology research design that reports the results of a qualitative Delphi study and quantitative survey.

The study will explore two divergent approaches to risk management practice, audit/compliance, and strategic risk management. Additionally, the study will examine the presence of strategic risk dimensions, foresight, risk perception, decision making, horizon scanning, and broad communication/consultation. It will also examine the validity of the ISO as a contemporary risk management framework and to what extent this risk practice is included in Australasian universities.

The study will demonstrate and address the gap between current risk management practice in Australasian universities and the emerging notion of strategic risk management practice. It seeks to make an original contribution to professional practice in reporting on the perceptions of risk practice as experienced by university practitioners and what a strategic risk management practice in Australasian universities may look like.

1.2 PROJECT OVERVIEW

1.2.1 Purpose Statement

The goal of this study is to explore risk management practice in Australasian universities through a strategy of enquiry aimed at identifying the experiences of individual risk managers and observing influences which may affect risk practice. As such, the study intends to contribute to professional practice and knowledge of the field.

The research will engage in an examination of risk frameworks, risk management practice and will interrogate the nexus between a compliance view of risk practice and a future contemporary strategic view of risk practice.

1.2.2 Research Objectives

- a) Identify which risk management framework is in general practice across Australasian universities and/or articulate what current risk management practice is.
- b) Investigate whether dimensions; executive/leadership, risk perception and decision-making play a part in influencing risk management practice in Australasian Universities
- c) Enable the examination of a strategic risk framework for future risk practice development in Australasian universities.

1.2.3 Research Paradigm

Mackenzie and Knipe, (2006) called paradigms ‘a group of thoughts, notions, theories that assist research discovery’. The predominant paradigm for this study was pragmatism, which enabled the research to be problem focused. In this case, the problem is the current risk management practice in Australasian universities and the gap between university risk management practice in Australasian universities and the notion of strategic risk management.

1.2.4 Ethics

Ethics is the application of business and personal core values. USQ Ethics practice is guided by the National Statement on Ethical Conduct in Human Research, 2015. This statement outlines values and principles of ethical conduct, consent, and risk which must be considered before commencing any research study. The researcher must ensure that they apply a high standard of personal conduct, respect for the Delphi participants and risk managers from other universities.

Sources of ethical issues can be confidential information, staff, and storage of documents. As this study will be using survey and interview instruments, the researcher must apply for ethics clearance before any work begins.

This research will be conducted with humans and is cleared by the USQ Human Research Ethics Committee, approval H17REA072.

1.3 SCOPE

This study aimed to investigate risk management practice in Australasian universities. Additionally, to identify what gap exists in practice between an audit/compliance approach and a strategic risk approach to risk management practice.

The scope of this project includes:

- Conducting an extensive examination of risk management practice through a literature review, other research, and risk understandings to comprehensively understand the research problem and identify the research gap.
- Designing a sequential mixed methods research project that explores risk and uncertainty across Australasian universities and international perspectives.
- Examining the risk management framework ISO 31000:2009 within the context of Australasian universities risk practice as exercised by risk practitioners.
- Collecting quantitative and qualitative data through both Delphi and survey methodologies.
- Compiling and presenting the research findings in a doctoral thesis.

1.3.1 Embedding Praxis in Theory

This research study into risk management practice will be contained within a university setting. Participants are industry leaders who will participate in the Delphi panel to inform the study. Industry risk managers will follow this Delphi study with a survey informed by the Delphi findings. The survey participants are practicing risk managers in Australasian universities and members of the industry university risk management community of practice, AURIMS.

1.4 RESEARCH PROBLEM, GAP & ISSUES

1.4.1 Research Problem

In Australasian universities, risk management is currently applied in varied ways to meet differing university leadership expectations. The use of the major risk

management framework ISO, apart from this study, shows no apparent evidence of extensive use in Australasia and internationally.

Additionally, an issue faced by risk managers is that they hold varied roles and responsibilities within their university's organisational structure. In some universities audit and risk functions co-exist, in others both functional areas are quite separate. Reporting also varies depending on the executive hierarchy, which can range from reporting directly to the Vice Chancellor, to an Audit and Risk Committee, or to a management designation. This impedes the practice of strategic risk management and influences current risk practice.

A further important part of the study, which is supported by current literature, are internal and external influences on risk practices. Called dimensions throughout this study, these elements characterize impacts on risk management processes. The strategic risk dimensions are contained in foresight, strategic thinking, risk perception, decision making, horizon scanning, and broad communication and consultation. The extent to which these dimensions affect risk management practice is unknown. These aspects will be identified and explored throughout this study and combined with other findings will form part of the research outputs and major report.

This research study will deliver a report to its industry body AURIMS showing which risk framework guides Australasian university risk management practice and to what extent the framework provides direction to develop a sound strategic risk management environment that contributes to institutional direction and mission.

1.4.2 Research Gap

There is a nexus between compliance driven risk management practice and strategic risk management practice. A gap is illustrated in that we do not know or understand how risk management is practiced in the context of governance/compliance, risk frameworks, executive/leadership roles, and strategic risk management in Australasian universities where the researcher has practiced and is located as an insider researcher.

There is a need to investigate both current risk practice and the practice of strategic risk management, a notion which is supported by many researchers (Avolio 2009; Elahi 2013; Power 2015; Rohrbeck 2015; Schiller and Prpich 2013; Vaara & Durand 2012; van de Laan 2016).

1.4.3 Research Issues

Elahi (2013) advances the thinking that risk management is poorly managed in organisations and is viewed as an adjunct to audit and compliance processes. Current experience across universities and the concurrent roles of audit and risk management suggests that risk management may be specifically influenced by a compliance view of risk management practice.

Further, Elahi (2013) concludes that risk management is largely ad hoc. This is illustrated by a survey completed by the Committee of Sponsoring Organizations of the Treadway Commission, (Treadway Commission 2004). This report found that 60% of respondents say their risk tracking is mostly informal, or only tracked within individual silos, as opposed to enterprise-wide'. In conclusion, Elahi, (2013) emphasizes that enterprise-wide resilience is built through a strong risk management procedure in place to advise executive decision making and enable a strategic view of risk practice.

The rise of risk frameworks and compliance practice especially since the Global Financial Crisis (GFC) in 2008 is perceived by the researcher as possibly being the case in Australasian universities and is a motivation of this study. With organisations becoming increasingly complex and risk averse, significant consequences for innovation and strategy are emerging. Schiller and Prpich (2013) state explicitly that an emphasis on increased industry knowledge can result in an enabled strategic risk management environment.

New risk thinking is disputing the increasingly compliance-centered risk management paradigm. The nexus between both viewpoints provides the impetus for this study. Research commentary indicates that current risk frameworks show little ability to manage uncertainty. That said, the researcher finds an examination of current risk frameworks to be of critical importance in this study.

ISSUE 1: There is no general insight and understanding of current risk management practice in Australasian higher education.

ISSUE 2: There is a lack of understanding as to what strategic risk management in universities entails and how it can be adopted.

ISSUE 3: The difference between strategic risk management and current risk management practice in Australasian universities is unknown and is needed to inform future strategic risk practice.

1.4.4 Propositions

The key premise of this study is that Australasian universities may exhibit an audit/compliance view of risk management practice. If this study makes that discovery, then the problem is supported by this research. While the research questions will be fully developed following the Literature Review, there are three propositions which are to drive this research.

Proposition 1: Current risk management practice in Australasian universities is audit/compliance driven.

Proposition 2: There is an emerging notion of strategic risk management which may show a more relevant alternative to risk management practice in Australasian universities.

Proposition 3: There is a gap in risk management practice in Australasian universities between current risk practice and strategic risk management practice.

1.5 LITERATURE REVIEW OVERVIEW

1.5.1 Major Risk Frameworks

This study applies to a narrow area of risk practice, largely within Australasian universities. There is no research literature which applies to risk management practice specifically in Australasian universities. However, there is much historic and current research supporting specific areas associated with risk management practice. Areas such as leadership, risk perception, social constructs and strategic risk management will be significant in this exploration of risk management practice, (Power; 2015; Rohrbeck 2015; Schiller and Prpich 2013; Vaara & Durand 2012; Van der Laan & Yap 2016; Von der Gracht 2010). The continuation of audit and compliance as a risk enabler or influencer will also be examined.

- **ISO**

The ISO, was modelled on the AS/NZS 4360:2004, Risk Standard. It endeavoured to provide a framework which would satisfy the requirements of an international audience, along with encouraging individuality in practice through the new principles, InConsult, (2009). The most significant change to the current ISO is the definition of risk, notably, ‘the chance of something happening that will have an impact on objectives’ has changed to, ‘the effect of uncertainty on objectives’, (Standards

Australia/Standards New Zealand, 2009). Purdy, (2010) remarks that the new definition is forward thinking and may remove the focus of risk managers on the probability of an event happening.

- **COSO/ ERM**

The COSO-ERM model (2004) is a process effected by the COSO Board of Directors, risk managers and other risk personnel. It was designed to be applied in a strategy setting and across the whole enterprise. Its purpose is designed to identify potential events that may affect the entity in the first instance and then to manage these with sound risk practice.

A key objective of the COSO/ERM process is to help management of business and other entities better deal with risk in achieving an entity's objectives.

- **SARF understandings**

Kasperson *et al.*, (1988) motivated through observations of the existence of social construct implications within risk management practice, understood that new risk understandings meant that important considerations such as psychological, social, institutional, and cultural processes must be investigated. Those researchers acknowledged that the risk industry in the 1970s saw risk management as a precise process with control, direction, and capacity to manage all risk. Their views progressed a new risk management framework, the Social Amplification of Risk Framework (SARF), specifically driven by new insights of risk perception, social culture, and their influence on risk management practice.

1.5.2 Leadership

Contemporary theory on leadership is significant to this study because it challenges previous management paradigms, (Avolio, Walumbwa, & Weber 2009; Carter, Clegg & Kornberger 2008; Elahi 2013; Kupers, Mantere & Statler, 2012; Power 2015; van der Laan 2016). It is important to understand that leadership and management differ. Additionally, organisations must be reminded that both are necessary in any period of uncertainty. Leaders can be differentiated from managers in that they lead change either solely or within a group. The role of a manager is to keep the business running consistently to achieve the status quo while waiting for leadership direction.

1.5.3 Strategic risk

Current literature describes a shift from a narrow, linear approach to risk management to a comprehensive, whole of organisation practice closely associated with the notion of strategic risk. Elahi (2013), concludes that risk management continues to be viewed within a compliance framework. From that place, he argues, it cannot inform business creativity in developing new strategic possibilities and assist in the development of agility in the marketplace.

Foresight is not only an integral part of strategy and supports innovation, it is closely associated with anticipating risk, (Kupers 2012; Sarpong 2013; van der Laan 2016; von der Gracht 2016; von der Gracht, HA, Vennemann, CR, Darkow, 2010. That said, Daheim and Uerz, (2008) suggest that foresight struggles to become relevant in today's marketplace primarily due to the compliance nature of risk which bounds strategy.

1.5.4 Psychology of risk in decision-making

There may be limited understandings of psychological approaches to decision making. It is possible that individuals can unintentionally have a negative influence on risk management outcomes through their practice. Many current researchers, advise that social constructs should not be overlooked in a study of risk management (Elahi 2013; Schroeder, Wieland and Wallenburg, 2013; van der Laan 2016; Yang et al, 2018). There are current movements in risk management research relating to the influence of culture, realism, power, psychology, trust and individualism (Taylor-Gooby and Zinn, 2006), and new investigations into emotion and its effect on risk decision making.

1.6 PROPOSED METHODOLOGY

1.6.1 Insider researcher

Within a workplace research study, an understanding of the context of the researcher is critical. The researcher in this study is a long-term practicing risk manager in an Australasian university. As an insider researcher there are advantages in that the researcher belongs to an international cohort of risk managers and specifically for this study, the Australasian university network. In this case the local industry group is known as the Australasian University Risk and Insurance Management Society (AURIMS) which is known by its acronym and will be referred to as such throughout this research. The researcher has been the President of AURIMS and committee member for 14 years and has developed a long-term interest in the mechanics of risk management practice.

An insider researcher has a dual role as a member of the organisation with its associated loyalties and as a researcher with ethical standards to managing the research according to those ethical requirements. It is important to note that the researcher has an exceptional perspective within the research and is imbedded in the risk management field per se. Workman, (2007) suggests that the relationships between the researcher and study participants are complex and perhaps unstated. This may result in a shifting research environment as the researcher moves in and out of the progressing research environment.

While having such advantage in the study is a positive position, there are challenges in working in an organisation while conducting a research project, (Costly 2013, West *et al.*, 2013, Workman, 2007). The researcher should keep a clear view of the position and potential of specific issues which may impact the research. Kanuha (2000) suggests that the researcher must attempt to remain disconnected from subject experts, specifically finding a core vantage from which to practice. Importantly the researcher must action strategies to control biases which may be seen as an issue by outsiders.

1.6.2 Research Design

A goal of this study was to explore risk management practice in Australasian universities through a mixed methods strategy of enquiry based on a pragmatism paradigm. The study adopted a sequential exploratory mixed methods design conducted in two phases.

1.6.3 Delphi research

A Delphi panel was used in the first phase of the study. Using a Delphi research approach to lead the mixed methodology process was suitable in gaining a depth of data, and in illustrating and testing new understandings and insights related to the research issues. The method was seen to be flexible and suited to identifying and addressing issues where there was scant information and supports an exploratory research design.

This panel consisted of up to twelve volunteer industry experts, both local and international. The Delphi panel were involved in three rounds of investigation guided by the researcher.

1.6.4 Delphi participants

Participants for the Delphi panel were industry experts selected through the researcher's industry network according to set criteria including education, executive leadership experience and risk management practice experience. The Delphi participants were engaged in three iterative question cycles aimed at identifying consensus or probable lack of agreement. The qualitative data collected from the panel sessions would contain extensive firsthand information. The responses informed the construction of a survey, contributing to a robust exploration of the research questions.

1.6.5 Survey participants

Based on the results of the Delphi study, an anonymous online survey was developed which sought to a) validate the Delphi finding and b) generalize these findings to AURIMS members. Participants for the survey are members of AURIMS drawn from 32 Australasian universities. Participants represented varied risk roles and positions across universities to provide a broad source of views of different work practices and an integral part of the overall research project across the Australasian university sector.

1.7 CONCLUSION

Based on the research problem, questions, issues, and propositions reported in the previous section this study, the researcher will investigate current Australasian risk management practice and the application of a risk management framework in Australasian universities; the nature and effect of the dimensions in risk management practice; and the gap between current risk management practice and strategic risk management practice in higher education through a mixed methodology research approach.

This study aimed to determine which risk management framework is prominent in Australasian university risk management practice. The dimensions of strategic risk frameworks, audit and compliance, leadership, risk perception, decision-making and social constructs, or other highlights identified throughout the study will be explored to apprehend significant information in the risk management domain.

The wide range of literature available for this study has proven to be valuable in suggesting new risk methodologies as well as more traditional approaches, of incorporating current and past researchers, and risk and risk management theories. A

delimitation strategy was employed throughout the Literature Review to keep the focus of the study on risk management practice rather than deeply interrogating theory. The literature informed the lines of enquiry of the research and will enable the formation of the research questions.

Chapter 2: Literature Review

The Literature Review began with an investigation of what risk management means for the purpose of this research study, i.e., common definitions, risk standards and risk management practice in general. Using the research problems and issues as a guide, the researcher investigated risk and uncertainty themes that underpinned the Literature Mind Map (Figure 1) and informed the rest of the Literature review.

This chapter is presented in the following sequence.

- Background,
- Risk and uncertainty
- Risk management
- Risk management frameworks
- Psychology of risk/risk perception
- Leadership
- Strategy/strategic risk
- Summary and implications

2.1 BACKGROUND

Organisations are becoming increasingly complex and risk averse. The emergence of new thinking is disputing the increasingly compliance centered risk management paradigm (Elahi 2013; Schiller & Prpich 2013; Vaara & Durand 2012; Van der Laan & Yap 2016; Von der Gracht et al. 2010). The nexus between both increased reliance on compliance and a strategic risk view provides the impetus for this study.

The study is focused on how the ISO was used in Australasian universities, the extent of its use, and the impact of other risk frameworks on risk practice will also investigate the presence of risk dimensions such as leadership, decision making, risk perception and strategy to determine if they have an impact on risk practice in Australasian universities.

Finally, the study examined whether the currently used frameworks enabled a strategic view of risk management and whether they can enable strategic thinking across the risk management portfolio encompassing both creativity and adding strategic value to the organisation.

2.2 USING LITERATURE IN A WORK-BASED STUDY

A Literature Review can provide a useful backdrop to a problem or issue which indicates the importance of studying the issue. Table 1 presents a clear understanding of how literature can be used and the strategies that are important for work-based research studies.

In work-based research, enquirers use the literature in a manner consistent with the assumptions of learning. One of the chief reasons for conducting a mixed methodology research study is that this study is exploratory. The researcher seeks to listen to participants and build an understanding of their viewpoints and aspirations for their future risk management practice.

This study will engage with current uncertainty and risk management research. The literature provided a guide to historic and current research studies from which information on risk models and identification of the nature of influences on uncertainty and risk management practice became apparent. The literature was explored to comprehend significant impacts in the uncertainty and risk management domains, Table 1. Themes of executive/leadership, risk perception, decision theory and social

constructs/risk perception, or other influencers identified through the Literature Review provided input for framing the Delphi questions that constituted the qualitative phase of this study.

2.2.1 The use of literature in a qualitative study

Table 1: The use of literature in qualitative study

Use of the Literature	Criteria	Examples of suitable strategy types
The literature is used to frame the problem in the introduction to the study	There must be some literature available	Typically, literature is used in all qualitative studies, regardless of type
The literature is presented in a separate section as a review of the literature	This approach is often acceptable to an audience most familiar with the traditional post-positivist approach to literature reviews	This approach is used with those studies employing a strong theory and literature background at the beginning of the study, such as ethnographies and critical theory studies.
The literature is presented in the study at the end; it becomes a basis for comparing and contrasting findings of the qualitative study	This approach is most suitable for the inductive process of qualitative research; the literature does not guide and direct the study but becomes an aid once patterns or categories have been identified	This approach is used in all types of qualitative designs, but it is most popular with grounded theory, where one contrasts and compares with other theories found in the literature

Source: (Creswell, 2009 p27)

2.3 RISK MANAGEMENT DEFINITION

To inform the logic of the structure of the literature review, it was necessary to adopt, for the purposes of the study, a definitional point of reference of risk management. The overarching goal of risk management is to create a reference framework that will allow organisations to manage risk and uncertainty. A universally agreed-upon definition of risk has been difficult to locate or develop; one reason is that the concept is multidimensional and nuanced. Despite the variation in definitions, many recently cited works (see for example Sadgrove, 2016 and de Araujo Lima, Crema & Verbano, 2020) still refer to Deloach's (2000) definition of organisational risk as the 'level of exposure to uncertainties that the enterprise must understand and effectively manage as it executes its strategies to achieve its business objectives and create value'.

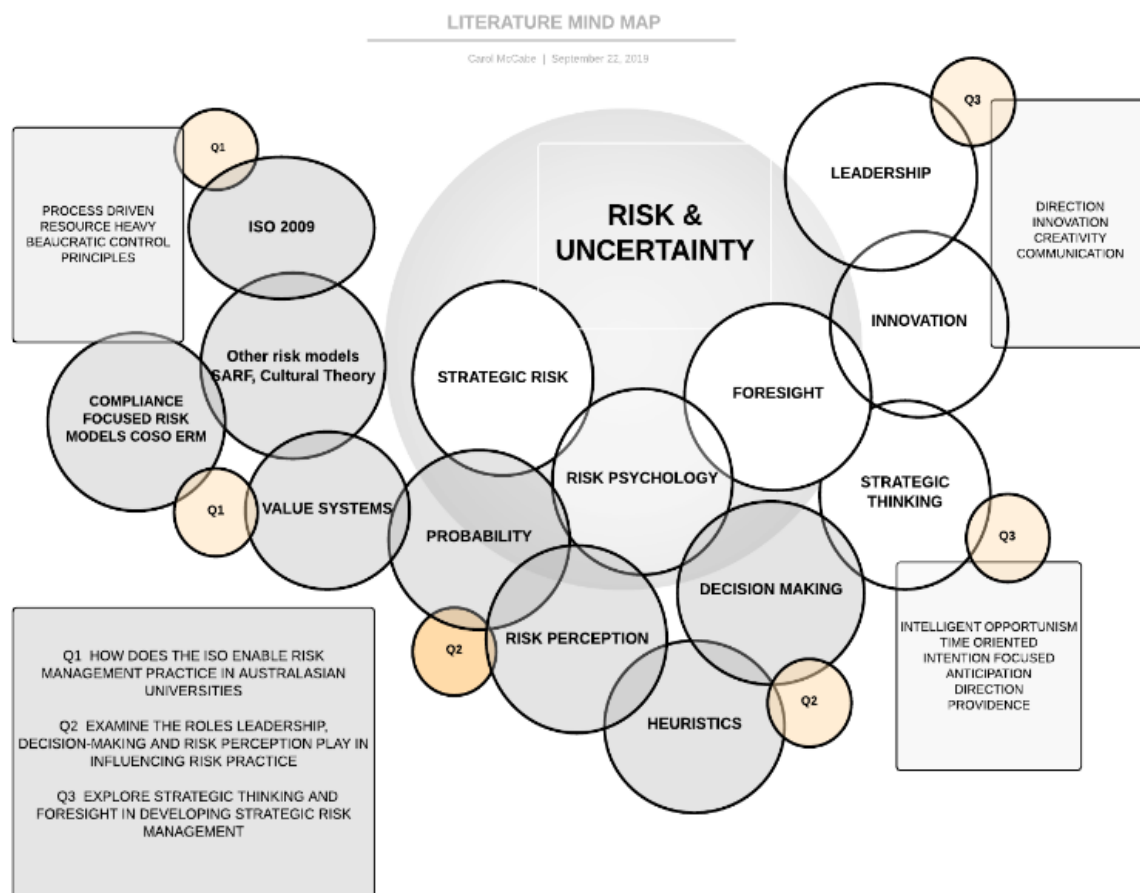
The International Risk Standard ISO 31000:2009 (ISO) was modelled on the Australian and New Zealand AS/NZS 4360:2004 Risk Standard (AS/NZS). The most significant change in the ISO was its definition of risk which changed from, "the chance

of something happening that will have an impact on objectives’ has changed to, ‘the effect of uncertainty on objectives’ (ISO31000:2009). The new definition emphasizes strategic thinking and may remove the dominant focus of risk managers on probability of an event happening. The ISO has intentionally left each organisation to deliver its own risk criteria based on its unique needs. With this definition in mind within the context of risk and uncertainty in Australasian university risk management practice, a literature mind map was developed to identify the line of enquiry used to inform the literature review.

2.4 LITERATURE MIND MAP

The study is concerned with current risk management practice in Australasian universities. Lines of enquiry were necessary to consider the research problem, issues and propositions in relation to the extant literature in order to determine existing knowledge and the unresolved questions that may inform the next stage of the study. Figure 1 was developed to inform the literature review using broad risk questions.

Figure 1 Literature Mind Map



Source: developed for this research

2.5 RISK AND UNCERTAINTY

The pioneering research of Daniel Kahneman and Amos Tversky, working in partnership from the late 1960s, and whose contributions have had a high impact in the field of uncertainty and in risk management generally, is significant to this study.

The early and seminal research in uncertainty management, (Fischhoff et al. 1975; Kahneman & Tversky 1986) must be referenced due to its importance in the discovery of uncertainty implications in risk management. The propensity of classic economic models of decision making under risk motivated these researchers to develop a theory that showed that behavioural patterns exist within uncertainty and decision making.

2.5.1 Distinguishing risk from uncertainty

Understanding the terms ‘risk’ and ‘uncertainty’ is highly contested across industries and communities Rohrbeck (2015). There are widely used definitions of risk, being in the main aligned with probability and consequence, or the ISO 2009 definition, ‘the effect of uncertainty on objectives.’

Regarding uncertainty, Wieck, in (Wieck, Binder and Scholz, 2006;

Perminova, Gustafsson and Wikström, 2008) suggests that in order to understand the strategic positioning of an organisation and its subsequent sensemaking, there should be a clear comprehension of risk and uncertainty in direct support of the organisation’s performance.

Risk management practice is subject to known or knowable probability, whereas uncertainty refers to events for which it is impossible to specify numerical probabilities. Decision theory calls uncertainty ‘a condition of the environment of the decision maker such that he finds it impossible to assign any probabilities to possible outcomes of an event’.

A Keynesian viewpoint in economic theory suggests that perceived uncertainty is inherent in economic life where the rules may not be known, bringing associated uncertainty where it is not possible to calculate risk’ Perminova (2008). Another principal definition of uncertainty comes from psychology where it is described as a state of mind characterised by a conscious lack of knowledge about the outcomes of an event. Table 2 summarises some views on uncertainty and risk derived from different disciplines.

2.5.2 Risk and uncertainty definitions from different disciplines

Table 2: Risk and uncertainty definitions from different disciplines

Risk & uncertainty in different disciplines	Risk	Uncertainty
Economics	Refers to events subject to known or knowable probability distribution	Uncertainty is a situation for which it is not possible to specify numerical probabilities
Psychology	Risk is the fact that the decision is made under conditions of known probabilities	Uncertainty is a state of mind characterized by a conscious lack of knowledge about the outcomes of an event
Philosophy		Doubt presupposes certainty Uncertainty emanates from a set of objectives but largely unmeasured environ characteristics
Oxford Dictionary of Current English 2005	The possibility of something happening at some time in the future	Uncertainty is the state of being uncertain, something you cannot be sure of
Project management	Risk is an uncertain event or condition that as it occurs, has a positive or negative effect on at least one project objective such as time, cost, scope or quality	

Source: Olga Perminova et al 2007

2.5.2 Risk and uncertainty in practice

The increase in global uncertainty has also energised a combined thinking of both risk and dread. The dread perspective was identified initially by Ulrich Beck in the 1990s who illustrated that an extreme industrial event, which is also highly improbable, must be seen in terms of dread and danger (Mythen, 2007). Risk management continues to be viewed as a negative process, and the growing use of supporting risk tools continue to validate this view. These tools being risk frameworks, risk registers, heat maps and the like are used to manage and contain uncertainty and risk.

(O'Reilly, 2000) and Rohrbeck (2015) suggest that growing uncertainty in the global environment should drive executives to safeguard management through understanding the essential dynamics of their environment. Further, they urge that executives could develop a future strategic risk model using knowledge management processes. Finally, managing uncertainty requires a futures perspective of both internal and external environments, closely linked to strategic thinking and strategic risk management.

There is a tension between the rational view and the subjective view of risk. The rational view considers risk to be an objective fact that exists and is a probabilistic phenomenon. It suggests that the knowledge gained through analysis is the rational outcome. A subjective view is where risk is seen as a construction with many dimensions. In this case, risk analysis is value driven. An on-going evolution of discussion on the polarity between qualitative and quantitative risk methodologies continues. There is also significant critique in the literature suggesting that risk management is not able to manage the current turbulent global environment. As such, the nature of challenges and complexities held within uncertainty and risk practice were investigated and described within a higher education context.

The literature discloses the scale of views on both what constitutes uncertainty and further insight into risk management understandings. Initially, formal risk management practice began with rational mathematical models designed to eliminate uncertainty by basing outcomes on probability calculations. Of interest, these models have been retained in similar forms, as linear decision-making calculations, to the present. In addition, psychologists showed concern that these models did not have the capacity to reflect the criticality of human reality. It was found that human choices are unusually susceptible to the how options are presented to them. This effect forms part of further research in decision making.

In summary of this section, the unrestricted growth of technology and the global economy has shortened business cycles imposing changes in operational environments. With overwhelming business environment uncertainty and complexity researchers note that organisations have moved to further rely on past practice ((O'Reilly, 2000) Such actions may explain why relying on previous risk methodologies, which deliver a form of certainty through a compliance construct, is still the current risk procedure in many workplaces, i.e., a desire to have perceived certainty in a fundamentally uncertain operational environment. This perception underpins thinking and guides the study.

For the purposes of this research, the ISO definition, “the effect of uncertainty on objectives”(Standards Australia/Standards New Zealand, 2009) is widely used and incorporated into contemporary management processes as will be used for the purposes of this study. Uncertainty in higher education sees a description of a conscious lack of knowledge about an unseen event and interchangeable with risk.

2.6 RISK MANAGEMENT

2.6.1 Introduction

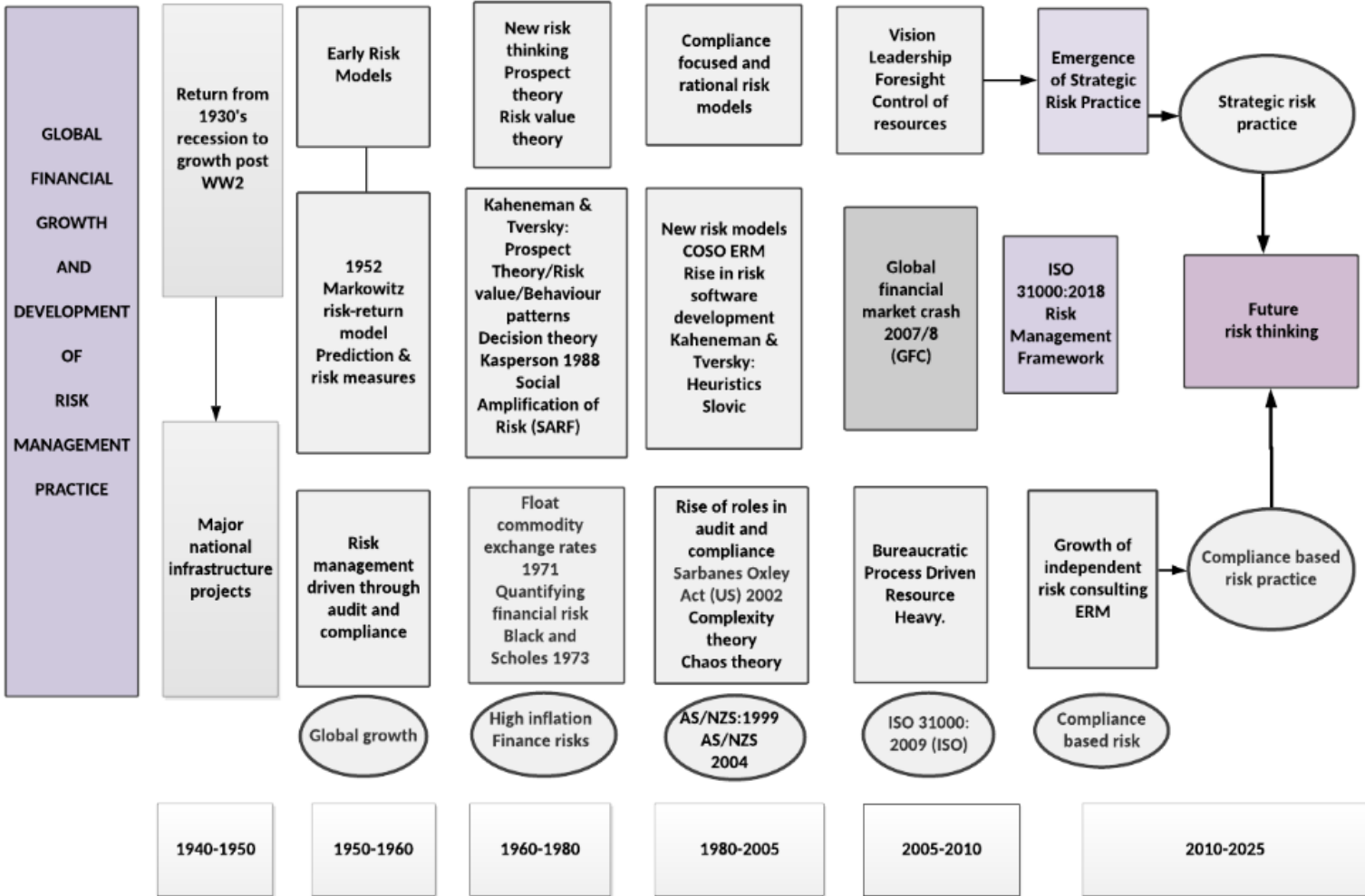
Contemporary risk management practice has retained traditional audit focused ideologies established from its beginnings as an enabler for insurers post-World War 2. Paradoxically, there is a growing disquiet with some present-day risk practitioners and researchers (Elahi 2013). Existing audit centered risk frameworks, developed to contain the scope of risk practice, were in place during the global financial crisis (GFC) of 2007/2008. Of note, existing risk management frameworks of that time illustrated little ability to pre-warn the global community or provide renewed risk thinking post event.

Following the systematic failures of governance, a growing risk averseness emerged in the general population. Power (2015) suggests that this phenomenon of control in organisations is devised by management functions. Power (2015) along with many other researchers, is also critical of the rise of audit and risk management related roles, aligned with a managerial concept of risk management (Carter et al. 2008; Daheim & Uerz 2008; Elahi 2013; Schiller & Prpich 2013; van der Laan & Yap 2016; Vaara & Durand 2012; Vennemann & Darkow 2010; von der Gracht, HA,)

A recent change in perspective of what risk management is and where it lies within organisation frameworks is significant (Elahi 2013; Power; 2015; Schroeder, Wieland and Wallenburg, 2013b)). An emerging view that risk management could alternatively add value to an organisation's strategy is illustrated by Botterill and Mazur (2004).

2.6.2 Risk Management Maturity Overview

Figure 2 Maturity Overview



Source: developed for this research

2.6.3 A brief history of risk management

From its beginnings as an enabler for insurers after the Second World War, risk management has been a source of comfort, but paradoxically also disquiet, to risk professionals and their organisations. Risk frameworks have been developed essentially to contain the scope of risk and practice through measurable and exacting procedures.

Early decades saw growth emerge from recession and early risk models evolving, Markowitz risk and return model (1952) which used risk measures and some prediction. The 1960s brought theorists looking at more specific risk processes such as Kahneman & Tversky investigating probability and prospect theory. The study earned Daniel Kahneman the Nobel Memorial Prize in Economic Sciences in 2002 for his groundbreaking work in applying psychological insights to economic theory, particularly in the areas of judgment and decision-making under uncertainty.

During this however there was high inflation which indicated global financial risk. Kasperson (1988) with his social amplification of risk model (SARF) where for the first-time human nature and its effects on risk management was an important work.

From 1980 to the mid-2000s, there was a rise in the development of risk software development. The US brought the Sarbanes Oxley Act (2002), while theorists led with chaos theory and heuristics studies. The AS/NZS was developed as an Australasian risk model in 1999 and there began a rise in risk management roles in industry followed by the development of the COSO risk framework.

Following the GFC, the markets began to move to a reliance on compliance and industry became bureaucratic and process driven. Compliance based risk management was seen as ERM and began a new decade of risk consulting. The ISO 31000 2004 emerged from its beginnings as a local Australian and New Zealand risk framework and became used across industry alongside the COSO in its many forms.

2.6.4 Risk management practice

Historically, business has based its risk practice on its value of worth. The risk cycle of analysis, controls and exhaustive risk identification often illogically stands as testament to a sound risk operation in many organisations. The current business environment, informed by past catastrophes, has shown a declining public trust in corporations. To recover, an increased audit-focused practice of risk management, can be clearly seen in industry and universities.

The audit-based risk models of the 1980/90s failed to detect the financial failures and chaos that was to come in the early 21st century. An entrenched reliance on these audit focused models, when combined with general management complacency, has allowed risk management approaches to continue to facilitate inert institutional thinking and practice.

Power, (2015) emphasized the role the audit function played in current risk management practice. Power, (2009 p 6) suggested that,

“the risk management of nearly everything – was less about managing risk as it is formally understood and more about creating organisational rhythms of accountability, and auditable representations of due process.”

Many businesses operating in turbulent conditions exhibit concern in changed set of circumstances defined by unknown outcomes and challenges. The unrestricted growth of technology has shortened business cycles and countless changes in operational environments have taken place. This overwhelming uncertainty and complexity led organisations to further rely on past practice, (Hamel & Prahalad 2000). This may explain why relying on previous risk methodologies, which deliver a form of certainty through an audit construct, is still current risk practice in many workplaces.

The use of operational risk models focused on known/past risks and deposited into pre-determined and rigid repositories, is preferred in the risk community, and will be examined in the study. Management companies have invested significant resources in understanding change and helping organizations adapt. Even more has been invested preparing bounded and analytical risk frameworks which emphasize risk avoidance. These frameworks ensure all possible events are captured resulting in comprehensive and compliant outcomes to assure executives.

Risk management is delivered in various ways internationally, although most risk practices are informed by a framework, in this case, the risk frameworks to be examined are the ISO, COSO/ERM, and SARF. This study will engage with Australasian university risk managers to explore interest in and impact of the frameworks on current risk practice. This research will be applied, evidence-based research to inform the development of a professional practice benchmark, recommendations, and educational resources to educate and inform the practice of Australasian university risk management professionals.

(O'Reilly, 2000)- suggests that the growing uncertainty in the global environment should drive executives to manage risk by understanding the essential dynamics of their environment. Executives could develop future strategic risk models using a knowledge management process. Managing uncertainty requires an open view of both the internal and external environments. Further to this, Brown (2007), investigating how horizon scanning has implications for risk management practice, argues that horizon scanning should inform organisational strategy development and similarly inform risk managers of new risks and threats to the organisation's objectives.

As noted above, organisations are becoming increasingly complex, driving demand for increased industry knowledge. This process can, in turn, impact on ingenuity in risk management practice. Kupers et al. (2012) indicate that, with a growing global business complexity, a new paradigm linking leadership, risk management practice and strategy could strengthen opportunities for organisations. Further, Kupers et al (2012) suggest that, in developing a dynamic approach to strategic risk management, interrogation of the levels of control assumed by management should take place. This practice can have the effect of construction of knowledge management and other strategic practices to embrace opportunities and deliver operational advantage (Elahi, 2013; Power, 2015; Rohrbeck, 2015; Schiller and Prpich, 2013; Van der Laan & Yap, 2016; Yang et al, 2018).

In the light of systematic failures of governance in finance and insurance in the 1990's and again in 2008, Elahi (2013) and Power (2015) have speculated how organisations may develop a creative enterprise with an ability to manage opportunity, in the face of a growing risk aversiveness in the general population. Elahi (2013) suggests that there is a recent change in perspectives of what risk is and where it is placed within the organisation. Now, in contrast to risk being seen as a negative process, there is an emerging view that risk management can promote creativity and add value to an organisation's strategy. As mentioned, other researchers suggested there is renewed interest in contemporary thinking on risk management, leadership and strategy (Elahi 2013; Power; 2015; Rohrbeck 2015; Schiller and Prpich 2013; Van der Laan & Yap 2016) which stimulated the researcher's interest in beginning this investigation.

Much contemporary literature argues the need for a shift from a narrow, bureaucratic, audit focused risk management practice to a comprehensive, whole of organisation creative practice associated with the notion of strategic risk management Rohrbeck et al (2015). Power (2015, p7) was critical of some contemporary risk

practices with “the rise of a managerial concept of risk management” playing a part in the shift to accountability above all else. Further, Elahi (2013) concludes that risk management is largely ad hoc. This is illustrated by survey completed by the Committee of Sponsoring Organizations of the Treadway Commission, (Treadway Commission 2004). Their report found that 60% of respondents say their risk tracking is mostly informal, or only tracked within individual silos, as opposed to enterprise-wide’. In conclusion, Elahi, (2013) emphasizes that enterprise-wide resilience is built through a strong risk management procedure in place to advise executive decision making and enable a strategic view of risk practice.

The current complex global environment, which incorporates increased potential for unplanned events, calls not only for a revisiting of how risk is managed, but importantly an urgency for executives to develop a strategic risk culture across organisations. Elahi (2013) argues that risk management has long been seen within the realm of auditors where compliance drives a linear view resulting in just satisfactory collections of risk scenarios and mitigation strategies (Rohrbeck, 2015; Schroeder, 2014; van der Laan & Yap, 2016).

The consensus with contemporary management researchers is that risk management practice is experiencing an evolutionary change primarily due to an increased business focus on organisational governance (Elahi, 2013; Purdy, 2009, Schroeder, 2014; van der Laan & Yap, 2016; Yang, 2018). This study will present, contrast, and assimilate these divergent approaches to managing risk. By including multi-disciplinary influences such as leadership, risk perception and social constructs, an exploration is possible to gain a holistic picture of the risk management practice environment.

An emerging view considers that strategic risk management can promote creativity and add value to an organisation, (Botterill and Mazur 2004; van der Laan 2015). Supporting this view, Power (2015) proposes that the management of risk, in shifting from an analytic and internal focus to embracing organisational inventiveness, while being a road less travelled by current leaders, is a goal to be strived for. Strategic risk management practice draws on foresight and strategic thinking. It ensures clarity of practice enabling the risk environment to reveal both immediate and future risk. An emphasis on the financial health of an organisation, which has historically encouraged a view that reliance on internal audit must, by definition, deliver better more productive analyses in planning and risk management practice, will be challenged in this study.

Views from strategy scholars (Elahi 2013; Power 2015; Schiller and Prpich 2013; Schroeder, 2014; van der Laan 2015; Yang et al 2018) indicate that a recent change in perspectives of what strategic risk management practice is and where it sits within an organisation is slowly becoming evident. There are many risks which cannot be anticipated. In fact, the most destructive risks are mostly unexpected. At the core of strategic risk management practice is a growing research environment looking at risk through a new prism. Through championing acceptance of risks, with minimized disquiet within risk identity and control procedures, acceptance of change and lowered impulses to the status quo, then new environments for risk management may be realized.

Change makes for an uncertain business environment. Changing global systems accelerate uncertainty. A changing and complex business environment makes valid risk prediction difficult, however, in enabling a strategic risk environment, an organisation can accept uncertainty, work within its parameters, which in turn, will encourage the growth of an innovation concept at its heart. The concept that changes no longer move in straight and predictable lines and in a way that has not been experienced before is refocusing understandings.

2.7 RISK MANAGEMENT FRAMEWORKS

This study has a core purpose to examine the risk practice of risk managers in Australasian universities. The use of risk frameworks were of prime importance in providing details of how risk practice worked in individual Australasian universities. As such, the use of the ISO and other frameworks were investigated within this Literature Review and presented within both the Delphi study and the survey as questions to uncover which framework serves the practice and how the framework will enable a strategic risk management practice. Of note, the revised International Risk Standard ISO 31000:2018, released in June 2018 was too recent to have any impact on this study.

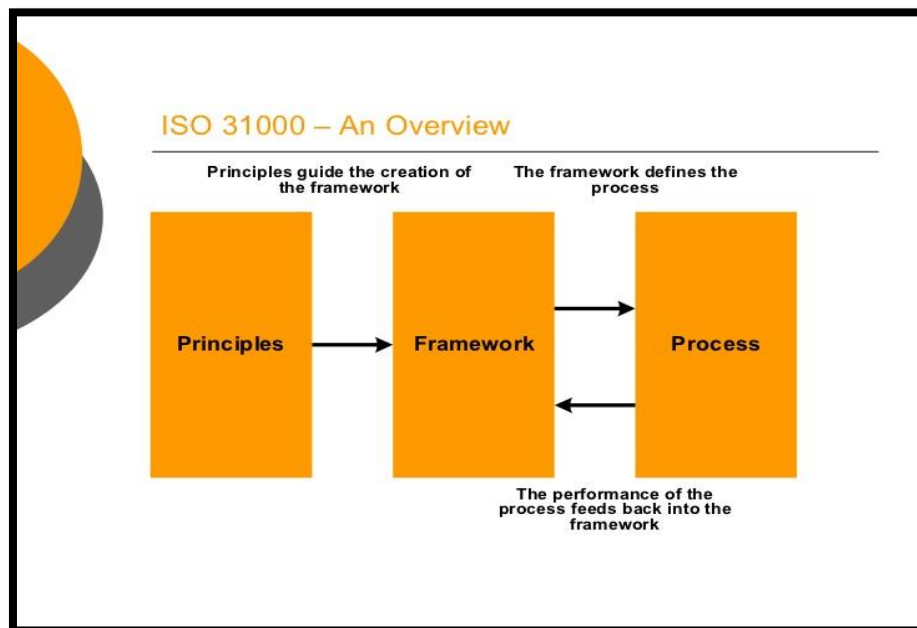
While it may be referred to in this paper, the ISO 31000:2009 is the Risk Standard in current practice across universities and upon which this paper is based. Two other known risk frameworks were highlighted to add strength to the work. COSO ERM and SARF were examined alongside the ISO, and analysed by functionality, the ability to support strategic risk thinking and manage impacts on risk outcomes.

2.7.1 International Risk Standard ISO 31000:2009 (ISO)

The ISO is a compilation of principles, framework, and processes. It began its life as the AS/NZS 4360:1999/2004 Risk management (AS/NZS) Standards Australia. The

focus of this risk framework was to embed risk management practice into the organisation's culture and processes. It also suggested a greater emphasis on the management of gains as well as losses. Additionally, it was designed to move emphasis from negative interpretations to an understanding of the consequences of uncertainty, namely that organisations who manage their risk effectively are more likely to achieve their goals.

Figure 3 ISO Overview



Source: ISO 3100:2009

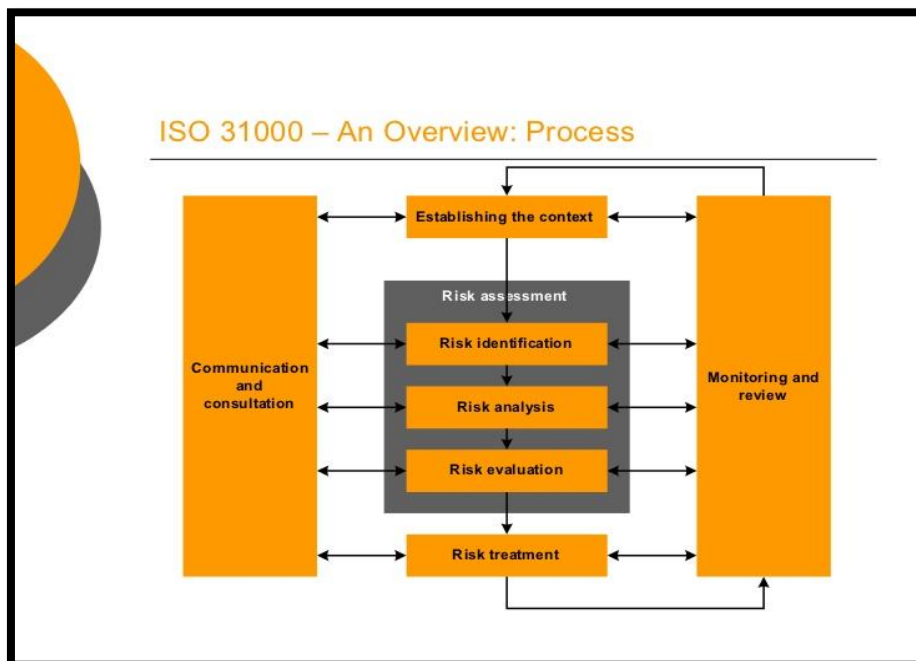
The ISO was developed by the International Organisation for Standardisation (ISO) working group in 2005 and published as an ISO in 2009. The Standard is not specific to any industry or sector. Additionally, the guidelines are generic and apply to any risk within the organisation. The ISO also guides the user to consider specific enterprises and organisational units. The purpose of the ISO was to encourage and enable new risk management thinking across each organisation. The shift to this ISO standard intentionally broadened the risk management continuum from its foundations to become a process of optimization, where both 'business as usual' and 'facilitation of strategic opportunities' can work together.

It will be argued in this study that, given the robust attention to its formation and the vast risk expertise of its establishing Board, the ISO exemplifies a strong, validated risk framework. Critically, this study will explore whether the ISO is viewed as a

comprehensive and consistent risk management enabler within Australasian universities. Determining how the ISO is used and whether there are significant intervening influences which affect the management of risk in Australasian universities, and risk management in general, was central to this research study.

Identifying and understanding both the uses of the ISO and its application in the workplace may elicit further insight and understandings of contemporary risk practice across the University sector, and to industry in general. Further, the emergence of the ISO as a contemporary Risk Standard grounds this study.

Figure 4 ISO Process



Source: ISO3100:2009

- **ISO Principles**

The ISO Principles are a significant addition to the previous risk framework (AS/NZS 4360:2004, 1999), encouraging each organisation to fashion its unique risk management framework within and across organisational divisions, thus constraining organisational penchant for silos. The ISO encourages organisations to follow these principles based on protecting organisation value; addressing uncertainty; and incorporating human and cultural factors. Historically, and importantly within this study, the ISO consultative committee’s direction was to encourage new risk management thinking across organisations.

Of note, the ISO does not specify which way the risk be determined but acknowledges that assumptions should be account for and communicated effectively. Additionally, the ISO suggests decision makers ensure that the organisation's overall business processes, including risk management methodologies, be individually designed, creating a tailored/bespoke risk framework. This study is focused on identifying and understanding both the use of the ISO and its application in universities.

- **ISO in Practice**

This research study sets out to explore how universities engage with the ISO and whether the ISO is viewed as a comprehensive and consistent risk management enabler within universities. Determining how the ISO is used and whether there are significant intervening influences which may affect the management of risk in Australian and New Zealand universities, and indeed, risk management in general, was central to this research study.

In conducting this literature review, the researcher found that initial literature enquiry revealed a dearth of peer reviewed research into the use of the ISO in Australian and New Zealand universities. Possibly the area of study is too small to warrant interest or, with risk management practice being adaptable across industry categories, it is combined into broader studies of risk practice. In this study, with the gap in the literature being apparent, a broader approach was taken to see what direction research is taking in examining specific industry risk management practice.

While the ISO framework is the primary term of reference as far as risk frameworks underpinning the study is concerned, other frameworks such as COSO (Committee of Sponsoring Organizations of the Treadway Commission), ERM (Enterprise Risk Management) and SARF (The Social Amplification of Risk Framework) also inform risk management practice.

2.7.2 COSO/ERM framework

The Enterprise Risk Management Framework, (ERM) is another influential risk framework currently used widely in organisations and is the creation of Committee of Sponsoring Organizations of the Treadway Commission 2004 (COSO). The ISO and COSO ERM have similar objectives and can exist working side by side Moeller (2011). The Treadway Commission board charged the Price Waterhouse organisation to author this new risk framework, specifically to highlight the need to manage risks and opportunities affecting value creation or preservation. Whilst displaying original

thinking in some part, the framework is substantially built on the existing COSO Internal Controls Framework (ICF).

The framework was developed within the COSO organisation to initially encourage cross-silo thinking (Arena, Arnaboldi and Azzone, 2010; Schiller and Prpich, 2013), and to reveal correlations in risk management practice across each enterprise. However, a rise in public distrust and desire for a more effective range of compliance strategies in organisations, have led to a transformation of the COSO into a complex and regulatory bound risk management framework, often promoted independently by consultants. Notably, there was initial disquiet with the COSO ERM risk framework, as many researchers and practitioners believed it was devised simply to replace the ICF (Robert R. Moeller, 2011).

- **ERM definitions**

ERM focuses directly on achievement of objectives and provides a basis for defining enterprise risk management effectiveness. There are multiple complementary focal points of ERM. Generally, it is seen as an organisation-wide process and importantly managed by individuals and groups at every level throughout the organisation. ERM is proposed to be applied in a strategy setting where the identification of potential events that may affect the organisation takes place. Management of risk is designed to provide assurance to the executive leadership group particularly with a demonstration of objectives achievement. ERM is an intentionally comprehensive statement that can be adapted and managed across all organisations and industries. The term ERM is now used widely across industries to mean enterprise risk management in practice (but not necessarily referring to the COSO ERM).

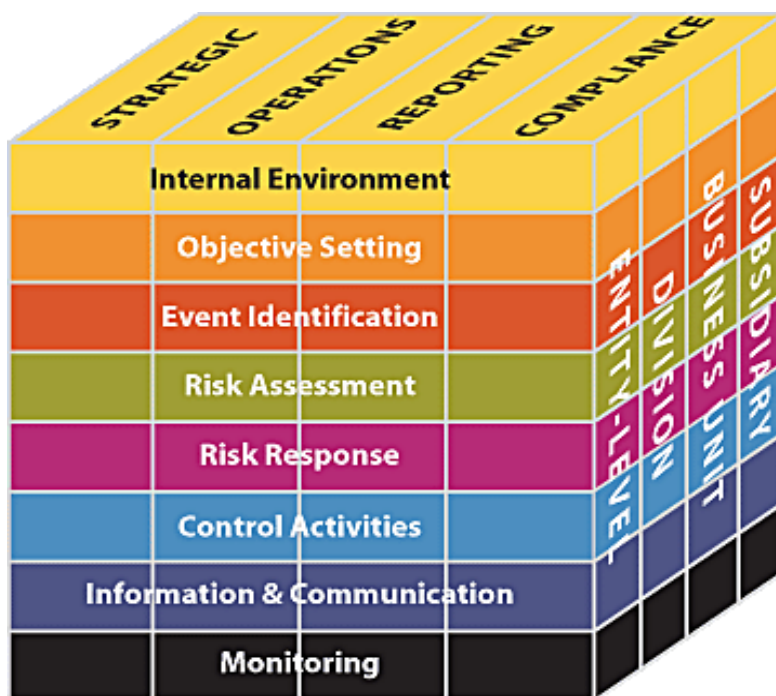
- **COSO/ERM Risk Practice**

ERM is strictly a serial process, where one component affects only the next. It is a multidirectional, iterative process in which almost any component can and does influence another. As with the ISO, ERM instructs the user to analyze risk using likelihood and impact terminology. Further, risk is assessed on an inherent and residual basis, a similar process to the ISO methodology. There has been a gradual move from calling the framework COSO to ERM which was the result in part of consultancies using the term which has become widely used across risk management practice.

Underpinning the COSO/ERM practice is the need for its principles to have a consolidated meaning and understanding. However, it is viewed differently across

organisations. Differing meanings can have the effect of preventing a common comprehension and perception of the risk process across the organisation. Importantly, this can be overcome by integrating the various appropriate risk management concepts into a local framework. This risk framework, then, can have an agreed definition with elements and key concepts easily understood. With this view, an organisation can use each of the chosen concepts and components to deliver an individualized risk framework.

Figure 5 COSO Overview



Source: COSO -ERM model 2004

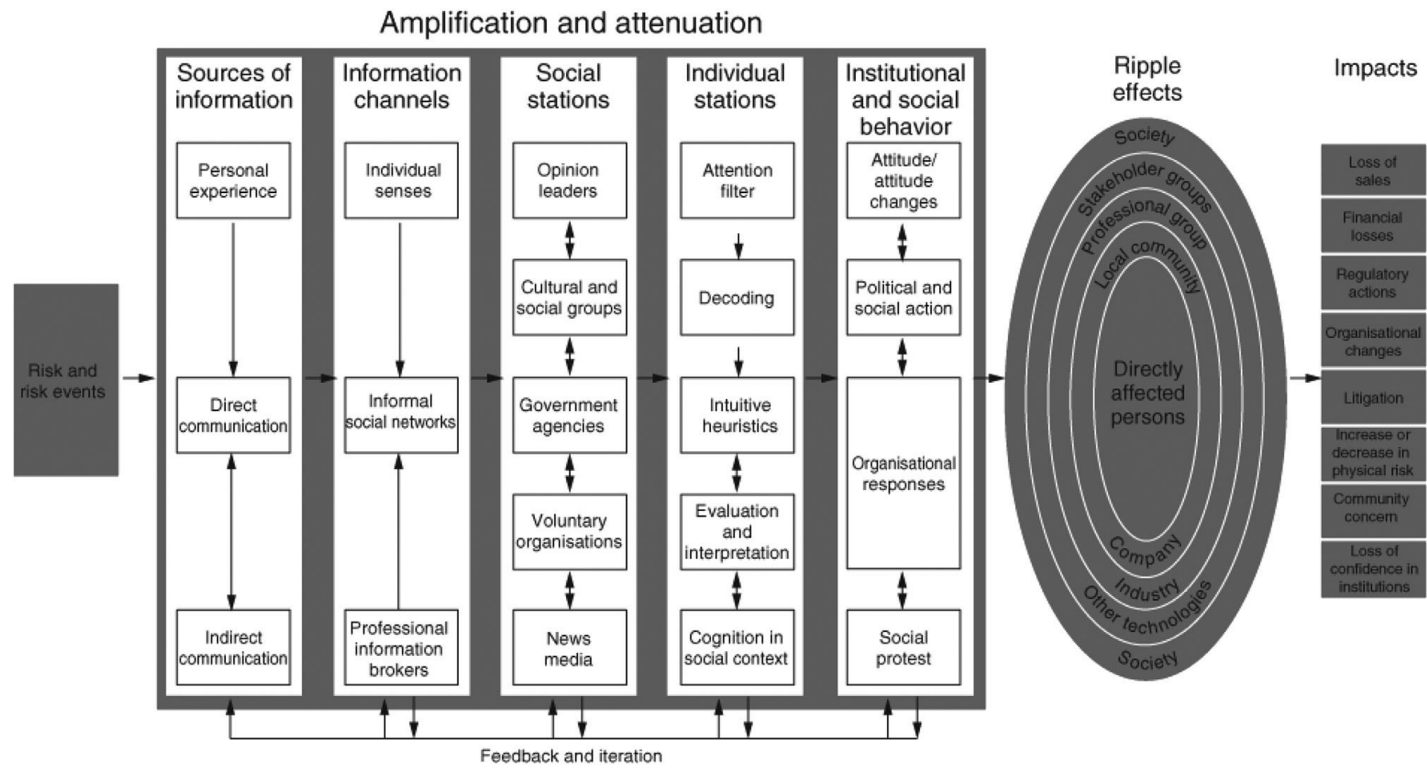
2.7.3 SARF Risk Framework

SARF (The Social Amplification of Risk Framework) was developed by a group of researchers in an effort to investigate the need for a risk framework with a systematic approach and a major consideration of risk interactions, psychological, social, institutional and cultural processes (Kasperson *et al.*, 1988).

SARF highlights the importance of understanding communication and its role in managing risk. The researchers recognised that many in industry saw risk management as a mathematical process that took no account of the existence of social construct implications. Within the SARF framework, formal and informal communication plays a

significant role in amplifying or diminishing the impact and analysis of risk in an organisation. Risk signals are processes initiated through individual and social amplification of a factor. These processes result in behavioural responses and changed impacts, making quantitative risk analysis impossible (Mase et al. 2015; Schiller & Prpich 2013).

Figure 6 SARF Risk Framework



Source: Kasperson et al., (1988)

- **SARF understandings**

Kasperson *et al.*, (1988) motivated through observations of the existence of social construct implications within risk management practice, understood that new risk understandings meant that important considerations such as psychological, social, institutional, and cultural processes must be investigated. The researchers acknowledged that the risk industry in the 1970s saw risk management as a precise process with control, direction, and capacity to manage all risk. Their views progressed the new risk management framework, the Social Amplification of Risk Framework (SARF), specifically driven by new understandings of risk perception, social culture, and their influence on risk management practice.

The SARF framework conveys an understanding that psychological, social, institutional, and cultural influences should be taken into account in any risk management practice (Botterill & Mazur, 2004; Mase et al. 2015; Schiller & Prpich 2013; Schmidt, 2004). Importantly this framework highlights the importance of understanding the dependencies between risks and is its key feature. The idea is central to this research study as it illustrates a strikingly different view of risk management practice that continues to struggle for general acceptance in the risk community.

- **SARF process**

SARF emphasises how risk perceptions intensify or attenuate risk; shape risk behaviour; influence institutional processes; and affect risk consequences. This framework is important in this study as it presents a little-known but valuable view of risk management thinking. The importance of risk perception within a risk management setting has gained interest in the current business environment with an impetus for researchers to engage with this perspective in contemporary risk studies.

Within SARF understandings, a risk becomes apparent through direct experience or by communications by others. The outcome of this interaction creates the risk representation in the first instance. This initial outcome is then subject to further modification, clarification, and explanation. These further examinations take place both at the individual level through psychological filters, and through social and cultural filters. It is important to note, from this study's perspective and argument,

that these processes are not independent, and their interactions can change outcomes and behaviours in subsequent iterations.

Concluding this point, Mase, Cho and Prokopy (2015) suggest that psychological, social, institutional, and cultural processes should be taken into account in any risk process.

2.8 PSYCHOLOGY OF RISK

2.8.1 Risk perception

Formal interest in risk perception dates back to the early research of the 1970s in uncertainty, probability and values thinking (Fischhoff et al. 1975). In their lifelong examination of uncertainty, probability and values thinking, researchers Amos Tversky and Daniel Kahneman, questioned the role of values in decision making and highlighted the differences between lay and expert thinking, (Breakwell 2000; Fischhoff *et al.*, 1975; Taylor-Gooby and Zinn, 2006; Tversky and Kahneman, 1986).

The study of risk perception continues to be a growing area of importance to researchers. (Botterill and Mazur, 2004; Breakwell, 2000; Bullock Greer, 2019; Elahi 2013; Greenberg, Slovic and Lowrie, 2014; Schroeder, 2014; Taylor-Gooby and Zinn, 2006;) confirm that an extensive body of research on risk perception exists.

Risk perception understandings highlight this risk phenomenon, with Schmidt (2004, p.3) offering a comprehensive definition, that,

“risk is perceived not solely by technical parameters and probabilistic numbers, but in our psychological, social and cultural context. Individual and social characteristics form our risk perception and influence the way we react towards risks.”

There are inconsistencies between understandings and uses of formal measures of risk and the notion of risk perception. Risk perception, however, appears to be inherently multidimensional and much more personality and context sensitive than once understood. One issue for further development of risk perception is that researchers tend to support one view only, two dimensional or multidimensional, but very rarely as a hybrid.

In general, risk management practice calls for a value judgement to be made in order to make an assessment or conclusion. However, although informal judgements

are important in all risk scenarios, experts tend to underappreciate the value of behavioural and social assumptions.

2.8.2 Risk perception characteristics

Notions of risk perception, social constructs, and risk influences have been well documented in both risk and psychology fields since the 1960s, providing significant research studies to the present day (Botterill & Mazur, 2004; Bullock Greer, 2019; (Greenberg, Slovic, and Lowrie, 2014; Schwartz & Hasnain 2002; Taylor-Gooby & Zinn 2006). Psychological and social filters are often unconsciously used by people and interactions vary widely, causing behaviour changes between decisions and actions.

Perception is influenced by demographic factors, personality profile, past-experience, personal or group ideology. Additionally, gender, ethnicity, age, socio-economic status, region are potential sources of demographic variation. The psychometric paradigm of risk perception aims to form a representation of people's risk perception (Bullock Greer, 2019; Greenberg, Slovic and Lowrie, 2014). This methodology assumes that risk is subjectively defined by individuals who may be influenced by a wide array of psychological, social and institutional and cultural factors, Greenberg, Slovic and Lowrie, (2014).

Risk perception has attracted much research interest, particularly the correlation between personal beliefs and values. (Botterill & Mazur 2004; Bullock Greer, 2019; Greenberg, Slovic and Lowrie, 2014; Schmidt 2004) advise that social and cultural factors, as well as heuristics or rule of thumb, are enabled by the individual to understand risk situations. Essentially, there may be many perceptions of an individual risk.

There are two inherent processes which people use to perceive risks, associative processes which are based on internal feelings used to deliver an instant opinion or judgement, and cognitive processes which rely on a deliberate examination of facts before making a choice (Bullock Greer, 2019; Greenberg, Slovic and Lowrie, 2014; Visschers, 2007). Associations are quick and sometimes automatic responses anchored in the human system.. Slovic & Peters (2006) suggest that risk is perceived in two particular ways, through intuition (lay people) or logic (experts) This view is extended by Hargreaves, (cited in Taylor-Gooby & Zinn 2006), who noted that risk

is defined by personal views and experience called cognitive heuristics. Both intuition and logic play a distinct role in fashioning the individual's thinking before giving a determination.

Researchers have discovered the existence of interactions which may influence risk perception. These interactions can be categorised three ways. Initially as qualitative risk characteristics measured through a psychometric paradigm. Secondly, heuristics or internal personal feeling have an important role, and finally, the existence of dual process theories. What is called dual process theory shows that there is a distinction between analytical and heuristic methods of information processing. Information can be managed by just one of two processes, both sited at each extreme of a communication continuum. Importantly, the analytical process is deliberative and takes time. Conversely, the experiential heuristic process is shallow and rapid. Breakwell (2000) asserts that with consideration of these two processes, it is not possible for both to be used simultaneously and in effect, one of these processes will dominate the other.

In examining the ISO and ERM risk frameworks, a focus on the importance of inherent risk and residual risk is seen as a critical methodology within each framework. While this drives risk identification and analysis practices, clearly it does not address decision thinking or the elements of risk perception, which critically precede risk identification.

2.8.3 Decision theory

There is much research focused on the importance of understanding psychological approaches to decision making. This view maintains that individuals can unintentionally influence risk outcomes and this conclusion is a critical component of this research study. Understanding decision theory is key to successfully managing risk. Widely researched, decision theory proffers a multi-dimensional approach informed by organisational social parameters. Such an approach results in behavioural change through the interaction of psychological and social filters (Breakwell 2000; Harris, Jenkins, & Glaser 2006; Greenberg, Slovic and Lowrie, 2014; Schiller & Prpich 2013).

Strategic thinking is linked to the way decision makers think and behave (Tavakoli & Lawton 2005). The literature also reflects evidence that leaders' complex

thinking, and personal and professional values influence decision characteristics in predicting strategic decision making (Becker 2002; Berger et al., 2008). Additionally, there is much evidence that in the past, organisations have intuitively placed great emphasis on analytics to provide evidence in support of decision choices. Key characteristics of strategic thinking, such as intelligent opportunism in decision making, are essentially overlooked by executives, especially in the context of organisational risk aversion.

In discussing economic psychology, Hargreaves-Heap 1992 (cited in Taylor, Gooby and Zinn 2006) was able to determine that individual risk impact and probability estimates in risk identification and analysis were likely to be flawed. The authors conclude that there is a growing focus on the importance of individuals understanding both risk perception in general and the existence of psychological factors in risk decision making. It is becoming more widely accepted that personal views and experiences play a distinct role in fashioning the individuals' compensatory thinking before ascertaining a risk determination or its probability of occurring.

2.8.4 Probability

A measure of probability is used within current risk analysis practice to calculate a scale for decision-making using consequence and impact measures. Using these two measures carries with it an assumption that the subsequent results or decisions show both an impartial agreement of experts and is indicated to be correct. From a risk perception perspective however, experts' conclusions may not be impartial or value free as the nature of decision making relies on and is influenced by social parameters. This issue is championed by Kahneman and Tversky (1981) and supported with further research works, (Botterill and Mazur, 2004; Greenberg, Slovic and Lowrie, 2014; Sjöberg, Moen and Rundmo 2004; Slovic and Peters, 2006).

Subsequent implications for risk management practice is that perhaps there is a flawed assumption that the risk framework and process is the critical component of risk practice. The criticality of understanding values is underpinned by this early research described previously and was brought to the attention of this study.

Further, Botterill & Mazur (2004) suggest that individual risk perceptions are not effective within the measurable probability of risk analysis demanded by

organisational risk processes. This illustrates the difficulties of using a risk perception lens within a quantitative risk analysis framework and is a key point to be developed within this study.

2.8.5 Heuristics

Heuristics can be called rule of thumb, or gut feeling by lay people. Heuristics consist of terms, anchoring, availability, and compression. Anchoring describes a tendency to focus on the first number or most important looking number and adjust other estimations in favour of that first number. Availability finds people remembering an important fact through the ease with which it is remembered, and compression means underestimating variabilities within a given range (Kahneman, A and Tversky, 1984, 2009).

The importance of heuristics in risk management practice is that it affirms the role social factors play in risk assessment, leaving a meaningful legacy for current risk researchers.

It is proposed that most university risk management practice is associated with heuristics (subconscious) informing risk framework (conscious). In other words, the subjective judgement exercised in assessing quantitative risk is fundamentally flawed and its utility severely undermined. Sjöberg, Moen, & Rundmo (2004) suggest that heuristics remains a primary driver of scholars' interest in risk perception. Visschers *et al.* (2007) explain that quick and intuitive processes, particularly with lay people, give an immediate response. An expert will usually use cognitive processes that require some time and thought. Interestingly, however, both are valid within an individual's risk perception processes in influencing how risk is communicated Greenberg, Slovic and Lowrie, 2014 (2014).

2.8.6 Risk communication

The impact of risk communication depends on a complex interaction between the characteristics of the audience, source of the message, and its content. In terms of risk management practice, and with implications for risk identification processes, risk communication has multiple variations in the message itself which impact on risk decisions. Breakwell (2000) made known that her findings complemented other work in the area of risk perception, with a focus on the importance of the risk message. Breakwell suggests that social processes influence risk communication which, in turn,

can increase or lessen individual or group views on risk. The author was influential in developing global interest in risk communication and perception, citing that perception impact is highly relevant to the complexity of each interaction. Breakwell (2000) asserts that judgements made about a risk entail many qualitative aspects as well as demographic characteristics, personal and organisational control, individual attitudes, and cultural attachments.

Risk messages begin social processes of amplification and attenuation and are rarely controllable. Mental models of hazards are used to identify accurate and inaccurate beliefs. They are used to bridge the gap between lay and expert models of risk. Additionally, the source of risk messages must be trusted. Breakwell (2000) asserts that trust is associated with the expertise of the source. Critically, the source of the message must be unbiased and knowledgeable and with no vested interest.

Also, according to Breakwell (2000), the structure of risk communication is examined within the field of social psychology which understands that factors affecting persuasion impact the message validity. Additionally, the audience characteristics; source of the message (trustworthiness); and message content, are areas that should be taken into account with every risk-based communication. Decision making, therefore, is reliant upon decisions that may or may not be well-founded, depending strongly on interaction of the factors and contexts within which they are exercised.

2.8.7 Social constructs

Botterill & Mazur, (2004) and Taylor-Gooby & Zinn (2006) indicate that current researchers are now investigating risk through a social lens after decades of research and influences from a mitigation and compliance perspective. As previously mentioned, perceptions are multi-dimensional and bound by social parameters resulting in behavioural change through the interaction of psychological and social filters (Bostrom, 1997; Breakwell, 2000; Greenberg, Slovic and Lowrie, 2014; Harris, Jenkins, & Glaser, 2006; Schiller & Prpich, 2013).

Researchers also advise that social constructs should not be overlooked in a study of risk management. There are movements in risk management research relating back to earlier work in the 1970s, investigating the influence of culture, realism, power, psychology, trust and individualism (Taylor-Gooby & Zinn, 2006). The role of strategy is now also recognized as a sociological phenomenon (Botterill & Mazur 2004;

Bullock Greer, 2019; Greenberg, Slovic and Lowrie, 2014; Schmidt 2004). It could be that uncovering tacit knowledge from within organisations may allow examination of operational routines that include an understanding of risk.

An important dimension of strategic thinking reveals that the notion of socialization can impact decision making practice. Simply put, a workplace is made up of people who engage with each other professionally. Levels of seniority, social attachments, both team and individual characteristics are impacted to an extent reflecting the social order of an organisation. Effective understanding of beliefs, values and practices within a workplace are becoming an awareness that leaders may find impossible to overlook in modern day organisational practice, including how risk is communicated, perceived, and incorporated into strategy.

To understand how organisational thinking is influenced, for example, through weak analysis or reluctance to challenge decisions put forward, is of importance in this study. Moreover, group think can lead to risky behaviour and lack of oversight within the planning function, including lack of critical reflection by management, (Liedtka 2008; Greenberg, Slovic and Lowrie, 2014; Khurana 2007; Mintzberg 2007; Vaara & Durand 2012).

It is imperative that an understanding of broader social issues and their impact on decision making practice are included in strategy-making (Tsoukas, 2010; Vaara & Whittington 2012) and necessarily include a consideration of risk. Botterill and Mazur (2004) note how there are other factors informing risk perception, with social constructs a prominent player. The authors note that the general assertion that measurement of risk can be achieved within a construct, does not account for individuals' ability to form opinions from available information, personal opinion, judgment and past experiences.

2.8.8 Summary

The review of the literature related to risk management showed that a combination of strong and inventive leadership, awareness of social aspects of an organisation and critical understandings of knowledge management are key to managing a contemporary organisation within the context of risk. There is, however, evidence in the current research that the use of operational risk models focused on known/past risks within a compliance bound framework is the preferred practice in the

broader risk management community. This is at odds with the constructivist nature of risk perception (and communication) as a social construct.

By contrast, many researchers are focusing their examination on an ensuing dominant risk logic informed by strategic risk management. In addition, enabling a strategic foresight approach (i.e., anticipation of futures and associated risk) ensures the organisation has certainty in the development of risk knowledge creation.

2.9 LEADERSHIP

Contemporary theory on leadership is significant to this study because it challenges previous management paradigms, (Avolio, Walumbwa, & Weber 2009; Carter, Clegg & Kornberger 2008; Elahi 2013; Kupers, Mantere & Statler, 2012; Montgomery 2008; Schroeder, 2014; Van der Laan 2016). It is important to understand that leadership and management differ. Additionally, organisations must be reminded that both are necessary in any period of uncertainty. Leaders can be differentiated from managers in that they lead change either solely or within a group. The role of a manager is to keep the business running consistently to achieve the status quo while waiting for leadership direction.

Kotter, (2001, p.85) summarises,

“Managers promote stability while leaders press for change, and only organisations that embrace both sides of that contradiction can thrive in turbulent times.”

It is possible that both management and leadership may continue to be viewed as a single entity, confusing the overlapping roles. A leader can be a manager and a manager a leader. One person can comfortably hold both roles, but the challenge is to ensure that the leader understands that leadership incorporates change within a new leadership paradigm. Kotter (cited in Van der Laan 2008, p34) confirms that, ‘both are necessary for success in an increasingly complex and volatile ... environment.’ Critically, a leader must also practice an ability to be creative within a chaotic environment ensuring the organisation’s trajectory embraces foresight and strategic thinking in the first instance to anticipate short and long-term opportunities and risks.

2.9.1 Current practice

Historically, managers have focused on protecting bottom-line results, however there is evidence of new prosperity in those organisations who have embraced strategy through implementing a strong yet creative view of the future, driven by new leadership practice and understandings. Rising uncertainty has driven organisations to examine the means to exploit new opportunities while managing consistent productivity. Kotter (2001) expected that traditional management practice would have no choice but to default to a position where future understandings take an unambiguous leading role. The practice of risk management is not immune to this new leadership imperative.

There are examples of current organisations who rapidly comprehended the progression and implications of environmental turmoil around them. In adopting new management paradigms these organisations are able to demonstrate positive business outcomes. Of note, such highly advanced capabilities that are adaptive while charting new directions may take years for organisations to develop. Such developments within future-oriented organisations are increasingly successful in developing leader-managers and closely associated with strategic risk approaches. In contrast, organisations who find comfort in what they believe and frame as a stable known environment, have shown that they are likely to face disruption. As such it is suggested that for risk management practice to evolve to better reflect the turbulence of our times (Hamel 2008), leadership is required to think differently about how risk is constructed.

Technology and information/knowledge growth have caught many by surprise, which may be why leaders have been reluctant to look outside their organisations, opting for the safer choice of conducting business as usual. Many views within the literature concur that leadership, by singularly embracing a rationalist approach to management, has been 'absent' from current practice (Montgomery, 2008; Porter 2015). In fact, there are views that leadership has defaulted to non-leadership roles, the domain of the planner and often the auditors are common, (Braes and Brooks 2010; Hamel 2008; Kotter 2001; Montgomery, 2008; Porter 2015). Additionally, Braes and Brooks (2010) contend that management had repurposed old and unsuccessful functions rather than entering into a new paradigm of management purpose and practice.

This 'safe' practice was demonstrated by the dramatic shift in employment after the GFC to back office compliance staffing, at the cost of frontline service staff (Van der Laan & Yap 2016). The subsequent risk management view became reactionary, controlling, and an all-consuming process to plan and manage all identifiable risks. There are many organisations who adopt this conservative approach. Their leaders are unable to recognise not only the changing environment but the need to operate differently to be both successful and sustainable. Inayatullah, (2006) suggests that such lack of recognition prevents the organisations from being innovative. Leadership inefficiency leads to on-going corporate negativity, relegating the organisation to failure in many instances.

The current rate of change has driven a critical need for leaders with vision, which is not necessarily a learned skill. Kotter (2001) argues the importance of a differentiation between the need for vision and the need for managing complexity/planning. Further, he maintains that leadership needs a visionary outlook and that the subsequent planning function should be delivered across management, implying the inclusion of risk.

Historically, financial wealth and gain has been the primary benchmark for success based on the assumption that it stimulates prosperity more broadly. By using a strategic management approach, new areas of thinking on what comprises success can be introduced. Ultimately, a strategic approach will enable the organisation to transform from a purely financial perspective to a broader and more inclusive operation through a relationship with shareholders and other stakeholders, for example, the community.

Vaara and Durand, (2012) maintained that, 'strategic models consist of positioning an organisation in a value system, analyzing properties of its resources and capabilities'. They further submitted that 'strategy is at the interface of changing organisations in changing environments' and add that although sustainability can be a successful initial step in 'futures understanding,' it is imperative for the organisation to be at a turning point, re-creating the organisation's world view Voros, 2006).

Voros, (2006, p.16) comments,

“Our civilisation should thereby have the appropriate degrees of perspective, wisdom, creativity and compassion necessary to sustain ourselves into the distant future.”

This suggests that a new paradigm of leader capabilities is needed to deal with unprecedented complexity and change.

2.9.2 Future of leadership

Much contemporary research investigating leadership and strategy indicates the existence of an increasing need, at the practice end of strategy, to enhance the role and capacity of leadership in strategic thinking (Burke *et al.*, 2006; Gibbs & Goldsmith 2000; Kanter, 2006; Mintzberg, 2004; Montgomery, 2008; O’Regan and Ghobadian, 2004). Sardar (2010) summed up this view by concluding that leadership enabled creativity and imagination are the most important ingredients for resilience in post-normal and challenging environments.

Current leadership practice is informed by both the past and current uncertain environments. With the tensions between both, leaders may discover that new knowledge is essential in complex fundamental ways in an environment with new external issues affecting leadership Burke (2006). Burke (2006) further advocated that there must be a re-think of leadership practice, emphasising the need to understand what underpins executive values and thinking. The modern organisation represents a range of values held both internally and externally which must be acknowledged and acted on by leaders. Critically, the leadership paradigms of the past should be replaced with new understandings of what values, motivations and essence drives organisational mechanisms.

Yet, there continues to be pressure for enterprises to drive business performance through increased focus on governance, risk, and compliance. Perhaps this merging or blurring of functionality and frameworks has caused current dissonance of turmoil and societal need for surety. Van der Laan (2016) proposed that, in engaging with strategic foresight, organisations could embrace the future through knowledge creation. Implementing a strategic foresight praxis can reduce uncertainty and influence the achievement of organisational goals. Additionally, Van der Laan (2016) advances that

leadership may have lost its way by singularly embracing a systematic approach to management.

Many researchers agree that leadership has defaulted to non-leadership roles, the domain of the planner and often the auditors, (Montgomery, 2008; Mintzberg cited in Van der Laan 2016) resulting in managerialism pervading organisations. This study will explore these divergent themes, the impacts on risk practice and the validity of the ISO as a contemporary risk framework.

2.10 STRATEGY

In defining strategy and its constructs there is much consideration and many interpretations of what the future really means for organisations. Current research suggests that the practice of strategy is currently at the cutting edge of organisational transformation.

The nature of the future business environment is well described by Gelatt (in Van der Laan, 2008), who declares,

‘The future doesn't exist, never did, and never will. By definition, the future hasn't happened. And when it does happen it becomes the present, and then quickly becomes the past.’

The future is inexorably related to anticipating the future and therefore strategy. Carter et al (2008) suggest that the role of strategy is to ensure a clear future for the organisation, describing strategy as a ‘work in progress’. Vaara & Durand (2012) agree that the full potential of strategy in a business environment is still not yet developed, though mention that some organisations which are practicing strategic management are now at the cutting edge of organisational transformation.

Contemporary understandings of ineffectual organisational outcomes, illustrated by the many company failures in this environment of change, reinforce the view that strategic thinking is an essential component in determining new strategic directions, particularly within current environmental flux (Teese et al, 2006) in ‘Dynamic Capabilities’. Liedtka (2008) notes that while strategic thinking has a critical role within contemporary organisations, practitioners should understand that it can become a term with very little meaning if used within a traditional management approach. Strategic thinking and strategic foresight have not been regarded as useful methodologies as mentioned previously, with executives continuing to default to old practices.

The levels of uncertainty in this turbulent business environment have ensured that known practices continue to be upheld by conservative thinking stakeholders and reticent operatives. Inflexible methodologies reliant on compliance and restraint perspectives are unable to incorporate alternative images of the future (Heijden, 2004).

Research also strongly evidences executives find strategic thinking their most significant work-related challenge. Prominent scholars such as Michael Porter, Henry

Mintzberg, and others, described this era as typified by uncertain and unstable times. Further, Whittington (2004) indicated that there was a large gap in strategy literature defining strategic thinking and how it may apply in practice and forward planning.

2.10.1 Background

McGinnis & Ackelsberg (1983) recognised a strategy dilemma in the early 1980s. After initial interest in enabling strategic approaches towards the end of that decade, the authors witnessed a gradual return to reliance on quantitative analyses as the driver of business practice and decision making. Further, the authors stated that if such practices continue, the outcome would be analysis paralysis thus narrowing the scope of possibility and organisational decision making. Yet early management experts such as Rosabeth Moss Kanter and Charles Handy, in the mid-1990s argued that the approaching uncertain business environment showed a critical need to integrate innovation and strategy. Additionally, Hamel & Prahalad (1996) indicated that the perception of this unprecedented and unfamiliar future will become known as the information economy. Further, a solution may be to adopt a dual approach to strategy in the first instance, one to predict the future, the other to create the future (Raimond 1996).

Current literature describes a recognition that a shift from a narrow, linear risk management approach to a comprehensive, whole of organisation strategic practice is a desired outcome. Elahi (2013) concluded however, that risk practice continues to be viewed within a compliance framework. From that place, he argued, such practice cannot inform business creativity, broader strategic perspectives or assist in the development of agility in the marketplace. Further to this Brown (2007), investigating how horizon scanning had implications for risk management, agreed that organisational strategy development can inform risk managers of new risks and threats to the organisation's objectives and vice versa.

Strategic foresight adds another dimension in examining this area where future changes are accounted for in shaping organisational direction. As such strategic foresight can be seen as an integral part of strategic planning, supporting innovation. Conversely, Daheim and Uerz, (2008) suggest that strategic foresight struggles with challenges to become relevant and used in today's organisations. The research shows that there is still only a tentative acceptance of a strategic view of risk management

practice however many researchers are striving to propose strategic understandings in risk practice.

Building on these early strategy perspectives, Carter et al. (2008) proposed that strategy itself has reached the need for a new perspective, challenging previous practices. Carter (2008) suggested that although managers may be comfortable in current self-styled business environments, their reluctance to embrace a new approach to strategy will deliver an outcome of organisational inertia. In support of this view, Vaara & Durand (2012) contended that the full potential of strategy has not yet been developed. The authors contended that, by taking a broader view of strategy, understandings which provide ‘explanatory power of strategic management’, including a transformational view of social interests may be discovered.

Ratcliffe (2006) explained that the complex global environment is affecting organisations as never before. The author expounded that the complexity leads to an impact on the organisation across all its functions, challenging long held beliefs about what business and competition was and what new options in value delivery should be.

Through links with innovation and strategic planning, foresight becomes an integral part of strategic management (von der Gracht et al., 2010). Strategic foresight is also closely associated with improvisation based on detecting hazards and risks in the future (Mendonça et al., 2004).

Van der Laan (2008, p.32) remarks that,

“strategic foresight in itself, challenges the disciplinary boundaries
...and by extension encourages collaboration and the exploration of
new knowledge”

2.10.2 Strategy understandings

Historically, the development of strategy practice shifted from an internal focus, such as developing and measuring goals, to an emphasis on all things external such as industry structures, associated complexities, and competitive environments (Porter, 2015). Current practice shows a continuation of previous business approaches showing a notable increase in the control phenomenon, a key management function. Excessive control acts as a barrier to strategic practice and innovation growth within an organisation (van der Laan & Yap, 2016) and thus stifles access to opportunities and rewards. While there are suggestions that global business practice needs to be seen

through an entirely new world view, the fundamental difficulty is that, not only do past executive processes continue to dominate, they are still regarded as the crucial answer to determining organisational resilience (Hamel & Prahalad 2007; Liedtke 2008; Porter 2015; Van der Laan 2008; Vaara & Durand 2012; von der Gracht et al. 2010).

However this practice sits at odds with the new forward view of strategy. Van der Laan (2008) defined strategy as a combination of understanding the firm's positioning, its proposed direction, co-creation of value, and strong leadership. Vaara & Durand (2012) called strategies theories of action which were justified and reproduced in and across fields, societies, and nations. Other views in defining strategy suggested it was important to include recognition of the unprecedented global growth of knowledge and information in determining that the way the future will evolve is likely to be in the realm of the improbable, (Hamel & Prahalad 2007; Liedtka 2008).

With emerging views of contemporary strategic thinking as illustrated in this section, the concept of strategy continues to be heavily influenced by models based on quantitative empirical past practice and economic theory such as that mentioned by Porter (2015). Organisations continue to show little appetite to champion strategy as a dynamic new outlook towards driving business opportunity. Many longstanding business strategy statements endure, still reflecting a business-as-usual stance, highlighting the continued reliance on quantitative data and traditional thinking and practices.

One reason may be that executives confuse contemporary strategy with current processes of producing annual updates of goals and operational plans in the name of strategy. This is illustrated by continued business practice and consultancies proffering this strategic outlook and risk methodology, in so doing impressing traditional practices as the best use of resources. The consultancies use risk templates which are commonly available as practical artifacts, and indeed many contained within in the current ISO and ERM frameworks, that is, risk registers and heat maps that have remained largely unchanged for decades (van der Laan & Yap 2016).

It is notable that such continued and unchallenged practice can become a threat in developing an authentic strategic and risk environment. The consequence is seen by the restricted extent in which businesses are able to develop future direction and the capacity

to innovate. (Von der Gracht, 2010; Vennemann & Darkow; 2010 reject the conservative view and argue instead that an encompassing strategy as a priority is critical to success.

Strategizing is an essential and compelling activity for organisational executives and indeed it is their fiduciary responsibility. It has the power to enable an organisation to understand its broader capabilities in order to become an innovative performer. In support of strategizing, van der Laan (2016) proposed that leadership and strategy research converge at both the organisation and individual levels. Of interest is how the concepts of foresight and strategic thinking, which feature prominently in research literature, are related to the development of a strategic focus in an organisational context, enabled through the paradigms of its leaders.

2.10.3 New risk strategy methodologies and models

In the late 2000s, models of strategy had begun to emerge, however it is notable that their structures were primarily influenced by the use of past compliance-based principles. Consequently literature on compliance-based risk practice has rapidly evolved into many theories and frameworks which are currently referred to as enterprise risk management (ERM), amongst other names yet remains largely the same in practice. In these risk models, re-purposed methodologies, diagrams, and workflows are rebranded and represented as cutting edge strategy and risk management, particularly focused on by business consultancies and learning institutions. Yet the past business practice continues, informed and substantiated by previous practices of executives, management consultancies and compliance, all of which focus on a total management control approach and not strategy as it has been proffered for contemporary organisations.

2.10.4 Current strategic environment

Organisations are currently working within their traditional marketplaces but finding a new and chaotic operating environment. The dilemma for executives is to understand how to build organisational strategies which will remain not only competitive but ahead of their competitors. There may be the need for a solution to the current systematic chaos within this climate of global instability.

Strategy researchers argue that many executives still do not have a grasp of strategic understandings. Current organisational thinking on creating strategy is viewed as solely the task of the executive. Johnson et al. (2003) express a challenge to

practitioners to leave economic metaphors in the past and embrace a new thinking model, declaring that it is possible to enable an environment which highlights the value of creativity and innovation growth. Many contemporary researchers agree that a broader and more accurate view of strategic management practice is essential to provide critical understandings of the power of strategy in the first instance. This has implications on risk management approaches and is discussed later.

Mintzberg (2007) points out that the organisational structure can, in fact, act as a pivotal point for strategic planning. An organisation can create an environment of enquiry challenging global assumptions of practices especially as they relate to strategy outcomes. McGinnis & Ackelsberg (1983) in their foundational strategy text suggested that there was a negative result in having a narrowly focused strategic plan. The researchers suggested that in such an environment, innovation cannot emerge unless assumptions are continuously challenged. Further, that in challenging assumptions, understandings on the congruence between leadership and risk management as they relate to strategy can be discovered. Most literature does not examine and evoke notions of a greater understanding of risk management beyond its frameworks, in the main.

Kupers et al. (2012) suggest that a new paradigm of leadership and strategic management might consider that there are multiple narrators whose voices should be considered. Carter et al. (2008) also put forward the notion of strategy, historically a result of power and politics, as a contemporary view of strategy as practice which might be worth addressing. Researchers such as Carter (2008) and Kupers *et al* (2012) further comment that the current dominant notion of strategic planning is seen as a disabler rather than as an enabler.

With the current challenging business environment, some organisations are embracing the uncertain future using new methodologies such as scenario and contingency planning to find value, (Rigby & Bilodeau, cited in Smith *et al.*, 2013). Hines (2002) suggests that shareholders are increasingly seeking new principles, approaches and tools for delivering the goods. Another result of this challenging environment is that organisations have been compelled to accept new responsibilities, for example the importance of corporate social responsibility (Gibney et al. 2009). Finally, in supporting strategic practice, Smith et al. (2013) emphasized that the organisation must identify and support the contribution of people positioned in a variety of roles, not just the executive.

2.10.5 Strategy as a social construct

In understanding strategy and strategic foresight, Hamel & Prahalad (2007) point out that organisations have an inherent dominant logic, a social construct and innate human capacity. Whilst it may be useful keeping the machinery of the organisation relevant, reliance on dominant logic can hamper the organisation as it navigates new environments.

Hatch and Schultz, (2002) note that strategy is a highly dynamic process, describing strategy as social construct which is managed at the executive levels of an organisation, including external strategic inputs. Rohrbeck & Bade (2012) suggest that the global sensation of external social networks can have dynamic influences on business. In fact, that growing business can be entirely reliant on these influences which can underpin its survival.

2.10.6 Strategic foresight

Foresight is a complex practice constrained by limitations in: constructing the future (Martin, 2001); uncertainty (Cuhls, 2003); strategic methodologies (Woods 2003, Horton 2007); inherent blindness (Rohrbeck *et al.*, 2007); power shaping (Carter, Clegg and Kornberger, 2008); old dominant thinking (Daheim & Uertz 2008; Kuosa 2010); and, economic influencers (Vaara and Durand, 2012).

A definition of foresight, according to Cuhls (2003) is neither prognosis nor prediction. Its value is to examine interactions between the actors across an organisation and externally, to enable and constrain future uncertainty (Cuhls 2003; Daheim & Uertz 2008). Or loosely, the definition of foresight could simply be intelligence gathering Horton (2007).

In engaging with foresight, organisations may embrace the notion of possible futures through knowledge creation, while detecting risks and hazards, and increasing awareness of possibilities, (Daheim & Uertz 2008; Rohrbeck *et al.* 2007; Van der Laan 2015). The understandings can shape actions to reduce uncertainty as well as influence the achievement of organisational goals, much like the ISO risk management principles.

Hines, (2002, p339) submits that,

“...being competent in innovation and foresight will come to be seen as perhaps the most important source of competitive advantage for organisations

in tomorrow's knowledge economy. This entails decision making with the future in mind.”

Contemporary views of foresight have been developed by some organisations to ensure safety from economic turmoil, using a predictive compliance-based foresight practice. Leading contemporary strategy researchers (Burgelman 2015; Daheim & Uerz 2008; Mintzberg 2007; Vaara & Durand 2012; Van der Laan 2008; Van der Laan & Yap 2016; Vennemann & Darkow 2010; von der Gracht), and others, noticed failings in the existing rational economic models and frameworks pertaining to strategy. Further, Van der Laan (2008) argues that not understanding the critical value of thinking into the future is to the disadvantage of organisations.

Foresight adds another dimension of thinking to the consideration of risk management practice for example, highlighting how understanding future possibilities can shape organisational direction (Burgelman 2015; Martin 2001; Rohrbeck *et al.* 2007) and is inextricably linked to strategy and risk management.

Sarpong *et al.* (2013) explain that, importantly, strategic foresight sits within the social practice of an organisation and experiences on-going transformations. Dostal *et al.*, (cited in Van der Laan, 2008) agree that foresight practice shows a new dimension of intention which represents a divergence from the regulated dimension of traditional practice. Strategic foresight is crucial to organisational success in rapidly changing environments as it includes an assessment of risk while charting the ways in which the future may evolve.

2.10.7 Establishing strategic foresight

There are many views on how strategic foresight understandings unfold, Tsoukas & Shepherd, (2004, p9) suggest that,

“Foresight marks the ability to see through the apparent confusion, to spot developments before they become trends, to see patterns before they fully emerge, and to grasp the relevant features of social currents that are likely to shape the direction of future events.”

In the first instance, developing foresight practice includes analyzing the entire organisation. The analysis must be comprehensive, engaging with existing systems, and identifying influences in the pursuit of relevant and rich industry knowledge. Value opportunities emerge from this new knowledge to support a new level of clarity in

decision making. In developing longer term possibilities, levels of uncertainty can increase and potentially discourage working too far ahead of reality. However, with the intense speed of environment changes, the complexity compresses the time available to not only discover an issue but to analyze and make appropriate decisions.

Through a strategic foresight lens, and strategic thinking application, an increased timeframe is generated. This then facilitates an opportunity to increase knowledge gathering and decision making on the basis that early warnings, long-term thinking and increased analysis provide reassurance to executives.

An organisation engaging in foresight and strategic thinking practice will develop an understanding of organisational possibilities (Burgelman, 2015; Daheim & Uerz 2008; Rohrbeck *et al.* 2007; Van der Laan 2016). These business occurrences can shape actions to manage uncertainty and influence the achievement of strategic goals, (Day and Schoemaker, 2004; Smith *et al.*, 2013). Further, foresight adds new dimension to the consideration of risk management practice. Executives can apply strategic thinking to develop insight into how organisational decisions can be shaped, (Burgelman 2015; Martin 2001; Rohrbeck *et al.* 2007; Schroeder, 2014).

Strategic foresight has emerged as a necessary discipline placed alongside strategic thinking to ensure a robust business environment. Foresight enhances strategic thinking by utilizing analytical thinking, analysis of options and creative practice, represents a valuable combination of cognitive inputs to drive achievement of a desired strategic position. This strategic position is strengthened through an enriched range of possibilities developed with foresight (Andersen & Andersen, 2012). Thus, foresight and strategic thinking have become significant drivers for addressing future business actions including the assessment of risk.

The practice of foresight is becoming recognized by some business leaders as an important part of the business environment, as it encompasses specific contextual, processual and methodological challenges (Daheim 2008; Horton 2007; Mendoca 2003). As suggested by Liedtka (2008) strategy is about change, with foresight, which enables intelligence gathering across the organisation, to be used in exploring possibilities for the future. Kahneman *et al.*, (1986) add that, as well as investigating the future, there should also be reference from the past as a reminder of previous thinking

and practice. What is referred to as a ‘time-travel’ perspective by Tsoukas & Shepherd (2004b) summarizes this new business environment.

Well-engineered foresight can enable a clear business view of the future, restrict emphasis on the past, validate reflections of the present, scrutinize internal and external environments, adopt measured views of the future, and be attentive to changes and social implications (Burgelman 2015; Rohrbeck & Schwartz 2007; Tsoukas & Shepherd 2004b; Von der Graacht et al. 2010). That said, Van der Laan & Yap (2016) suggest that foresight as an approach struggles to become relevant in today’s marketplace, primarily due to the continued compliance focus on risk management practice. A lack of foresight competence is noted to limit strategic thinking and is a form of bounded rationality. Conversely, greater foresight competence is asserted to be positively related to greater strategic thinking ability.

Strategic foresight adds another dimension in examining this area where future changes can shape organisational direction. As such, it can be seen as an integral part of strategic planning, supporting innovation. Conversely, Daheim and Uerz, (2008) suggest that strategic foresight struggles with challenges to become relevant and used in today’s organisations. The research shows that there is still only a tentative acceptance of a strategic view of risk management practice however many researchers are striving to propose strategic understandings in risk practice.

2.10.8 Strategic thinking

Porter (2008, 2015) emphasizes that achieving effective strategic thinking is the single most difficult challenge facing executives. He describes strategic thinking as typified by uncertainty and volatility. From the 1990s to the present, this very environment described by Porter (2008, 2015) is only now becoming relevant, at its core an environment where the notion of strategy is playing a new and critical role in management thinking. Hamel, (2009) proposes that strategic thinking is seen as both analytical and creative in terms of its cognitions.

In very early strategic thinking literature Slaughter (1997) outlined the importance of a relationship between strategy, foresight and decision making, which he suggested is important in enabling innovation. Kupers et al. (2012) building on this point reminded us that strategic thinking occurs at all levels of an organisation, much like a shared occurrence, with the task being to identify relevant knowledge and use it creatively. In

a succinct summary, Mintzberg (2008) described strategic thinking as a synthesis involving intuition and creativity in an individual's understandings when related to strategy and necessarily including properties attuned to considerations of risk.

Strategic thinking precedes and is reflected in strategic decisions; it initiates decision making; filters down to strategic planning and operational practices; is informed by foresight in a synthesis involving intuition and creativity of both individual and group cognitions; which, in turn, depend on the ability to envision creatively possible futures, Casadesus-Masanell & Ricart, (2010).

There are two perspectives that typify strategic thinking, generative and rational, each having a distinct function (Kotter 2007; Mintzberg 2004; Montgomery 2008). Generative strategic thinking is characterized by divergent, creative, and intuitive activity. The rational perspective is characterized by analysis through systematic processes such as the well-known SWOT analysis and other analysis models, (O'Shannassy 2006; Porter 2015). The use of both perspectives have been championed by multiple researchers, arguing that depending on the organisation type and context, the use of two perspectives can, in fact, act as a support mechanism for each other (Liedtka 2008; O'Shannassy, 2003; Rohrbeck & Schwartz 2007; Schroeder, 2014; Van der Laan & Yap, 2016).

2.10.9 Creativity and strategic thinking

The importance of creativity is highlighted in strategic thinking discourse as related to certain characteristics or dimensions including 'thinking in time', Liedtka (2008). Therefore, not only is foresight linked to strategic thinking by illustrating possible decision options of how the future may evolve, but both share the important ability to be creative and generative of ideas.

Elahi (2013) suggested that there was a recent change in perspectives of what risk is and where it is placed within the organisation. Now, in contrast to risk being seen as a negative process, there is an emerging view that risk management can promote creativity and add value to an organisation's strategy. Elahi, (2013) argues that risk management has long been situated within the audit function with compliance-based applications driving a linear view of risk practice despite being fundamentally part of considering how the future may unfold and thus informing strategy, (Rohrbeck & Schwartz 2007; Yang et al, 2018).

2.10.10 Strategic planning

The literature revealed that executives were hesitant to encompass strategic planning, citing lack of interest, mistrust, or their own comfort as a reason for continuing with their current business practice. Attempts at strategic planning, in many cases, reveal little strategy or planning, often becoming a wish list rather than a strategic vision. Within organisations, middle managers are often tasked to brief and even create strategic plans for their executive creating an organisational unease. Such practice, buoyed by general lack of interest and diminished appetite for change, acts as a barrier to embracing a strategic future (Rohrbeck et al. 2015; Yang et al, 2018).

The application of strategic planning practice can enable the business to promote a new understanding of culture and social environments and the impact on planning. In accepting a new organisational platform to withstand and succeed in this current environment, change manifests itself. While contemporary strategic thinking and planning is undergoing a slow transformation, there is a danger that, if strategic planning is embedded in executive processes, it may struggle to acquire space to adapt to outside influences and practice, (Carter et al. 2008; Rohrbeck et al. 2015; Smith 2004; Whittington 2003).

The development of strategic planning includes a shift from an internal focus, goals and roles, to an emphasis on external relationships, competitive environments, industry structures and associated complexities (Porter 2015).

2.10.11 Strategic Risk Management

▪ Background

The compliance-based risk models of the 1980/90s failed to detect the financial failures and chaotic future environment of its time. An entrenched reliance on these models, when combined with general management complacency, has allowed risk management approaches to continue to facilitate inert institutional thinking and practice. The current complex global environment, with increased potential for unplanned events, calls not only for a revisiting of how risk is managed, but importantly an urgency for executives to develop a strategic risk culture across organisations.

An emergence of views supporting a broader strategic management approach, embracing a more agile, open system of risk management practice is slowly gathering acceptance with organisations. Many researchers question current risk management

practices having rigid management focus on compliance and accountability, therefore restraining business opportunity, (Carter, et al. 2008; Daheim & Uerz, 2008; Elahi 2013; Rohrbeck et al. 2015; Schiller & Prpich 2013; Taylor-Gooby & Zinn, 2006; Van der Laan and Yap 2016; Von der Gracht et al 2010, Yang et al 2018). These authors concur that there seems to be little leadership will, challenging existing risk practice choosing to continue past practice in preference to working towards new strategic possibilities.

Strategic risk management practice is defined as a process which is enabled through a strategic interrogation of business practice in order to provide identification of both risk and opportunity (Drew et al. 2006; Gibney et al. 2009; Rohrbeck et al. 2015; Schroeder, 2014; Yang et al, 2018). Compliance focused risk management models, such as the ERM framework do not encourage a strategic risk management environment. A failing of risk management practice can be seen as a product of its fragmentation within organisations. Risk management is a strategic imperative with reliance on individual and group insights. The section on Risk Perception in this Literature Review generally discussed this imperative and its importance in risk management understandings. A view from current researchers is that risk management is never the product of excessive and repeated completion of a compliance-based risk paraphernalia such as tables, heat maps, and repeated reviews of the status quo.

Within an exploration of emerging risk management thinking in the nexus between an audit/compliance focused risk management practice and a foresight/strategic risk management practice approach, a contemporary approach is emerging. Specifically, addressing this challenge through an exploration of the ISO and its ability to encourage and facilitate a strategic approach to risk management practice, and the identification of influencers which impact risk management practice, was a focus of this study. The disparate views of where strategic risk management reside on a risk management continuum will form a substantial part of this investigation.

Much contemporary literature argues the need for a shift from a narrow, audit and compliance focused risk management practice to a comprehensive, whole of organisation creative practice, closely associated with the notion of strategic risk management (Rohrbeck et al. 2015). Historically, business has based its risk practice on the risk cycle of analysis, controls, and exhaustive risk identification, often illogically standing as testament to a sound risk operation in many organisations.

2.10.12 Emerging risk practice

As mentioned previously organisations are becoming increasingly complex, driving demand for increased industry knowledge and innovation. This process can, in turn, impact risk management innovation and ingenuity. Kupers et al. (2012) indicated that, with a growing global business complexity, a new paradigm linking leadership, risk management practice and strategy could strengthen opportunities for organisations. Further, Kupers et al (2012) suggested that, in developing a dynamic approach to strategic risk management, interrogation of the levels of control assumed by management should take place. This practice can have the effect of building knowledge management and developing additional strategic practices leading to the emergence of creative risk paradigm for the organisation.

Much research confirms an emerging view that strategic risk management can promote creativity and add value to an organisation, (Botterill & Mazur 2004; Elahi 2013; Rohrbeck et al. 2015; Van der Laan & Yap 2016; Yang et al, 2018). Supporting this view, Power (2015) proposed that the management of risk, in shifting from an analytic and internal focus to embracing organisational inventiveness, is a goal to be attempted by current leaders. An emphasis on the financial health of an organisation, which has historically encouraged a view that reliance on internal compliance must, by definition, deliver better more productive analyses in planning and risk management practice, was challenged in this study.

Change makes for an uncertain business environment and changing global systems accelerate uncertainty, which in turn is consistently linked to risk perception. The concept that changes no longer moves in a straight and predictable line and in a way that has not been experienced before is refocusing organisational understandings of risk. A changing and complex business environment makes effective risk prediction difficult, however, in enabling a strategic risk environment, an organisation can accept uncertainty, work within its parameters, which in turn, will encourage the growth of an innovation culture.

Despite this, even more has been invested preparing bounded and analytical risk frameworks which emphasize avoidance of risk. These frameworks ensure all possible events are captured resulting in outcomes which have the intention of assuring executives. However, the task of encouraging foresight and strategic thinking processes emphasizing the role of executives focusing on knowledge understandings including

‘whole of organisation’ focus highlighting uncertainty, encouraging innovation and developing an innovative ‘bottom line’ is a road less travelled by the executive teams. A global reality exists where many risks cannot be anticipated. In fact, the most destructive risks are often unexpected and difficult to identify. At the core of strategic risk management practice is a growing research environment examining risk with a new perception of the future.

Despite the realisation that complexity, change, uncertainty and disruption typify today’s operational environments, fundamental connections between thinking about the future and its importance to strategy are still not evident in today’s management frameworks declares Von der Graacht et al (2010). Slaughter (1997) warned that, for concepts and methodologies to deliver insights of the highest quality, strategic foresight must not be limited to annual planning exercises. Strategy scholars suggest foresight should be perceived as a process where new insights emerge and capabilities are built in an ongoing fashion, rather than a tool for prediction (Mendoca et al. 2009; Wiek, Binder & Scholz, 2006). The same can be said in terms of a strategic risk management approach.

Van der Laan & Yap (2016) advised that using a foresight approach does not predict what is to come but rather expands the scope of possibility. Initially, the current environment must be investigated to understand current practice and the likelihood of its impact on future planning is managed. An important acknowledgment that foresight does not seek to predict the future but rather seeks to create different images of what the future may become, what is most likely given the current reality, and how an entity's idealised design can fit into images of a preferred future, is a succinct summary of how foresight can be linked to strategic risk.

2.10.13 Strategic risk and decision-making synergy

Key characteristics of strategic thinking, such as intelligent opportunism in decision making, are essentially overlooked by many executives, especially in the context of their organisational risk aversion. Strategic thinking is most closely linked to the way decision makers think and behave, (Tavakoli & Lawton, 2005; Rohrbeck et al. 2015). The literature also reflects evidence that leaders’ complex thinking, and personal and professional values influence decision characteristics in predicting strategic decision making (Becker 2002; Berger et al., 2008).

Strategic risk management practice is defined as a process which is enabled through a strategic interrogation of business practice in order to provide identification of both risk and opportunity (Clarke & Varma 1999; Drew et al. 2006; Gibney et al. 2009; Rohrbeck et al. 2015). Risk management is a strategic imperative with reliance on individual and group insights. a comprehensive, whole of organisation creative practice, associated with the notion of strategic risk management (Rohrbeck et al. 2015).

2.10.14 Decision making

Clearly, strategic thinking is linked to the way decision makers think and behave and the influences on decision making are varied within an organisation. The literature also reflects evidence that leaders' complex thinking, personal, and professional values influence decision characteristics in predicting strategy (Becker 2002; Berger, 2008). There is much evidence that historically businesses have intuitively placed great emphasis on analytics to provide evidence in support of decision choices. Key characteristics of strategic thinking, such as intelligent opportunism in decision making are essentially overlooked by executives.

Contemporary understandings of resulting ineffectual outcomes illustrated through many company failures, reinforces the view that strategic thinking is an essential component in determining new strategic directions, particularly within this environmental chaos. A poignant comment by Liedtka (2008) suggests that, while strategic thinking has a critical role, practitioners should be warned that it continues to be used as a term with little meaning within a traditional management approach.

2.10.15 Social constructs

An important dimension of strategic thinking reveals that social constructs can impact decision making practice. Levels of seniority, social attachments, team, and individual characteristics are impacted to an extent within the social order of an organisation. There is a significance for leaders to understand how beliefs, values and practices within a workplace are developed. Also, to understand how organisational thinking can be influenced, for example, through ineffective analysis or reluctance to challenge decisions put forward. Additionally this 'shared thinking' can lead to risky behaviour and oversight within the planning function, including lack of critical reflection by management (Khurana 2007; Liedtka 2008; Mintzberg 2007; Vaara & Durand 2012).

Individually or collectively, decisions impact an organisation's every outcome. It is imperative that an understanding of broader social issues and their impact on decision making practice are included in strategy-making (Whittington 2003; Tsoukas, 2010; Vaara and Whittington 2012).

In conclusion, it can be said that strategic decision making is much more than merely allowing only majority views to enable judgements. Essentially a combination of strong and inventive leadership; awareness of social aspects of an organisation; noting ensuing dominant logic; uncovering aspects of decision making as a new experience; allowing a focus on innovation and creativity; and, the critical importance of knowledge management, are all within a leader's domain.

2.11 SUMMARY AND IMPLICATIONS

The aim of the Literature Review as it related to the current study was to identify and explore the concepts associated with uncertainty and risk management practice. Identifying, organizing, and distilling the concepts, theories, and empirical support in the literature help identify limitations and points to specific research questions (Rowley & Slack 2004). The current research commenced with a comprehensive review of the literature focused on uncertainty, strategy, and risk management, in the first instance. Consistent with Creswell (2014), a priority for selecting relevant material began with a broad synthesis of existing literature followed by more targeted thematic analysis. The literature pertaining to uncertainty and risk management was broad and illustrated the historical growth and changing focus by business.

There was no reference in the literature to uncertainty or risk management practice in Australasian universities other than the suggestion of the ISO as an Australian Risk Standard. This reveals the gap in the literature as to what risk management practice is prevalent in these important institutions. Furthermore, this literature framework was informed by contemporary research in allied areas of interest such as risk perception, creativity, foresight, leadership, strategy, and decision making as they relate to risk. The Literature Review presented an opportunity to analyze and understand current research and use the knowledge to develop a feasible research project.

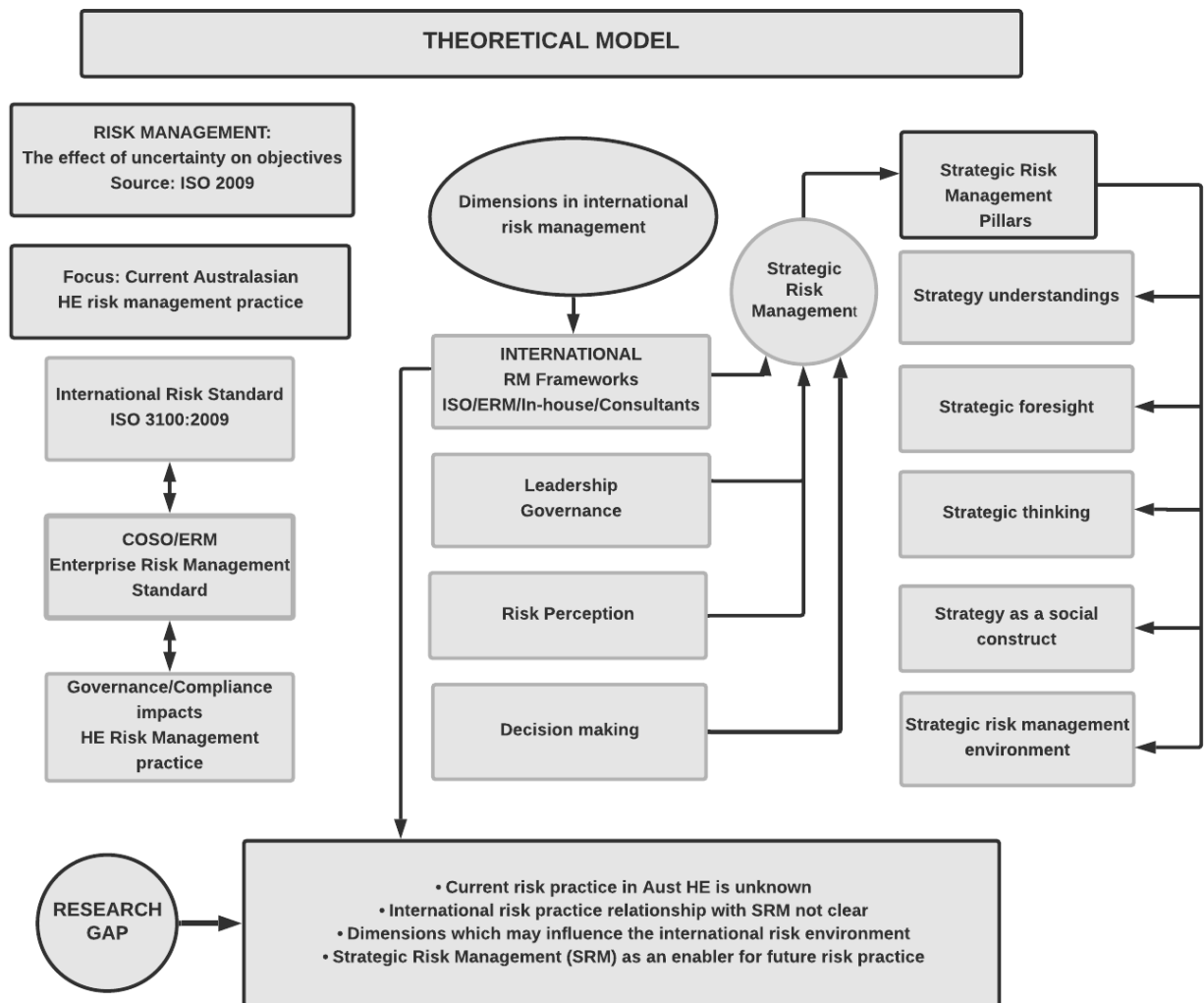
The outcome of this analysis through a review of the literature based on the mind map (Figure 1) determined themes and concepts to provide a framework for the investigation to underpin the Delphi study. The concepts were grouped according to the

objectives of this research, the risk framework, social constructs influencing uncertainty and risk management practice, executive and other relevant impacts which have emerged from the Literature Review.

A theoretical framework (Figure 7) identifies a perspective associated with the research problem of risk management practice in Australasian universities. It sought to present current published knowledge as derived from the extant literature while identifying gaps in this knowledge that will inform the research questions and the next stage of the study.

2.11.1 Theoretical framework

Figure 7 Theoretical Framework



Source: developed for this research

Creswell (2014) suggests that a theory is a set of interconnected constructs, definitions and propositions that presents a systematic view of experiences by specifying relationships with the purpose of explaining phenomena. The propositions underpinning this study question the ability of current traditional risk management approaches to effectively manage risk. Furthermore, Figure 7 is informed by many principles contained in risk theories, such as the impacts of leadership, decision theory, risk perception and more, which may be of value in advancing or redesigning viewpoints on uncertainty and risk practice in higher education. Based on Figure 8, the identified research gaps and study propositions, the conceptual framework guiding the study was developed.

2.11.2 Research questions - preamble

Within the Literature Review there was clear demonstration that uncertainty and risk management function in multidisciplinary context but are predominately studied and managed in a singular and often limited way. Recent literature encourages both an academic and applied shift in support of a refocus on a strategic risk management approach. The research gap is illustrated in that we do not know or understand how risk management is practiced in the context of governance/compliance, risk frameworks, executive/leadership, risk perception, decision making and strategy in Australasian universities where the researcher has practiced and is located as an insider researcher.

There was, as mentioned previously, limited contribution to the risk management field from an Australasian perspective. There was also no clear valid and reliable indication of whether the ISO or other risk management frameworks comprehensively addressed the multifactorial nature of risk practice in Australasian universities. The research into strategic risk management practice however was plentiful and this study aims to provide a strategic risk practice perspective compared to dominant compliance-based risk management practice in Australasian universities.

The Literature Review became a significant resource for the composition of the research study along with expert risk management evidence, scientific and other risk data, and the insider researcher's international expertise and experiences. The evidence contributed to understandings of historic and contemporary research with which to inform the researcher and give direction to the research. As the Literature Review and other evidence increased, the researcher noted that topics were evolving which acted as indicators for the construction of the initial round of Delphi questions and further to confirm the on-going emergence of topics across the questions and feedback.

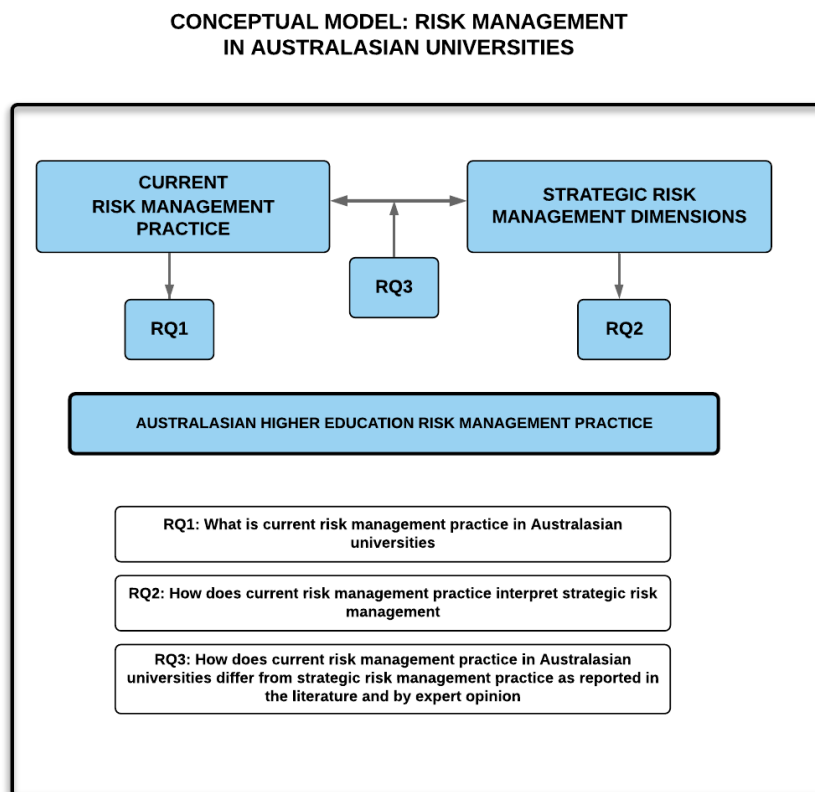
Of further importance to this study and supported by the substantial body of research was the identification of strategic risk management dimensions. Areas such as foresight, horizon scanning, rapid change, hybrid risk framework, risk perception, decision making, broad consultation, and risk perception/social constructs were significant in this examination of uncertainty and risk management practice.

The study plans to explore the views of participants from both research groups, the Delphi panel participants, and the Australasian universities' risk managers participating in the survey.

2.11.3 Conceptual model: Risk management in Australasian universities

The conceptual model (Figure 8) illustrates the nexus between current risk practice and strategic risk management. The study has examined how universities work, whether the research gap is apparent to the risk practitioners and whether a strategic risk management posture would deliver a positive outcome for Australasian universities.

Figure 8 Risk Management in Australasian Universities



Source: developed for this research

2.11.4 Research questions

The research questions were developed to enable investigation into the risk standard abilities; the impact of dimensions on risk practice and the possibility of accepting strategic risk practice as a sound risk framework for higher education in Australasian universities.

- a) What is current risk management practice in Australasian universities
- b) How does current risk management practice interpret strategic risk management

c) How does current risk management in Australasian universities differ from a Strategic Risk Management (SRM) approach as reported in the literature and through expert opinion

2.11.5 Conclusion

A goal of this study was to explore and describe uncertainty and risk management practice in Australasian universities based on a pragmatism paradigm. During the development of this research the ISO was reviewed and updated by the International Organisation for Standardization in late 2018. The researcher had begun investigation well before this period by which time the research questions, the Literature Review and research approach were already embedded in the study. As such the research investigation was based on the 2009 ISO Standard across this study.

Chapter 3 describes how this work-based study sought to answer the research questions through the development of an appropriate and rigorous research methodology.

Chapter 3: Research Design & Methodology

3.1 RESEARCH DESIGN

This exploratory study was designed to identify the practice of risk managers in Australasian universities and consider to what extent it reflected a strategic risk management approach. The research approach in the first instance was designed to elicit responses by challenging dominant perspectives of risk management practice based on the study's propositions.

The overall intent of the study was to examine the frameworks and dimensions of risk management as practiced in Australasian higher education through a strategic risk lens. This included reviewing uncertainty and risk management literature, influences of the dimensions, and current risk practice. The researcher refined the exploration by examining the significance and importance of risk opportunities, threats, creative practice, foresight, and strategic thinking linked to strategic risk management practice.

This Chapter is presented in the following sequence.

- a) Introduction
- b) Overview of proposed research
- c) Research context
- d) Theoretical framework
- e) Research paradigm
- f) Research approach, strategies associated with mixed methodology, qualitative research and quantitative research.

3.1.1 Introduction

In the Literature Review, (Chapter Two), foundational knowledge on uncertainty and risk management enabled the development of a conceptual research framework and research logic for this study. This chapter defines the research design by providing a description of the stages of enquiry and systematic research process to be utilised. Further the research questions are stated, operational frameworks developed, and the data collection and analysis processes outlined for all phases of the research.

The Literature Review confirmed a research gap indicating an absence of peer reviewed research investigating the management of uncertainty and risk within Australasian higher education environments. Certainly, research related to university risk management as practised is rare. Although based on a narrow participant base of Australasian university risk managers, the researcher decided that the findings, while applying to universities in this study, may be useful for risk management practice investigation in general, and to inform future research.

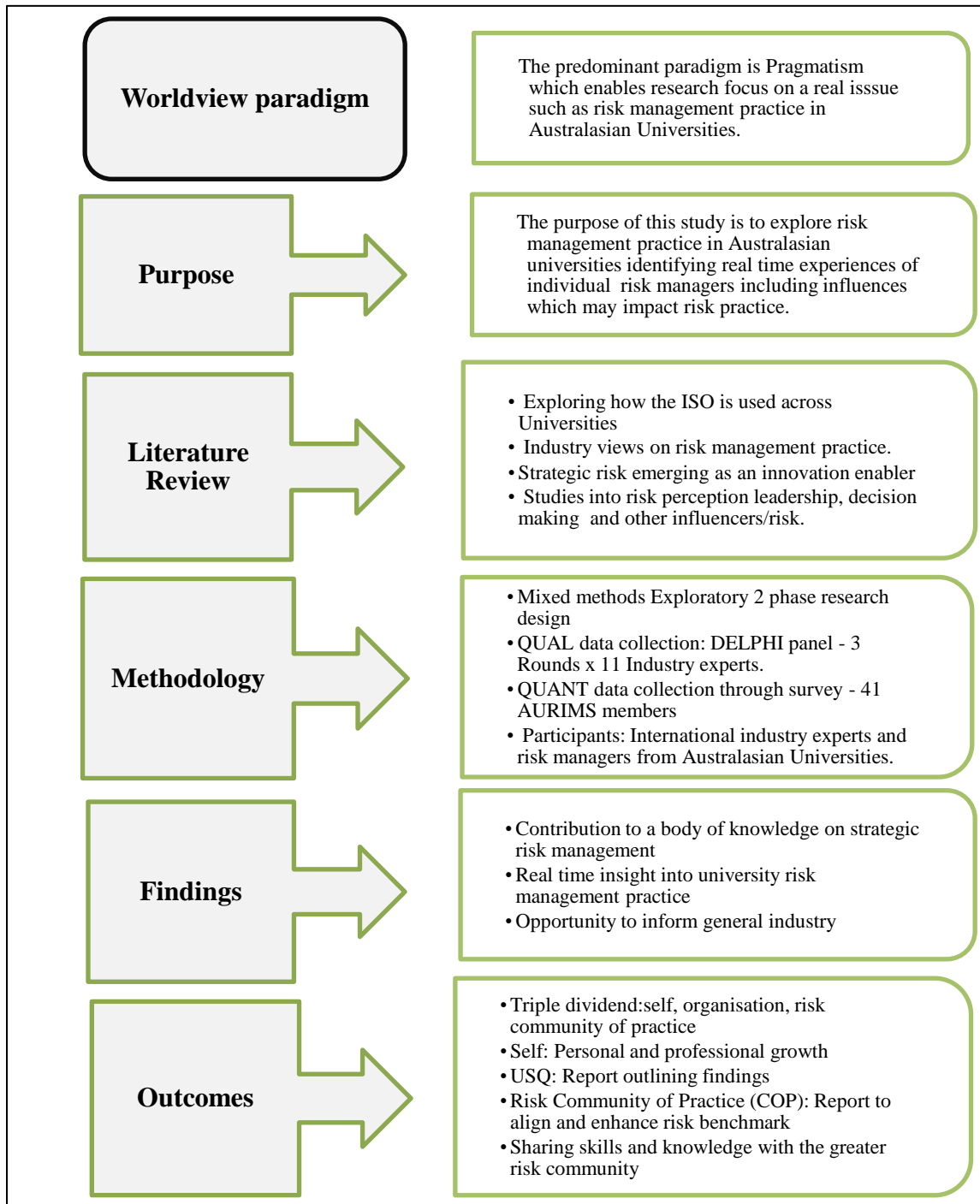
3.1.2 Overview of Proposed Research

An overview is critical to ensure essential elements are planned in the early phase of the study acting as a framework guiding the study.

Figure 9 illustrates the overview of the research plan, developed by the researcher. The overview states the structure of the overall study. Commencing with the pragmatism paradigm to focus on real life practice issues, that related to uncertainty and risk practice in Australasian universities. The overview highlights the purpose of the study, the Literature Review, methodology, findings, and outcomes which sit under a pragmatic enabler. Each part of this overview contains the essential and critical components for an effective research project.

3.1.3 Overview of research

Figure 9 Overview of Research



Source: developed for this research

3.1.4 Research context

This research study into uncertainty and risk management was limited to a university setting, specifically within the Australasian Universities Risk and Insurance Management Society (AURIMS, 1998) which was established to provide a Community of Practice (COP) for Australasian university risk managers.

The study is exploratory as prior research of the practice of risk management in universities is not available in general, and specifically not in the Australasian higher education context. The population of interest is risk management practitioners in Australasian universities that are members of AURIMS. The study also included a panel of risk practitioners who informed the development of a strategic risk management perspective against which current practice could be benchmarked. The results of the study cannot be generalized as the sample numbers are too small to draw firm conclusions. It is suggested that the AURIMS membership is a representative sample of this unique population. As the study is exploratory, it is further suggested that this exploratory, mixed methodology study provides a basis upon which to conduct future research.

3.1.5 Theoretical framework

Creswell (2014) suggests that a theory is a set of interconnected constructs, definitions and propositions that presents a systematic view of the phenomenon by specifying relationships between concepts. The propositions underpinning this study question the ability of current traditional risk management practice in Australasian universities to effectively manage risk. The framework presented in section 2.11.1 (Figure 7) described the theoretical underpinnings of the study.

Furthermore, this framework is informed by dimensions contained in risk theories, such as the impacts of leadership, decision theory, risk perception and more, which may be of value in advancing or redesigning viewpoints on uncertainty and risk practice in higher education.

3.1.6 Research Paradigm

Essential to the research process was the choice of a research paradigm, the fundamental worldview, which establishes the direction of the study. Mackenzie and Knipe (2006) argue that establishing a paradigm is critical as the first step in beginning a research study. A paradigm ensures the methodology, literature and research design are well placed within the overall research aims. Similarly, Creswell (2014) encourages

researchers to make explicit the worldview that is the epistemology, ontology, and methodology proposed by any study.

Selecting a research approach plays to a choice between the research problem, the researcher's experience, and the audience of the study. A pragmatism paradigm depends on the research focus to be a real issue, and in this case, an issue concerning uncertainty and risk management practice in universities. Essentially a pragmatism paradigm considers actions, situations, and consequences and employs pluralistic methods which can offer best solutions and application (Creswell 2014). Further, pragmatists are not committed to one research paradigm, system, or reality (Mackenzie & Knipe 2006). Instead, pragmatists favour methods that provide the most benefit and insight.

The pragmatic paradigm was chosen for this current research as it does not have a focus on antecedent conditions and 'is not committed to any one system of philosophy or reality' (Creswell 2009, p. 4). Instead, it focuses on knowledge claims being a result of action orientation and consequences crafted to find solutions for real world problems. The pragmatic paradigm underpins the current research as the research aims to provide solutions to real-world problems. Fundamentally, the pragmatic paradigm suggests a mixed methods approach. In choosing this 'worldview' there was an acceptance of the use of mixed methods design. In fact, Creswell (2014) promotes mixed method design and encourages researchers to draw liberally from both qualitative and quantitative assumptions.

This strategy of enquiry suggests that data collection should match the most efficient way to best understand the research problem. In this case, the researcher was managing a problem-centred view of uncertainty and risk management in a higher education environment which demanded both depth of understanding, and breadth of application offered by both qualitative and quantitative research. Additionally, for pragmatists, complementary and contradictory viewpoints are of importance to allow an interrogation of the data through exploration of the participants' viewpoints. Such an approach was central to this study.

3.1.7 Research approach

Creswell (2011) identifies the importance of the research approach in determining the most relevant procedure for the collection, analysis, and interpretation of data. This study will use a sequential exploratory mixed methods design conducted with two phases of data collection. Within its pragmatic framework, mixed methods approaches are considered appropriate. Creswell (2014) cautions that in choosing a mixed method

approach, the reasons why quantitative and qualitative data are being mixed remains important.

In an exploratory study this suggests that the depth of understanding gained from qualitative methods can be extrapolated to a broader representation of the population using quantitative methods.

Through the Delphi panel’s qualitative interrogation of the questions derived from the three rounds of discussion and questions, complimentary and/or conflicting response outcomes arose which provided rich data with which to furnish questions for the survey phase. Further, this research approach related to the purpose of the study i.e., provide evidence-based findings related to the risk management practice in Australasian universities. This research approach met its intent.

In exploratory studies, Creswell (2009) describes how the qualitative first phase should be conducted. This approach was adopted for the study and is illustrated in Table 3 below.

3.1.8 The Inductive Logic of Research in a Qualitative Study

Table 3: The Inductive Logic of Research in a Qualitative Study

Researcher poses generalisations or theories from past experiences and literature
Researcher looks for broad patterns, generalisations, or theories from themes or categories
Researcher analyses data to form themes or categories
Researcher asks open-ended questions of participants or records filed notes
Researcher gathers information (i.e., interviews, observations)

Source: Creswell (2009, p63)

Research approaches using qualitative, quantitative, and mixed methodology are succinctly described in the following Table 3. It shows the typical characteristics of each type of question.

With qualitative approaches the researcher tends to focus on open-ended questions. For quantitative approaches, the researcher identifies pre-determined, closed-ended questions in the study, and for a mixed methodology, the researcher collects both types of data, develops a rationale for mixing and integrates the data at different stages of the inquiry.

Table 4: Qualitative, Quantitative and Mixed Methods Approaches

Tend to or typically	Qualitative Approaches	Quantitative Approaches	Mixed methods Approaches
<ul style="list-style-type: none"> • Use these philosophical assumptions • Employ these strategies of inquiry 	<ul style="list-style-type: none"> • Constructivist/transformative knowledge claims • Phenomenology, grounded theory, ethnography, case study and narrative 	<ul style="list-style-type: none"> • Postpositivist knowledge claims • Surveys and experiments 	<ul style="list-style-type: none"> • Pragmatic knowledge claims • Sequential, concurrent, and transformative
<ul style="list-style-type: none"> • Employ these methods 	<ul style="list-style-type: none"> • Open-ended questions, emerging approaches, text or image data 	<ul style="list-style-type: none"> • Closed-ended questions, predetermined approaches, numeric data 	<ul style="list-style-type: none"> • Both open and closed-ended questions, both emerging and predetermined approaches, and both quantitative and qualitative data and analysis
<ul style="list-style-type: none"> • Use these practices of research as the researcher 	<ul style="list-style-type: none"> • Positions him- or herself • Collects participant meanings • Focuses on a single concept or phenomenon • Brings personal values into the study • Studies the context or setting of participants • Validates the accuracy of findings • Makes interpretations of the data • Creates an agenda for change or reform • Collaborates with the participants 	<ul style="list-style-type: none"> • Tests or verifies theories • Identifies variables to study • Related variables in questions • Uses standards of validity and reliability • Observes and measures information numerically • Uses unbiased approaches • Employs statistical procedures 	<ul style="list-style-type: none"> • Collects both quantitative and qualitative data • Develops a rationale for mixing • Integrates the data at different stages of inquiry • Presents visual pictures of the procedures in the study • Employs the practices of both qualitative and quantitative research

Source: (Creswell 2009 p16)

3.1.9 Strategies associated with mixed methodology

Consistent with the philosophies of Creswell (2014), mixed methods research has gained in popularity by contributing to the depth of meaning as well as providing an empirical basis for further investigation associated with problem-based, mostly pragmatic research. Mixed methodology was a critical strategy in this study in that the value of a mixed methodology study was that it contributed a unique insight into the research problem through a range of intuitive and counter intuitive challenges identified in the Delphi method, which may be overlooked in a more traditional investigation.

The strategy for this study was to use a mixed methods sequential exploratory research approach in two definitive phases, one being the Delphi method to inform the second phase, the survey). Using a sequential study follows the researcher's desire to facilitate a deep examination of viewpoints related to uncertainty and risk management

from an executive/leading practice perspective in the first instance and then informing the second phase survey of Australasian university risk managers (members of AURIMS).

3.1.10 Qualitative research

Using a Delphi research approach to lead the mixed methodology process was suitable in gaining a depth of understanding and insights, illustrating, and testing new boundaries of related research. The method was seen to be flexible and suited to identifying and addressing issues where there was scant information and supports an exploratory study.

The purpose of incorporating qualitative research was to explore and describe complex occurrences of the phenomenon which aim to assist in the construction of a social reality of the associated practice issue (Creswell 2014). Qualitative research can provide depth of understanding through topic-based analyses and interpretation. In this case a broad Delphi method was chosen where industry practitioners interrogated the research questions to distil key insights for both the subsequent Delphi questions and the survey construction.

3.1.11 Quantitative research

The use of experimental or survey methods are common strategies of enquiry that rely on statistical analysis (Creswell 2014). In quantitative research, samples are selected to represent a greater population. The primary aim of quantitative research is to generally describe human behaviour across populations. In the case of this study, it relates to risk management practitioners across Australasian universities. The quantitative phase of the research was based on questions which were analysed qualitatively through the Delphi rounds in the first phase of this study.

3.2 METHODOLOGY

3.2.1 Purpose statement

The goal of this study is to explore risk management practice in Australasian universities through a strategy of enquiry aimed at identifying the experiences of individual university risk managers and influences which may affect risk management practice. As such, the study sought to contribute to professional practice knowledge of the field specifically in the pursuit of a strategic risk management approach.

One purpose of this study was to identify topics in an exploratory setting with the intent of uncovering the perceptions and understandings of both the executives/leading

practitioners in the Delphi phase and the risk managers involved with the survey. Using a Delphi methodology, industry practitioners informed the study in the first instance to identify and examine influences which affected understandings of uncertainty and risk management in the higher education sector. This study engaged with general industry practitioners within a Delphi panel. Both unanimous and conflicted viewpoints from this group were used to inform the construction of a survey with which to interrogate the AURIMS risk managers.

The survey's intention was to explore expertise in and impacts of risk management frameworks used in risk management as set out in Chapters 1 and 2 in current university risk practice. More broadly the purpose was to identify dimensions of risk management such as risk perception, leadership, decision making and strategy that are dominant in the practice of risk management in Australian higher education.

The use of risk models or frameworks are favoured by many organisations, although many risk practices are adapted within the organisation according to their context. To articulate the influences of risk management practice, the study formulated the following research objectives.

3.2.2 Research objectives

- i) Identify which risk management framework is in general practice across Australasian universities and/or articulate what current risk management practice is.
- ii) Investigate whether dimensions, risk frameworks, audit and compliance, leadership, risk perception and decision-making play a part in influencing risk management practice in Australasian universities,
- iii) Enable the examination of a strategic risk framework for future risk practice development in Australasian universities.

3.2.3 Sample size

While this study applies to a small industry sector, that being Australasian universities, much literature exists which applies to uncertainty and risk management practice in general. Specifically, the study aims to gather candid information on uncertainty and risk management structures, influences and reporting lines within universities, enabled through the qualitative approach taken within the Delphi method and interrogation through the survey. The researcher will show how or whether different risk management frameworks guide university risk managers in their risk practice and will outline options for future practice.

Within this study, the reality of such a small sample size, given the nature of the targeted participant group, was a core issue. As such, this study acknowledges the limitation that there may be some complication in validating and generalising the findings. According to Kirk (2007) small sample sizes can be justified and used to conduct correlations however, this is done at the expense of statistical power. Samples greater than $n=4$ or less than $n=10$ indicate approximations as “poor”.

Moreover, there is a general view that in contrast to quantitative research requirements, qualitative approaches tend toward smaller samples sizes that are targeted and chosen for this purpose. It was understood that although a small participant group will not support generalisation, using a mixed methods approach enables inferences to be drawn from the qualitative findings and extrapolated by the quantitative findings.

For the purposes of this study, the researcher regarded a sample size of $n = 11$ as adequate for qualitative Delphi phase. Additionally, for the quantitative survey, a sample size of $n = 41$ was an adequate representation of the AURIMS membership.

3.2.4 University risk management structures

Differing work practices and diverse risk management structures will emerge as an illustration of the many configurations for uncertainty and risk practice in universities. For example, in some universities, audit and risk functions co-exist, in others both functional areas are quite separate. Reporting also varies depending on the hierarchy, which can range from reporting directly to the Vice Chancellor, to an Audit and Risk Committee, or to middle management. It was intended that a landscape of viewpoints will emerge from the practicing risk practitioners across Australasian university campuses as a ‘rich’ picture of practice, dependent on levels of seniority, reporting structures, uncertainty and risk practice maturity, external knowledge of uncertainty and risk practice.

3.2.5 The insider researcher

The researcher was a practicing staff member of the Information Technology Division, specializing in IT risk management. The operational questions developed across many years previously from beginnings as a novice practitioner to expert across both Federal Government and Australasian university environments. As well as being a risk manager, the researcher belongs to a community of practice (COP) by way of membership of AURIMS serving in executive roles including President and Vice-President.

There are benefits associated with membership of AURIMS across this study. Initially through extensive discussions of a state-of-the-art risk situation through attendance at AURIMS conferences. The discussions included present day reality, ie., risk management frameworks and practice. The researcher had a high profile in the planning and management of three conferences, liaison with key risk industry experts as conference presenters bringing new risk thinking to the table as well as opportunities to discuss and challenge current risk values. This illustrates the practice and views of the researcher which led to the discovery of a recurring inconsistency which illuminates the occurrence of an issue worth examination.

Within a workplace research study, an understanding of the context of the researcher is critical. An insider researcher has a dual position, influenced by the organisational context and the research investigation. Not only does the researcher have a unique viewpoint of the research issue there is also a lived experience with the subject matter. In this study, the benefits of being an insider researcher allows the researcher access to the university risk manager cohort, their individual practice, the group practice, and informal discussions on risk management practice in Australasian universities.

As an insider there are implications for the researcher where there are ongoing movements across the research and participants where the researcher unknowingly breaches boundaries, particularly social and conceptual boundaries. The view is supported by Kusow (2003) who suggests that the insider/outsider distinction is far more complicated than indicated in the literature. In fact, Kusow, (2003) explains that these complications ultimately impact on notions of credible data and knowledge production.

As a study based on industry colleagues, the insider researcher finds both a connection and shared knowledge with the risk managers. This suits the study in some way but also shows the challenges of insider research. In preparation for the research, the experts as participants had little connection from a hierarchy perspective as the Delphi participants represented the executives in general organisations.

For the risk managers, with whom I had previous professional relationships as President and Vice president of the Australasian risk managers COP, the methodology allowed a distance from each risk manager as the questions were framed as a survey where little opportunity existed to contact me directly in the context of the survey.

3.2.6 Research outcomes

The following outcomes of the study are anticipated.

- i) To contribute to a body of knowledge in uncertainty and risk management in higher education through a comprehensive dissertation.
- ii) To contribute to further investigation of the roles and impacts risk frameworks, leadership, decision-making, and risk perception in higher education play in risk management practice as recommended for future research.
- iii) To create an opportunity for further research in strategic thinking and foresight in developing a strategic risk framework incorporating examined and results driven components.

3.3 DELPHI RESEARCH METHOD

The Delphi method was used to explore uncertainty and risk practice from a strategic perspective and reflect current research insights. This method included expert contemporary views on risk practice from outside the higher education sector which was important given the small participant numbers within Australasian universities and lack of knowledge of their risk current practices.

The research framework for the Delphi study provided further insight into the purpose of the study, the structure, the number of rounds, the participants, mode of operation, anonymity, the mode of communication, and the consistency of the procedure. Qualitative research provides a deep understanding through theme-based analyses and interpretation (Creswell 2009). In this case, an extensive Delphi method of 3 rounds was chosen for the researcher to exhaust a range of topics on current risk management practice, strategic risk management including dimensions and future risk practice.

3.3.1 Delphi background

The US Rand Company developed the 'Delphi Technique' in the 1950s as a forecasting tool in the warfare sector. The Delphi method is based on an assumption that group judgments have more validity than individual judgments. It essentially involves gathering a group of participants to discover consensus through anonymous connections with the rest of their Delphi group members. There are usually 2 or 3 rounds where the participants answer a questionnaire prepared by the researcher based on the research questions. After each round, the researcher prepares a summary of the responses based on group responses to each question or group of questions. The Delphi purpose is to discover what the group of participants agree or disagree about the questions and their responses. Following feedback, the researcher incorporates the analysis into the design of the next group of questions, noting subjects which have already gained consensus.

Importantly, the Delphi methodology does not (and was not intended to) generate significant results due to the number of participants being limited to generally 8 -15 members. The results of the Delphi study represent a synthesis of group opinions indicated by significant results, which then enabled the development of themes critical for the development of the survey questions. The value of the method rests with the ideas generated regardless of whether the ideas generated evoke consensus or not Gordon, (2009). A Delphi study recommends up to 15 expert participants as being sufficient for a Delphi study (Creswell 2009).

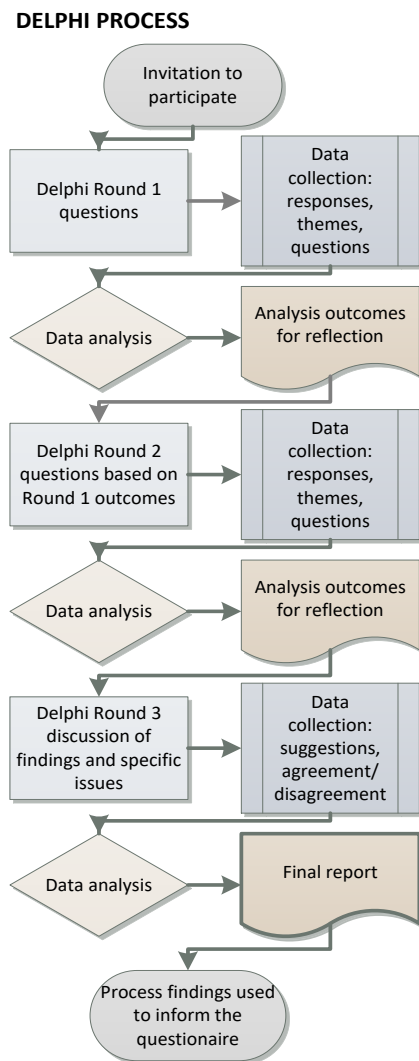
With each Round, the researcher sought to find agreement and disagreement of responses for the participants to consider. Following the completion of the Rounds when saturation of data is achieved, there will be a group response for the remaining questions which becomes the group consensus. In this exploratory sequential mixed methods design, the qualitative group consensus informed the development of the survey questions which was the second phase of this investigation.

3.3.2 Delphi characteristics

- Delphi research method is a unique qualitative method able to gain expert insights.
- A Delphi method is a simple way to gather a group of participants as the process can be performed by email with responses moderated by the researcher.
- Delphi participants can come from inside or outside the organisation.
- Delphi participants will have relevant industry knowledge to assist in decision making.
- Delphi encourages a range of unsolicited opinions, comments about other responses and the ability to revise responses anonymously.

3.3.3 Delphi process

Figure 10 Delphi Process Creswell (2014)



Source: Creswell (2014)

Creswell (2009) suggests a process diagram, Figure 10 which comprises action steps from the invitation to participate. Following each Delphi round, Creswell (2009) conveys 3 actions which are critical to the process. The data collection is the first action and data may take many forms, from question responses to video images and photographs; emerging themes; and individual insights. The data is analysed by the selected procedure with the outcomes becoming the impetus for reflection and further insights into the participants' awareness of consensus amongst the group.

3.3.4 Selecting the Delphi participants

It was important to define the term expert as the criticality of expertise and willingness to participate was crucial to the study. The term 'expert' was used to define the Delphi participants by acknowledging industry experience in general and substantial

executive roles. Raisinghani and Meade, (2008) suggest that an expert had specific knowledge of the phenomenon under examination and was entrusted to continue further interest in the issue. The researcher understood that knowledge of the subject matter being explored and application in the workplace as the criteria informing the way panel members were chosen was imperative.

The Delphi study was developed specifically to gather information and experiences from a broad frame of reference in risk management practice not specifically in higher education. By using a mix of risk management in Australasian universities and executives from both higher education and general industry, the researcher suggests that a broader perspective of understandings would be captured within the Delphi study. The expertise from higher level Delphi participants will introduce data and opinions from management perspectives essential to inform the survey. To generate a reliable expert-based contribution, the Delphi method required the use of a non-random sample (Shariff 2015).

Delphi participants were selected based on demonstrated expertise as executives from a range of industries. Some Delphi participants were drawn from university executive risk management roles, but the majority came from both the public and private sectors in a range of director and senior management roles. The researcher's experience in the risk industry pointed to extensive expertise in organisations which were not universities which would add a corporate viewpoint to the Delphi study. Delphi participants from outside higher education were determined by the researcher to provide additional input which enriched the study.

The following criteria were applied to the recruitment of panel members of the Delphi study. The selection criteria were designed to expand the parameters of the study in the first instance by including a broad cross section of high-level management expertise. Each participant should have at least the following skills and experience.

- executive knowledge of risk management, decision-making (illustrated through executive level experience) and/or
- understanding of risk management practice (illustrated by designated risk management experience and/or academic qualifications) and/or
- membership of an associated professional association and/or
- capacity and willingness to participate.

Email was chosen as the method of invitation Okoli and Pawlowski (2004). Email invitations including consent forms and participant information sheets were emailed to 19 preselected Delphi participants. The invitation was designed to explain the aim of the study, describe, and define the Delphi process, and present the requirements for participation. Of the 19 experts who were invited to participate in the study, six did not respond to the email, and 12 candidates consented to participate in the research. To attempt to enhance participation, follow-up emails were sent to those who had not responded to the initial request for participation. There were finally 11 participants who commenced the project following a small attrition due to unavailability at the beginning of Round 1 and with Round 3, 2 participants had to withdraw from the project.

3.3.5 Delphi question design

A Delphi study is an iterative process with the intent to gather expert opinion from questions designed to elicit individual comments. As this study was concerned with risk management as practice, and the nexus with strategic risk management practice, it was determined that industry expertise was essential for data collection in this phase of the study.

Specifically, the intention of the Delphi method was to engage expert stakeholders to consider current risk practice and future risk practice specifically in terms of the effectiveness of strategic risk management. These questions were informed by the findings, other expert understandings, and industry knowledge and practice which the researcher has experienced, contributed to, and been informed by.

The initial Delphi round sought to discover the extent to which the Delphi participants agreed with questions/statements emerging from the literature. As the process continued through 3 rounds, the Delphi panel was invited to probe, question, and include insights and expert opinion. The initial responses from Round 1, which was designed with a comprehensive reach across the risk management spectrum, were used to inform the subsequent rounds and finally the survey phase. This allowed for focusing the questions to refine responses as topics emerged through additional viewpoints, comments, agreements and importantly disagreements, in seeking consensus or not.

3.3.6 Delphi data collection

The choice of data collection methods was largely driven by the intent of the research i.e., a deep interrogation of risk management practice, what strategic risk management is and how it ideally functions. In this regard the data would or would not,

a) validate the literature, and,

b) allow for new themes to emerge as the Delphi rounds take place.

The Delphi method called for an extensive and detailed response from industry participants with opportunities to refine, refer to other responses or restate opinions to collect rich data with which to inform greater depth and description of the practice. The first round included mostly quantitative data of responses to scalar questions but also included qualitative data which explained the quantitative results or raised new issues for consideration. The subsequent rounds were qualitative and interrogated the results of the initial round.

Table 5: Data analysis procedures in qualitative research

Preparing the data for analysis	Organisation documents and visual data Transcribing text Preparing data for computer analysis
Exploring the data	Reading through the data Writing memos Developing a qualitative codebook
Analysing the data	Coding the data Assigning labels to codes Grouping the codes into themes Interrelating themes (or categories) or abstracting to smaller set of themes Using qualitative software programs

Source: (Creswell and Plano, 2007 p129)

Table 5 summarises data analysis practice implemented by the researcher in the qualitative phase of analysis with reference to Creswell and Plano Clark (2003, 2007).

The choice of data analysis is guided by the aim of the research, its design, and the type of data collected. Due to the iterative nature of a Delphi study, data analysis was continuous and conducted throughout the course of the research. As such, previous rounds of analysis help to inform the following rounds of the Delphi process, (Brady 2015). The qualitative data collected from the Delphi panel rounds allowed the researcher to develop topics from the panel responses using content analysis. The responses informed the construction of the survey questions as designed from the Delphi panel conclusions.

3.3.7 Data analysis presentation

The data analysis for the Delphi findings used the following techniques:

- Delphi Round 1:
 - Quantitative data – frequency analysis and correlation analysis
 - Qualitative – content analysis
- Delphi Rounds 2 & 3
 - Qualitative – content analysis
 - Quantitative -frequency analysis

In Chapter 4 data tables will be presented as summaries within the text of the chapter with the complete tables presented in the Appendices. The results tables will contain data as collected in the first round including a description of the qualitative results related to that question.

The example below shows a selected response for Round 1 Question 1a) showing a 100% agreement for the question of strong links to executive. Secondly, ‘the alignment of RM with the organisation’ and ‘the importance of business scanning’ show strong correlation scores. These scores give the researcher information to inform the Delphi study, for use in further questions/rounds, and for reference in the survey construction in the second phase of this study.

Table 6: Question presentation

	<i>Frequency</i>	<i>Correlation</i>
Q 1 a) Governance/audit Strong links to Executive/Board	100% agreement	.805** Alignment of RM with organisation .782** Business - environment scanning

Source: developed for this study

The Delphi phase of the study commenced with questions elicited from the Literature Review and other risk-based practice research and experiences. The questions were amended through the rounds as the responses revealed insights of significance or lack of relevance. This research method comprised analysis of the data through identification of emerging associations and frequencies from each round.

As the rounds progress key information is re-presented to the Delphi participants in subsequent questions to validate consensus or disagreement. Each round of feedback for the Delphi participants was detailed to both motivate and enable continuation in this

Delphi process. In each case feedback included an individual rating for each question item; a group rating; summary of the range of comments and detail of the range of opinions and explanations.

The use of the Delphi technique assisted in confirming the validity of while evidencing new practice-based insights. The participants in the Delphi panel being practice experts from a range of Australasian and international industries. Through the Delphi participants' contribution of views and understandings of risk practice there was a contribution to triangulation of the findings to be qualified later in this study.

▪ **Frequency (Quantitative)**

The Delphi Round 1 data were analysed for frequency and correlation and subjected to an on-going thematic examination. The results showed the extent to which the Delphi panel members supported or rejected questions and statements. While the researcher chose to examine some high-level agreements in the frequency outcomes, it can be said that high agreement on certain questions, whilst important, was not able to provide critical insights. In examining outliers, and/or contradictory results, however, the intention was to revisit current thinking and past responses in further rounds.

Consensus was deemed to be achieved if a) using the valid percentage at least 70 percent of panel members agreed on the direction of the response, typically acceptable in Delphi research. Brewer (2007) suggested that a 70% agreement and no polar-conflicting responses of concern was considered to have reached consensus.

▪ **Correlation (Quantitative)**

The second data analysis technique used was to perform a correlation analysis. A correlation analysis measures whether a relationship exists between two responses and how strong the relationship measures. In this study, a Pearson's correlation (also called Pearson's r) is used. Using Pearson's coefficients (Pearson's r) at confidence levels of 95% and 99%, the analysis indicates when two questions are regarded to be statistically strongly related (positively or negatively). In other words, the analysis indicates a likelihood that both questions are strongly or weakly related which is indicated when the value of correlation coefficient lies between -1 to +1 and value "0" indicates that there is no correlation in the correlation results. Further the correlation analysis identifies patterns among a set of question items and places them in a grouping which can be reproduced in the findings. The grouping of associations between the participant and the question can indicate which was of importance in this study.

▪ **Content analysis (Qualitative)**

A content analysis of qualitative data was used to determine emerging insights from responses to questions in all three Delphi rounds. This process involved the identification of concepts found in the text responses of participants. Data from the Delphi panel discussions was collected from the email responses to each question and assimilated by the researcher. Responses from the Delphi panel were anonymised before analysis.

In the analysis phase both robust agreement or disagreement provided important insights. While the agreement of responses was valuable, outliers and disagreements also provided information of importance. A summary of findings was then used to construct questions for the subsequent round. The interrogation continued until the questions and responses were exhausted at the end of the study.

With content analysis, there are several approaches, searching for patterns across the responses, and quantification of data. The data can be quantified by using codes or adding numerical representations to achieve a quantitative outcome, that is, a percentage of opinions. Because of the nature of the Delphi study, notwithstanding the total of 11 participants, a comparison of characteristics of the responses can provide insights to inform further investigation.

3.4 DELPHI ROUNDS

The Delphi panel consisted in the first instance of eleven (11) participants sourced from local and international organisations, and importantly, people who do not necessarily work within the higher education sector. Administered by the principal investigator, the Delphi panel functioned through three iterative rounds of discussion based on specific questions posited by the researcher. After each round the data was collected and analysed to stimulate and challenge further discussion rounds. At any time, viewpoints, changes in perspective and arguments against were contributed, revised, or withdrawn. For the purposes of this Delphi method, uncertainty and risk management influencers and strategic risk management practice were explored.

The Delphi panel received their questions and provided timely responses. There was a substantial volume of data collected which may indicate the industry practitioners were interested in this innovative process and the questions were pertinent to their areas of interest.

3.4.1 Delphi Round 1

For the current study, both quantitative and qualitative data analysis was employed. There was a frequency examination in the first instance followed by a correlation analysis. Given the quantity of questions three analysis types were employed to establish a foundation for the on-going study and to inform question development.

Brady (2015) discussed that whilst a content analysis was encouraged in the Delphi method, there was limited direction in the literature about how to undertake this task. Responses were collected and deductively analysed to identify patterns, compliances, single and group collaboration, and the absence of responses and were presented with frequency and correlation analysis. The analysis methodology consisted of the three types used for Round 1 as mentioned. The researcher provided feedback along with the use of further open-ended questions in the subsequent rounds.

3.4.2 Delphi Round 2

Round 2 included feedback to the Delphi participants from the initial Delphi questionnaire. Based on the responses and subsequent analysis, the researcher added more open-ended/narrative questions based on the outcomes of Round 1. The new questions were aimed to enable comment and identify controversy as well as narrowing the content to those areas the panel deemed most or least important.

3.4.3 Delphi Round 3

Based on guidance by Brady (2015), three rounds of the Delphi study were conducted as the process sufficiently enabled responses to the questions through achievement of consensus, satisfactory information exchange, and direction on the constructs suitable for inclusion in the survey. Furthermore, the use of three rounds was considered optimal to ensure results were meaningful whilst also remaining mindful of potential participant fatigue and attrition potential).

3.4.4 Delphi Completion

Following the completion of the Delphi process, the Delphi participants were provided with an overview of the Delphi findings. This process was considered important to verify the findings as well as provide the opportunity to thank participants for their participation and contribution. Using the Delphi method, and particularly with it being an on-line transaction, reduced or eliminated influences that can affect reliability and group bias. Details of the three Delphi rounds, including when emails were sent, when questionnaires were received, and any email reminders required, had been collected as part of the verification of the conduct of the Delphi study.

3.5 SURVEY RESEARCH METHOD

The purpose of a survey was to generalise findings from the Delphi study and relevant literature from a sample population so that inferences could be made about characteristics and attitudes of the population. The researcher had chosen a survey as the preferred method of data collection for the second phase of the study in accordance with the sequential mixed methods design proposed by Creswell as particularly suited to pragmatic exploratory studies.

A survey was the most efficient and effective method to reach larger populations across regions. In this study, the survey participants were members of Australasian Universities Risk and Insurance Managers' Society (AURIMS) and invited to self-select to participate. The AURIMS membership were assumed to be representative of the broader Australian risk practitioner population. The survey was sent securely to participants through the USQ survey software.

The survey tool was informed by the thematic findings from the Delphi Panel responses. The survey was constructed within the USQ survey tool parameters and stored on the USQ secure servers for surety of both data safety and compliance. When formulated, the draft survey was piloted to identify any errors or enhancements that could be made to improve its usability. This step was important to ensure validation of the measurement tool before releasing the survey to the wider research population.

3.5.1 Survey Design

The Delphi process was important in collecting, scrutinising, and consolidating the themes that emerged from Phase One of the qualitative research design. Under the pragmatic paradigm research methods are chosen to best support the question being investigated. This second part of the study employed a quantitative approach to the research and the use of a survey was a valid form of enquiry (Creswell 2009, 2014). Conducting a survey in an online format enabled an ability to collect data in an unobtrusive manner, enabled participant anonymity, and reduced the data collection time.

The survey consisted of self-selecting AURIMS members representing 48 Australasian tertiary organisations. This second participant cohort was drawn from 149 AURIMS members coming from varied risk roles and positions across Australasian universities. Participants represented positions across universities from assistant risk officers to Chief Risk Officer, which provided a unique sample of experienced-based viewpoints.

Having such a broad group of industry risk practitioners, albeit with a low participant availability, demonstrated a rich source of data describing different work practices across risk management in Australasian universities.

3.5.2 Data analysis procedures

Table 7: Data analysis procedures in quantitative research

Preparing data for analysis	Data cleaning and screening (missing values / normal distribution) Coding data by assigning numeric values
Exploring the data	Visually inspecting data Conducting a descriptive analysis Checking for trends and distributions
Analysing the data	Choosing an appropriate statistical test Analysing to answer research questions Reporting inferential tests, effect sizes, confidence intervals Using quantitative statistical software programs
Representing the data analysis	Representing results in statement of results Providing results in tables and figures

Source:(Creswell and Plano Clark, p129, 2007)

3.5.3 Survey tool

As mentioned previously, the researcher used the USQ online survey platform to administer the survey. This online survey data management system collected all data electronically and enabled the download directly as an SPSS file. Once available in SPSS the process of investigation followed the recommendations of Ong and Fadilah Puteh (2017) and Creswell (2009) beginning with a check for inconsistencies in the data and examination for any missing data and normal distribution of the data, known as cleaning and screening.

The raw survey data, 41 full responses (n=41) representing a 27% response rate as related to the AURIMS member population, was prepared for use in SPSS to enable the descriptive and correlation analyses to be actioned.

3.5.4 Survey data analysis: Frequency analysis

Descriptive statistics that summarised the demographic characteristics of the participants were extracted and collated. The purpose of this was two-fold. Firstly, it provided an ability to identify suitability for further statistical analysis as guided by Ong

and Fadilah Puteh (2017) and secondly allowed the researcher to determine which respondents met the criteria for inclusion in further analytical processes by, as an example, ensuring respondents have a relevant risk management practice designation in their organisation. The frequency analysis also served to indicate the percentage of responses that were recorded per question.

3.5.5 Survey data analysis: Correlation analysis

The correlation analysis enabled the identification of the presence or not of a relationship between the survey questions. Further, and importantly for this research given the low number of participants (n=41), the Pearson's Correlation Co-efficient was used to determine the existence or non-existence of associations within the data. The method enabled a linear measure of the data which indicated a relationship between two question items. Note, the correlation can only indicate the presence or absence of a relationship, not the nature or any causality of the relationship.

3.5.6 Conclusion

This chapter outlined how the study would answer the research questions. It presented a research design based on a pragmatism paradigm which is problem focused. The design followed a sequential exploratory mixed methods approach conducted in two phases.

Phase 1 was a qualitative/quantitative Delphi study which sought to consolidate the thoughts and recommendations of the practice Delphi participants through analysis of topics derived from the literature and emerging from the Delphi study.

Phase 2 included the administration of an on-line survey designed to collect quantitative data related to a cross sectional representation of the 41 AURIMS member population as representative of practice across the 32 Australian universities.

The results and interpretation from the analysis of the data collected in both phases of the study are presented in Chapter 4.

Chapter 4: Results and Interpretation

4.1 INTRODUCTION

This study examined the risk management experiences and practices of risk managers in Australasian universities. The mixed methods research design sought to gain a greater depth of understanding of the risk management practice phenomenon through qualitative research methods. Additionally, to provide a greater breadth of relevant findings across the population being studied through quantitative research methods.

The Delphi study validated the Literature Review outcomes and identified new insights. The survey was constructed based on the Delphi study findings and new insights that emerged from the analyses of the Delphi rounds. This chapter presents the results and interpretation from both phases of the research.

This chapter is presented in the following sequence.

Introduction

Research design implementation, including summaries of the paradigm, exploratory research design, purpose, and mixed methods approach to research

Delphi research investigation

Delphi results

Survey administration

Survey results

4.2 RESEARCH DESIGN IMPLEMENTATION

4.2.1 Research Paradigm

Creswell (2009) invited researchers to examine their philosophical worldview and be explicit as the worldview informs the choice of research design and may affect the interpretation of the results. Following that prompt a pragmatic approach was selected by the researcher for this research. Specifically, the pragmatic paradigm depends on the research focus to be a real issue, and problem focused, in this case that of risk management practice in Australasian universities.

For pragmatists, both complementary and contradictory viewpoints are of importance. A range of viewpoints expedites the interrogation of the data to resolve the issue and was central to the study. In particular, the Delphi study sought to evoke divergent viewpoints and while seeking a level of consensus from Delphi participants as an end point, it was also sensitive to alternative perspectives which the researcher sought to capture.

4.2.2 Purpose

The purpose of this study is to explore risk management practice in Australasian universities through a strategy of enquiry aimed at identifying the experiences of individual risk managers and influences which may affect risk practice. Specifically, the study seeks to explore the strategic risk management approach. As such the study sought to contribute to professional practice knowledge of the field.

4.2.3 Exploratory study

In contrast to an explanatory (explain a phenomenon) or confirmatory (validation of previous research), an exploratory study enables the discovery of new insights as well as creating an opportunity to assess phenomena in depth and from different perspectives (Ritchie and Siwale, 2011; Robson 2010). This research was designed to commence with a qualitative phase, in this case a Delphi investigation where the data depth and breadth were assured to be rich. The researcher planned the Delphi study to examine and challenge the perceptions of the Delphi participants familiar with risk management practice from an executive level. The premise being that strategic risk management is enabled by leadership foresight and strategic thinking. The study enabled the collection of a broad range of qualitative data which enabled a depth of practice insight essential for this study.

4.2.4 Mixed methodology

Cresswell et al., (2011) suggested that the basic premise of mixed methodology is that by combining quantitative and qualitative approaches, a better understanding of the research issue in a study is facilitated. A pragmatism paradigm suggests a mixed methods research design as most appropriate. This is because the study benefits from both deeply understanding the phenomena but also increases the validity and reliability of the findings through quantitative methods.

As mentioned in Chapter 3 the chosen strategy for this study was a mixed methods exploratory sequential research design. Using a sequential study illustrated the researcher's intent to facilitate a multifaceted examination of viewpoints of uncertainty and risk management practice generally and specifically the gap, if any, between compliance-based risk management practice in Australasian universities and strategic risk management.

Having consecutive phases, a Delphi study, and a survey, enabled the information generated through each phase to be interrogated and refined by the researcher before progressing to the next phase of the study. Importantly, and within the bounds of this research design, the Delphi findings informed the quantitative stage of the research, the survey.

4.3 DELPHI RESEARCH INVESTIGATION

The Delphi research technique allowed for a collaborative research method based on feedback from a panel of Delphi participants as suggested by Gordon and Pease (2010). The technique enables significant feedback from each round to be distilled by the researcher thus informing subsequent Delphi round questions. These enriched questions clarified the discussions and ultimately Round 3 reached saturation which enabled the compilation of defined group findings which was an outcome unique to the Delphi methodology in contrast to other qualitative research techniques.

The purpose of the Delphi study was to discuss, distil, challenge or support propositions put forward by the researcher based on a review of the extant literature. Within these functions the Delphi method enabled executive level practice insights that were both rich in depth of understanding while validating lines of enquiry from the literature or that emerged from the Delphi study analysis. This increased the face and internal validity of the constructs and informed the formulation of the survey instrument.

4.3.1 Summary of implementation

Establishing this research study required the development of a set of criteria necessary to recruit the Delphi participants. In the first instance the requirements for participants to qualify for this initial part of the study, the Delphi panel, were listed and distributed through the researcher's networks to be forwarded to potential industry experts. These participant requirements included the necessity to have substantial business experience at an executive level, substantial education level, availability, and interest in becoming part of an extended examination of the study topic.

Criteria for Delphi participation

- Extensive executive level experience, including strategy (10 years +)
- Masters level education or equivalent
- Extensive experience in risk management practice
- Availability to participate in the 3 rounds of Delphi questions and discussion.
- An interest in the study and willingness to be involved in an extended examination of the study.

Twelve offers to participate in the study were received and eleven Delphi participants made themselves available to commence Round 1. The study continued through Round 2 and completed Round 3 with 8 Delphi participants. The Delphi progressed through three rounds of detailed questions, carefully crafted to elicit a depth of comment from each expert. The participants probed the Delphi questions through three iterative rounds to investigate the emerging impressions, viewpoints, and disagreements for the second research phase, the survey construction. In this case, with a Delphi cohort of initially eleven Delphi participants, the analysis was completed manually.

Other insights were identified through interrogating areas which showed no consensus or unusual or singular responses. These were highlighted and fed back to the Delphi participants for their further consideration in the subsequent rounds. During the rounds, participants received regular reminder e-mails from the researcher to encourage participation, or to clarify summaries or questions by the Delphi participants.

4.3.2 Data Analysis

Table 6 in Section 3.5.2, summarised data analysis procedures implemented by the researcher in the qualitative phase of analysis with reference to researchers Creswell

and Plano Clark (2007). Data was collected during each Delphi round to identify emerging issues and practice-based insights. The transcription of the data was conducted manually prior to analysis to ensure the data was precise and appropriate for the analysis. The data analysis included the use of a calculated median to measure consensus, a frequency analysis, and a correlation analysis.

4.3.3 Median for calculating level of consensus.

Campos-Climent et al. (2012) and Hsu and Sandford (2008) suggested that the median be used in measuring consensus amongst participants when conducting a Delphi study. In accordance with those aforementioned studies, the median was used in this research study as a measure of the degree of consensus between participants through Likert scoring with more than 70% suggesting consensus.

4.3.4 Frequency analysis

This research method comprised analysis of the data through identification of emerging consensus from each round then re-presenting the information to the panel to validate consensus or interrogate disagreement. Because of the nature of the Delphi study, notwithstanding the total of 11 Delphi participants, frequency analysis was used. With frequency analysis, the data was quantitative due to the Likert scale question values. This was deemed appropriate to establish the extent to which participants agreed/disagreed with the statements.

4.3.5 Correlation analysis

A correlation analysis can be used to enable a confirmation of themes identified across the Delphi phases designed to underpin the survey questions. Correlation analyses can be conducted using small sample sizes as was the case with this Delphi study, (Kirk, 2007). Using Pearson's Co-efficient, the associations between responses can confirm the strength, weakness, or absence of relationships and in this case an indication of a relationship or association, painting a picture of risk management in practice. Importantly, in this case a correlation can only indicate the presence or absence of a relationship, not the nature of the relationship. Further, the correlation analysis identified patterns amongst a set of question items which could then be placed in a framework and throughout this investigation will be described as 'relationships' or 'associations.' Determining both the strength of the relationship (e.g., 0.83 can be interpreted as an 83% likelihood of a similar response) and significance of each relationship was important in this study.

According to Kirk (2007) small sample sizes can be justified and used to conduct correlations. However, this is done at the expense of statistical power and samples greater than $n=4$ or less than $n=10$ indicate approximations as ‘poor’. The technique is therefore justified in the case of an exploratory study that seeks only to identify any indication of relationships. The results would then prompt qualitative questions to the panel as to ‘what’, ‘how) and ‘why’ these relationships exist.

The quantitative analysis was focused on the identification of rich data through close examination of the individual participants’ comments. Knowing the presence of relationships between questions that were statistically related allowed the researcher to make assumptions and indicate the criticality of certain associations for further development of this study.

4.3.6 Content analysis

The qualitative data was collected and analysed manually in addition to the interpretation of the panels’ comments using content analysis. It was possible to extract topics (or groupings) which indicated and confirmed both strength of groupings or an indication of none. The qualitative data was extracted from individual comments and opinions in Question 1 and in following rounds, where the panel members commented retrospectively. The individual data is included in Tables throughout this document to showcase the living comments of the Delphi respondents.

4.3.7 Delphi rounds

Overall, based on these statistical techniques, the panel largely demonstrated high-level consensus.

For the first round the Principal Researcher determined that there should be a substantial number of questions to provoke an initial broad base of responses upon which the balance of the Delphi study (Rounds 2 and 3) could be positioned.

There were 81 questions offered in Round 1 each underpinning risk management practice understandings, distilled through the Literature Review topics, through other research, and supported through the researcher’s understandings of risk management practice from experience and observation as an insider researcher in Australasian universities. The questions were advanced to uncover the positions the Delphi participants held on risk management practice specifically and whether there were indications of interest in either strategic risk management practice or the risk dimensions.

The Round 2 questions were framed by highly associated scores as well as those that had an inconsistent, (non-definitive) responses from panel members (i.e., responses which have not reached consensus). This added further depth to the study by providing the panel reframed Round 1 questions of importance and illustrating agreements and diversity of responses. The purpose of Round 2 was to identify areas needing further clarification or deeper understanding. This was also an opportunity for panel members to change their minds if they gained new insights and wished to indicate this.

The Principal Researcher suggested to the Delphi panel that they add comments and provide additional information and opinions whenever they wished to. That is, to ask for confirmation of the meaning of a question or other understandings within the parameters of an individual question.

Round 3 served to reach saturation as to understanding and consensus reached (or not) on the condensed range of questions. From the understandings and new insights gained from the Delphi participants, the questions for the survey were formulated to investigate what specific risk management practice was favoured by the university, what interest was there in the strategic risk dimensions, and what appetite within the risk managers' cohort was there for a strategic risk management practice to be developed.

4.4 DELPHI RESULTS

4.4.1 Delphi Round 1

The Delphi rounds were organised to provide opportunities for the Delphi participants to interrogate, reframe and review the questions posed in each round. There were 81 questions offered in Round 1 each underpinning risk management practice understandings and distilled through the Literature Review topics. The questions were advanced to uncover the positions the Delphi participants held on risk management practice specifically, and the researcher's understandings of risk management practice from experience and observation as an insider researcher in Australasian universities.

For this first round the researcher determined that a substantial number of questions were required to provoke an initial broad base of responses upon which the balance of the Delphi study (Rounds 2 and 3) could be shaped. Some of the questions used a Likert 5 scale which assisted the identification of frequencies and included opportunities for the Delphi participants to make individual comments. Within the responses the researcher scrutinised the data looking for unanimous or high-level agreement. Additionally, and of importance, items of interest were disagreements within the panel or indications of weak links or no links at all. The researcher focused on

uncovering relationships between responses which formed part of the exploration of relationships to shape the topics and questions for the next rounds.

The Round 1 data were analysed for frequency and association, as well as a manual examination of the Delphi participants' comments on each question. The results showed the extent to which the Delphi panel members supported or rejected questions and enabled substantial opportunity for comments. The questions for Round 1 were developed to bring concepts of risk management practice to the attention of the Delphi panel participants. Through an examination of responses, that is, high and low or no response, there can be a supposition that the experts agree with or reject a proposition.

4.4.2 Delphi R1: Question 1: Findings

Question 1: In your experience, which essential dimensions of risk management practice are important to your organisation.

The topics for Round 1 questions were prepared under an umbrella of executive leadership, audit and compliance, strategic risk management practice, risk psychology, and risk framework dimensions distilled through the Literature Review and other research. The questions were intentionally broad and introduced topics which may have been unfamiliar within a risk management practice setting. Within this group of questions panel members were asked to consider many strategic risk dimensions and their place (if any) in risk management practice.

a) Executive leadership

The panel members responded to the first question by agreeing that risk management practice had strong links to Executive/Board, (100%). This suggests a significant association between the executive function and the dimensions of risk management practice. As the first question in the study, the Delphi participants showed affinity with the question perhaps as it outlined the core of their own executive practice.

Further, there was a significant association between 'strong links to Executive/Board' and 'alignment of risk management with the organisation' (.805**). This may indicate a view that current risk management practice is acceptable to the Delphi participants. The association of 'strong links to Executive/Board' and business environment scanning (.782**) indicated statistical significance however was seen as a 'creative pursuit' by some of the Delphi participants.

The executive responses to long term horizon scanning (.884**) with business environment scanning showed statistical significance. Additionally, horizon scanning is affiliated with strategic thinking and is a dimension of strategic risk management.

Table 8: Qualitative response (Executive leadership)

Ranked #1 for me - most important Boards are significant stakeholders in success and make strategic decisions
Risk is everyone's business
Support should come from a high-level within the leadership

Source: developed for this study

These responses indicated that the Delphi participants saw their risk management practice as performing well in the current environment. Additionally, there were significant associations of increased uncertainty (.776**) positioning in organisation, (.738**) organisational foresight, and (.810**) with hierarchy.

Table 9: Qualitative response (Existence of risk)

The risk role can decrease uncertainty but can never remove it, therefore, while a useful dimension, is hard to illustrate or validate
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Source: developed for this study

These high associations indicating that the Delphi participants see these three core management areas of positioning and hierarchy along with foresight a strong management practice and in particular indications of a strong relationship with organisational hierarchy. It must be mentioned at this early stage of the study that foresight is a critical and first stage of strategic risk management practice.

91% of Delphi participants agree strongly that audit and compliance are of great importance to the organisation. The Delphi participants showed that this strong agreement continued with statistical significance between audit and compliance with responsibility (.824**), organisational outcomes (.765**), opportunity (.797**) and influence of risk management with decision making (.756**).

b) Decision making

Investigating decision making is a mainstay theme within this study along with dimensions of leadership, and risk perception. The Delphi participants recorded a high agreement (90.09%).

Table 10: Qualitative response (Decision making)

Risk issues are extensively discussed, in significant decision-making issues.
This is very hard to measure. The risk unit should not be the tail which wags the dog. The role is to provide management increased confidence in making calculated risk decisions. Important that decisions are made with consideration of upside and downside risks

Source: developed for this study

c) Value creation

The opportunity to analyse or participate in value creation shows a low frequency of (27.3%), which is a response with unknown undertones as value creation is, by definition, a critical business process. The question on the importance of value creation shows low agreement (36.4%). It is a response which is difficult to interpret as the topic shows very strong association of (.833**) with identifying business trends. This question will be re-presented in further rounds to see whether new understandings may emerge.

This is an unclear response but shows perhaps a lack of understanding by the Delphi participants where this area is either not familiar or not within their sphere of interest, responsibility, or practice.

Table 11: Q1 Qualitative response (Value creation)

Very hard to demonstrate with any credibility or certainty. Does accounting add to value creation?
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Source: developed for this study

d) Strategy

The executives' responses showed statistical significance with alignment of risk management and strategic planning and business environment scanning (.884**), and with links to executive (.782**) indicating strong views by the Delphi participants. Long term horizon scanning showed statistical significance with organisation risk narrative (.848**).

Similarly, short-term horizon scanning associated highly with decision-making (.742**) indicating interest in dimensions of strategic risk management practice. A moderate frequency of 63.6% suggests that executives see a need to align risk management with organisational strategy and strategic planning. This is an important finding as the alignment of risk management throughout the organisation is another core consideration in this study.

Table 12: Q1 Qualitative response (Strategy)

What's the point if it's not aligned with these things?
Need to integrate risk management into the overall institutional strategies & objectives.

Source: developed for this study

e) Risk perception

This question was posed to introduce the concept of risk psychology associated with risk management practice. The frequency of response of (27.3%) was a low score perhaps indicating the Delphi participants may be uninterested in the topic or that they do not see them as important in current risk management practice.

There was a strong association between the organisation and its alignment with business environment scanning (.774**) and value creation (.742**), possibly indicating an interest in the importance of some dimensions of strategic risk management.

Table 13: Qualitative responses (Risk perception)

An area, where having a helicopter view provides insight in to how the developing external environment can/may affect the organisation. It takes an objective perspective.
An area where a risk professional can add substantial value in our organisation.
A dimension of risk management, but hard to meaningfully measure or manage.

Source: developed for this study

The question on organisational risk narrative is one of the more unorthodox questions designed by the Principal Investigator to gauge whether the Delphi participants understand what risk narrative is and what role it can assume in risk management practice.

The frequency score was low at 18.2%, however with long term horizon scanning (.848**) and value creation (.770**) indicating strong association with organisational risk narrative. Risk narrative is a dimension of strategic risk practice and will be further submitted in the further rounds.

Table 14: Q1 Qualitative responses (Risk culture)

Tied into organisation's culture very closely. It can be done poorly but is invisible in the best run entities
Very culture dependent, and relates to stakeholder expectations

Source: developed for this study

Another low frequency occurs with the examination of risk communication. The Delphi participants provided a low to moderate agreement of its importance (45.5%). As part of risk perception, risk communication overall received limited support across the questions on communication. The Delphi panel represented high level executives where communication skills are critical so this series of questions will be re-visited in the Round 2 questions.

f) Risk management practice

Round 1 Question 1 focused on the importance of dimensions of risk management practice. The question asked for a score on the 5-point Likert scale from not important to very important. There was high agreement between the Delphi participants when it came to risk processes, risk identification, risk analysis and risk mitigation, each seen as essential.

Risk management best practice received a moderate agreement (54.6%) by the Delphi panel and was clearly confirmed through the Delphi participants' comments that risk management is best served with individual risk practice and frameworks developed for the organisation. However, associations with internal audit practice were strong reminding the reader that the Delphi participants continue to defer to audit in their responses.

Table 15: Qualitative responses (Risk management practice)

Important, but sometimes you have to go with what works for your organisation, not what is supposed to work
Lowest impact are things such as risk registers, heat maps, etc. They add least value, but auditors and regulators love to see them.

Source: developed for this study

4.4.3 Delphi R1 Question 2: Findings

Question 2: What influences risk management practice in your organisation?

The purpose of Question 2 was to provide more opportunities to explore risk management practice in greater depth. This group of questions had an emphasis of governance/audit, risk psychology, risk management, leadership, and strategy. Additionally, this question asked for a ranking of the top ten influences on risk management practice.

The results below indicated the frequencies of impacts on risk management practice. The strong associations are also presented, either strong relationships or weak, or non-existing. Internal audit, risk process, risk reporting and risk control scored the highest 5 rankings as influencers on risk management practice.

a) Governance & audit

Within the governance and audit responses, (72.8%) of Delphi participants showed high agreement that risk practice is influenced by internal audit. There are strong associations with risk processes (.830**), high responsibility (.824**) and internal audit process (.817**), all significant results.

By way of contrast, internal audit process showed a moderate agreement (54.6%) and further the frequency for internal audit reporting was weak at (45.5%). Again, strong relationships of statistical significance with risk processes (.830**) and IA (.817**) create an issue worth investigating further. Additionally, internal audit reporting showed a low frequency of 45.5% and a high association with risk processes (.749**).

The strongest association in this study and of statistical significance, was that of risk reporting timelines and risk reporting hierarchy (.902**). Risk reporting process with a high frequency (72.8%) and associated highly with risk reporting hierarchy (.884**) and risk reporting timelines (.797**). Risk reporting timelines had the weakest frequency in this group of 45.5% and strong relationships with risk reporting hierarchy (.902**), adopted risk framework (.846**) and risk mitigation (.830**).

Table 16: Q2 Qualitative responses (governance)

Focusing efforts on engaging risk owners to discuss key risks and how they are managed has yielded a more meaningful exercise than the conventional filling in of extensive templates which most business units copy and paste or assign to junior staff

Source: developed for this study

b) Risk psychology

There was some indication that the Delphi participants may be accepting of the importance of cultural and social context and its influence on risk management practice with a moderate frequency of 63.7% agreement of the importance of risk psychology cultural and social contexts, yet no association with other topic areas. Further results showed that 81.8% of Delphi participants showed a high agreement that risk psychology decision-making (risk aversion) influences risk management practice but again no associations.

72.7% of the Delphi panel agreed that decision making (gut feeling) was important in risk practice. It is with this grouping that there was a strong association of (.738**) between risk psychology decision making (intuition) and risk management best practice. Risk perception had a high frequency of 81.8% showing a recognition of the field. Additionally, there was a high frequency which aligned highly with risk psychology personal experiences (72.7%).

c) Risk management practice

The Delphi participants showed high agreement that a positive perception of risk management practice across the organisation was important (81.8%). There were no associations with other areas, however. Risk processes, risk identification, risk analysis and risk mitigation had a high agreement of (72.8%) and significant associations with internal audit (.830**).

Risk reporting hierarchy showed strong associations with risk reporting timelines (.902**), risk reporting process (.797**), uncertainty (.810**), and responsibility (.824**), all significant findings. Risk reporting process had a much higher frequency of (72.8%) of Delphi participants' agreement. Again, the associations were strong and significant, (.884**) risk reporting hierarchy, and (.797**) with risk reporting timelines. Risk reporting timelines showed only (45.5%) of Delphi participants agreed that it was an important function of risk reporting yet associated strongly with other operational processes including risk mitigation (.830**) and adopted risk framework (.846**).

There was a medium frequency of (54.6%) for an adopted risk framework. Further, there is statistical significance (.846**) between the adopted risk framework and risk reporting timelines and a moderate to high association with risk mitigation (.755**).

Table 17: Q2 Qualitative responses (risk management practice)

The culture of the organisation has to change from reactive to pro-active with respect to risk management practice.

Source: developed for this study

d) Leadership

Leadership hierarchy showed high agreement (81.8%) and statistical significance with increased uncertainty (.810**), (.798**) positioning in organisation**) and (.796**) for accountability.

When it comes to agreement with leaders' use of power there was a low to moderate frequency of (54.6%). The Delphi participants' view of leadership use of power included a strong association with hierarchy (.738**). Leadership accountability shows high agreement (81.8%) and a strong association with internal audit process (.770**)

Table 18: Q2 Qualitative responses (leadership)

By ensuring that leaders understand they are accountable.

Source: developed for this study

e) Strategy

81.8% of Delphi participants agreed strongly that short-term horizon scanning was important in strategic risk practice. They also strongly associated short-term horizon scanning with decision-making (.742**) suggesting Delphi participants recognised the importance of both in strategic risk practice. Further, (100%) of Delphi participants agreed very strongly that long term horizon scanning influenced risk management practice. Long-term horizon scanning was significant with organisational risk narrative at (.848**). The Delphi participants also showed high agreement with organisational foresight and organisational intent (100%) and strategic opportunism (81.8%) indicating high frequencies. Of note, however, there is no association with these dimensions.

4.4.4 Delphi R1 Question 3 Findings

Q3: In your organisation, what is the degree to which the dimensions below generate a response or influence organisational practice?

The purpose of Question 3 was to provide further opportunities to explore the dimensions of uncertainty, risk mitigation, emerging opportunities, rapid change, and feedback, requiring a definition of the importance of understanding these dimensions. This question also asked for a ranking of the top ten dimensions of risk management practice which would illustrate the influences on the Delphi participants' risk management practice.

a) **Uncertainty**

The Literature Review illustrated the importance of valuing uncertainty and an examination of uncertainty forms a core part of this study.

Table 19: R1 Q3 Qualitative responses (uncertainty)

The workplace, 'tries to consider and lessen sources of uncertainty in our planning but have to keep moving even when this is present'
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Source: developed for this study

36.4% of Delphi participants weakly agreed that uncertainty influenced the organisation's risk management practice. Continuing there were significant associations with uncertainty and staff feedback (.802**) and risk mitigation (.768**).

68.7% of Delphi participants agreed that risk mitigation influenced organisational practice. There were significant findings, (.859**) with risk taking, (.830**) with risk timelines and (.768**) uncertainty.

b) **Table 20: R1 Q3 Qualitative responses (risk mitigation)**

Resource limitations often limit our ability to take advantage of emerging opportunities, but strategic priorities funds are set aside to take advantage of as many of these as possible.

Source: developed for this study

c) **Emerging opportunities**

Emerging opportunities show a frequency (81.8%) indicating high interest by the Delphi participants. There is also a significant finding of (.735**) with risk mitigation.

Table 21: R1 Q3 Qualitative responses (emerging opportunities)

The research enterprise almost has this as their mandate however it also creates risk challenges in trying to mitigate the risk of the unknown

Source: developed for this study

d) Rapid change

Rapid change showed a high agreement (81.9%) of the expert panel that rapid change is important in risk management practice. There is no association with other dimensions.

Table 22: R1 Q3 Qualitative responses (rapid change)

Rapid change that is imposed on the institution influences organisational practice, but there is rarely internally generated rapid change in our operations

Technological and societal change are changing so rapidly. Universities are challenged in trying to keep up.

Source: developed for this study

e) Feedback

Table 23: R1 Q3 frequency and correlations (feedback)

Question detail	Frequency results	Pearson's coefficient
Auditor's feedback	36.4% agreement 18.2% disagreement	0
Staff feedback	18.2% agreement 18.2% disagreement	.802 Uncertainty
External stakeholder feedback	27.3% agreement 9.1% disagreement 18.2% agreement	.751 Strategic risk
Cross department input	9.1% disagreement	0

Source: developed for this study

The Delphi participants showed through their responses that they saw only a very weak agreement with the 'feedback' sub-questions, staff feedback was (18.2%). There were significant findings of some note with two categories of questions, uncertainty

(.802**) associated strongly with staff feedback. Strategic risk associated strongly (.751**) with external stakeholder feedback.

4.4.5 Delphi R1 Question 4: Delphi participants' comments

Question 4: How would you describe the ideal risk environment?

The Delphi participants were asked to describe the ideal risk environment. The Delphi participants' comments illustrated emerging areas of interest: strategy; internal environment; integration; resilience; organisational culture/staff understanding; risk owners across disciplines/silos.

In this question, the Delphi participants were given an opportunity to write qualitative descriptions of their ideal risk management environment. The question generated many detailed responses. The following analysis sought to identify common themes that captured experts' thinking about their understandings related to risk management practice and particularly strategic risk management practice.

The Delphi participants' views of the ideal risk environment suggested that some adherence to a structured risk framework was still preferred although retaining a compliance-based approach may not be the best fit if it continues to drive risk practice. The Delphi participants' responses below provide more detail and hint at incorporating a strategic risk practice, including core risk dimensions would satisfy a first step to changing their risk practice.

Table 24: Delphi R1 Q4 comments (ideal risk environment)

The ideal risk environment is one where an institution ...creates a resilient environment.
The culture of the organisation has to change from reactive to pro-active with respect to risk management. How to do this I am not sure.
Begin with the concept that risk is everyone's business, and each staff member is a stakeholder in managing the entity's risk
Risk management should be both top down and bottom up.
That risk management becomes an integral part of normal operations as opposed to something thought of later or only once something goes wrong.
The ideal environment is one on which all levels of staff understand that the control framework is in place to allow the above to take place.
Identified risk owners with organizational support across multiple disciplines (risk, legal, audit, compliance, IT (if appropriate), affected departments/individuals.

Source: developed for this study

4.4.6 Delphi Round 1: Conclusions

The Round 1 questions attracted a broad range of comments, evidence of relationships and levels of agreement/ disagreement.

This allowed the researcher to:

- Confirm frequencies that achieve consensus greater than 70%
- Identify significant associations requiring further consideration.
- Identify dissenting views and comments.
- Identify emerging views .

Throughout Round 1 the Delphi participants' comments indicated significant frequencies with prevailing business practice, governance, executive, audit, leadership, and risk aversion. These findings showed that the Delphi participants' views closely related to their current risk understandings and practice. The Round 1 findings were used to characterise the Round 2 questions which were represented as a distillation of the current risk environment. The Round 2 questions were designed to explore the Delphi participants' opinions through both frequency examination and content.

The questions were analysed showing frequency, correlation, content groupings along with Delphi participants' comments. The following questions showed evidence of strong associations, substantiation of strategic risk management practice, dimensions, and new knowledge.

a) Frequencies achieving consensus

There were significant frequencies within the strategic risk practice dimensions. Organisation foresight, organisation intent, short and long-term horizon scanning, strategy, rapid change, and decision making, elements which sit within strategic risk management practice and which the Delphi participants found to be important in this examination of risk management practice.

Table 25: Delphi frequencies achieving consensus

<i>Frequencies achieving consensus > 70%</i>	
Executive 100%	Leadership 81.8%
Organisation foresight 100%	Strategy 81.8%
Organisation intent 100%	Emerging opportunities 81.8%
Horizon scanning 100%	Rapid change 81.9%
Governance/Audit 90.09%.	Risk aversion 81.8%
Decision making 90.09%.	

Source: developed for this study

b) Dissenting views

The Delphi participants' viewpoints show that uncertainty, social and cultural, risk communication, staff feedback, and risk mitigation received little interest in support of these issues however will be included in the Delphi Round 2 for further examination.

Table 26: Dissenting views requiring further consideration.

<i>Dissenting views and comments requiring further consideration</i>
Risk reporting timelines 45.5%
Staff feedback 18.3%
Cross department input 18.3%
Risk culture 27.3%
Value creation 36.4%

Source: developed for this study

c) Delphi associations

Associations requiring further consideration were identified and explored. Associations fell into two areas of effect, one based around governance, audit and executive leadership focused responses such as risk hierarchy, audit and risk reporting, the other being strongly related to strategic risk management dimensions, specifically strategy, foresight, horizon scanning, risk perception, and risk narrative.

Table 27: Delphi associations requiring further consideration

<i>Associations requiring further consideration.</i>
Risk management/risk reporting (.902**)
Executive/short-term horizon scanning (.805**)
Internal audit/risk processes (.830**)
Strategy/organisation risk narrative (.848**)
Organisational foresight/increased uncertainty (.738**)

Source: developed for this study

The associations mentioned above reflected both executive issues and strategic risk management dimensions. The association between executive and short-term horizon scanning (.805**) and internal audit/risk processes (.830**) displayed statistical significance and are found in current university risk practice. The SRM dimensions show connections with new strategic risk practice thinking, indicated through a strong association between strategy and organisation risk narrative (.848**), as well as organisational foresight and increased uncertainty (.738**).

The strongest relationship is illustrated by the grouping of risk management and risk reporting (.902**) and is significant. Throughout this round, the questions regarding risk reporting have related weakly so this notion of risk reporting associated with risk management is uncommon. The researcher will incorporate new questions on risk reporting in further rounds which may show this situation to be an anomaly or an area of importance requiring further investigation.

From the Literature Review, risk communication shows as an area of high interest to researchers and in fact generating numerous frameworks and theories. For whatever reason, the Delphi participants found risk communication to be of little importance as mentioned above. By contrast there is a strong view through the Literature Review that risk communication is a critical component of strategic risk management practice in general and is noted by the researcher for inclusion for further examination.

d) New Insights

The Delphi Round 1 indicated the Delphi participants displayed strong support for executive and governance topics and showed substantial interest in strategic risk management dimensions in the first instance. Within the findings there were specific new insights of interest. The new insights are core dimensions of strategic risk management practice and it is noteworthy to see strong support by the Delphi participants through both frequency and associations emerging through this interpretation phase.

Table 28: New insights requiring further consideration

<i>New insights</i>	
Horizon scanning	Strategic opportunism
Organisation risk narrative	Organisational culture
Emerging opportunities	Adopted frameworks
Organisation foresight	Risk communication

Source: developed for this study

From the early propositions to the defined research questions, new insights have emerged through Delphi participants' interest either through analysis of outcomes or directly through the Delphi participants' comments. The Delphi participants' insights will be carried across into the questions for Delphi Round 2. The Delphi participants' responses reflect a general discontent with the status quo to some extent. The textual responses of the Delphi participants' express a desire to stay with known risk practice, yet there is strong evidence showing a view that there might be a pathway to new approaches to risk practice.

Table 29: Final panel comments

<i>The ideal risk environment is one where an institution ...creates a resilient environment.</i>
<i>The culture of the organisation has to change from reactive to pro-active with respect to risk management. How to do this I am not sure.</i>
<i>Begin with the concept that risk is everyone's business, and each staff member is a stakeholder in managing the entity's risk</i>

Source: developed for this study

4.4.7 Delphi Round 1 Summary

The Round 1 findings demonstrated views of risk management practice from both a governance business-as-usual approach and a strategic risk management practice which indicates early confirmation of the propositions, as proposed in Chapter 1. The research questions posed a gap in the research between current risk management practice and strategic risk management practice emerging through these early Delphi participants' responses to Round 1 questions.

There is an apparent emphasis on strategic risk dimensions evolving in parallel with a governance/audit approach to risk management practice. The Round 2 questions will look for deeper investigation into both the current risk environment and the prospect of a strategic risk management practice through the development of understanding the risk dimensions. Round 2 will be conducted as a qualitative study with the Delphi participants discussing and commenting on both their own views and those of the other Delphi participants.

4.4.8 Delphi Round 2

The Round 2 questions sought to a) explain the findings from Round 1 as identified by the researcher and b) consider dimensions, content, comments, and further strong agreement/dissent. Round 2 gave an opportunity for panel members to change their minds or argue for or against other Delphi participants' comments. The researcher collected and analysed data qualitatively, that is, collecting data on strong frequencies and emerging issues.

For this round, the data was analysed with the researcher exploring frequencies, Delphi participants' individual responses of interest and strong groupings of responses. The significant correlations which emerged from the Delphi Round 1 requiring further consideration were included in the Round 2 questions.

The Round 1 findings were used to characterize the Round 2 questions which were represented as a distillation of the current risk environment. The Round 2 questions were designed to explore the Delphi participants' opinions through both frequency examination and content/thematic analysis.

The Delphi participants received a detailed analysis of Round 1 responses as well as the sixteen Round 2 questions. The Round 1 analysis offered the Delphi participants an opportunity to read their associates' comments, consider their own and reflect on the prospect of re-thinking their views.

Using the general groupings of executive leadership, audit, risk psychology/decision making, strategic risk management, and risk management practice, twenty-four questions including sub-questions were designed. Each question reflected the Round 1 findings, expert responses, some confirming subjects from the Literature Review and others, aimed to stimulate shifts in the Delphi participants' views.

Executive, horizon scanning, organisational foresight, risk perception, decision making, value creation, audit/compliance, rapid change, risk reporting, communication, and strategic opportunity/strategic planning were included as areas of further interest which underpinned the Round 2 questions. Dissenting views included uncertainty, social and cultural, adopted risk framework are also contained within the Round 2 questions as well as the prospect of emerging strategic risk management practice through further understanding of the risk dimensions.

4.4.9 Delphi Round 2: Findings

a) Questions1/2 Executive

Q1: There was 100% agreement and correlation that risk management has strong links to the executive function. Please explain why this is so.

These questions asked for opinions on why high levels of agreement that risk management has strong links to executive function exist in current business practice.

There was 100% support from the panel that the executive had ultimate responsibility for decisions and that executive knowledge and authority facilitated risk management decision making. Following comments from Round 1 regarding executive behaviour being supported by 100% of Delphi participants, there was a moderate level of agreement (50%) in this case supporting the need to have senior management engagement in risk management decisions.

Q2: There is a 50% disagreement that risk management best practice is an essential element of risk practice. Why would some of the panel disagree that best practice is not an essential element of risk practice?

The Delphi participants did not show strong agreement that executive should influence strategic thinking or have interest in risk best practice.

Table 30: R 2 Q1/2 Qualitative responses (executive)

The RM function has strong links to executive management and the board from an overarching viewpoint in ensuring that programs and processes are in place
I believe this part aspirational goal. It is a self-reflection on the development and maturity of the discipline over the careers of the respondents. Many who deal with risk in the sector do not have this type of access but would like to.
The executive plays a pivotal role in ensuring a sound risk management culture and environment
They are entrusted to be the custodians of good corporate governance, the prerequisite for sound risk management.
Best practice can be a distraction. Must not become the goal. Should design what is right for each organisation

Source: developed for this study

b) Question3 Risk Management/Internal Audit

Q3.1: Risk and internal audit processes are strongly related (.830 correlation). However, panel comments indicate that 'these are low value exercises only satisfying auditors.' What explains this attitude?

Q3.2: The correlation between risk processes and internal audit is significantly high, (.830). This suggests that internal audit may become the informal risk benchmark and determine risk practice. Please explain why this is so and what consequences may arise from this?

This question suggested that risk management and internal audit are strongly related but many interactions between the two are identified as low value exercises. The second part of the question suggested that there had been a strong association between risk processes and internal audit (.830**), suggesting that it may determine risk practice. The Delphi participants were asked to explain this issue and describe any consequences.

100% of the Delphi participants agreed that the executive frames the loop between risk management and internal audit. Additionally, and in contrast, (62.5%) of the Delphi participants agreed that the risk management and internal audit environment does not encourage agility and versatility. The Delphi participants indicated that there was a tendency for internal audit to provide box ticking audit exercises to risk management practitioners.

Further, the same Delphi participants suggested that internal audit and risk management work best in a mutual relationship with internal audit informing control issues. However, an independent comment from one of the Delphi participants indicated that ideally internal audit could practice as an interested bystander.

Table 31: R2 Q3 Qualitative responses (risk management and internal audit

There is evidence that IA limits ERM processes by becoming the risk benchmarking provider through ERM focused audit.
Stakeholders expect IA to expand its conventional focus on value preservation to encompass activities related to value creation instead of just trying to find control weaknesses.
If you have an auditor that is a “check the boxes for the sake of checking the boxes” type, then exercises conducted for their sake will not add value (to either side). If you have an internal audit group whose goals are to add value, efficiency, and improvements in a collaborative manner, the risk and internal audit will be complementary.
These will only be of value if there is a complete feedback loop between the auditors back to the Risk Management process.

Source: developed for this study

c) Question 4 Decision making

Q4.1: There is high agreement (82%) that risk psychology decision making influences risk management practice. Why and how does this influence decision-making?

Q4.2: A 90% agreement suggests that risk management influence on decision making is an essential outcome of risk management practice. Why?

This question suggested that risk psychology influences risk management practice and influences decision-making. Further the question suggests that a risk management influence on decision making is an essential outcome. The Delphi participants were asked to describe why this is a valid comment.

The Delphi participants made lengthy and detailed comments particularly with this question regarding decision making and its influence on risk management practice. One expert suggested, ‘there would be strong agreement that the discipline of risk management should have strong influence on decision making...that said, improving the quality of decision making is fundamental to any entity meeting their objectives, many risks, losses, and poor strategy are the result of poor thinking and decision making’.

100% of Delphi participants agreed that decision making is an important dimension in strategic risk management practice. The Delphi participants considered that strong decision-making skills were fundamental to executive management practice. Further, that psychological, behavioural, and cultural influences in risk management practice are important to understand. However, if poorly managed, where written and documented systems are not understood or are manipulated by pressure from a leader, operational inertia can be found.

100% frequency indicates the Delphi participants concur that inherent and personal biases need to be understood to manage decision processes. These understandings may take the form of controls, agreed language, framework, decision balance. The array and depth of responses by the Delphi participants suggests that there was interest in and application of learning in this topic. The comments below give an overview of the direction of the Delphi participants' thinking on decision making and its importance in organisation practice.

Table 32: R2 Q4 Qualitative responses (decision making)

How could it not? If I'm interpreting this question correctly, I'd say it's always difficult to remove inherent and personal bias from decision making. Hopefully, you have a good balance of risk-averse and risk-seeking perspectives in your risk management practice.
In my view, in the vast majority of cases, risk management is about encouraging people to make the right decisions. It means not relying 100% on known shortcuts such as bias, preconceived notions, dangerously incomplete data or other traditional basis of decision making.
The problem is that everyone perceives risk differently, and will make different decisions accordingly, the risk professional helps the universities gain a more consistent view of risk, introduce an agreed language of risk and foster the interactions between staff needed to improve performance and achieve objectives.

Source: developed for this study

d) Question 6 Strategic risk management

Q6.1: Strategic opportunism is strongly agreed to be influential on the organisation. Explain how this aligns or does not align to current risk management practice.

This series of questions asked for the Delphi participants to discuss whether there is an alignment between strategic opportunism and current risk management

practice. 100% of the Delphi participants agreed that strategic opportunism was a critical process which established the organisation's strategic goals aligning strongly with the strategic risk environment.

Again, 100% of the Delphi participants agreed that the organisation's strategic goals aligned with risk ownership indicating a robust strategic risk environment. The Delphi participants also agreed that this practice strengthened decision making, however in many cases this is an ideal and not frequently followed.

Table 33: R2 Q6 Qualitative responses (strategic risk management)

The ability to decide whether to take strategic opportunities has been strengthened by risk management.
Assisting organisations to survive and flourish in the future is the “holy grail” for the risk professional. We see the discipline has moved from hindsight to the ability to show more foresight. While imperfect, this perspective can be useful in strategic decision making.
I interpret strategic opportunism as meaning the ability to pursue opportunities that contribute to achievement of strategic goals. However, I often find current practice tends to focus on limiting negative outcomes associated with current activities, rather than seeking new opportunities.
Strategic risk management enriches management dialogue by adding perspective to the strengths and weaknesses of a strategy as conditions change, and to how well a strategy fits with the organisation's mission and vision. It allows management to feel more confident that they have examined alternative strategies and considered the inputs of operational levels of the organisation who will implement the strategy selected.

Source: developed for this study

e) Strategic risk practice

Q6.2: A high agreement (73%) indicates that strategic risk practice influences the organisation. Please explain how this influence takes place in your organisation.

(75%) of Delphi participants in Round 1 agreed that strategic risk practice is a critical function and further, that executive understandings are enhanced by risk management processes. This question requested Delphi participants explain how a strategic risk practice influences their organisation. In general, the Delphi participants

indicated that strategic risk practice is an ideal, that the current business environment and particularly within universities, whilst having promise has not been reached.

Table 34: R2 Q6 Qualitative responses (strategic risk practice)

<i>Current strategic risk/uncertainty practice is reactive to present conditions which delivers organisational inertia.</i>
<i>The danger is that risk management becomes very reactive to events that occur now. The assessment of risk should take its time to really evaluate the short, medium, and long-term risks with a well thought out strategy.</i>
<i>For strategic risk management to be effective, both a comprehensive view of the operating context is necessary (often only present at the executive). Without both the knowledge and the authority to respond appropriately, risk management cannot be</i>

Source: developed for this study

f) Adopted risk framework

Q6.3: There is marginal agreement for an adopted risk framework. Would it be a productive exercise to investigate a strategic risk management model, (see question 6.2 above). Please explain the reasons for your answer.

The final question in this strategic risk management group suggested that although there was a moderate agreement by the Delphi participants in Round 1 for an adopted risk framework, the Delphi participants did not have a solution for their current risk environment.

In response to the question, 75% of the Delphi participants agreed there was merit in pursuing a new risk model and 75% of participants supported the implementation of a strategic risk management (SRM) framework. This indicated a change in the Delphi participants’ thinking and a strong response. A summary from one of the Delphi participants suggests that, ‘with organisational maturity, its unique context, culture and industry can manage risk within its own frameworks.’

Table 35: R2 Q6 Qualitative responses (adopted risk framework)

A Strategic Risk Management framework would bring in future thinking; it must be clear; a hybrid model for each organisation.
I believe the reluctance comes from past experience in risk where, for example, advisory standards, such as ISO31000 has been transformed by “consultants” to be a compliance standard, which is supposed to provide assurance a risk management process is underway. In the view of many, these individuals hijacked the discipline, making it a compliance exercise rather than a risk culture creating exercise. Many of us have seen ads in journals offering to help our organisations becomes ISO31000 compliant, which is impossible for an advisory standard.
Whether or not it is considered an adoptive risk framework, I do feel that an appropriate approach can be developed and used. I have seen this done in my experience.
In my opinion, each organization adopts the aspects of various frameworks as appropriate for their particular culture and needs.
I think that investigating a strategic risk management model lays a good groundwork for implementing an Enterprise Risk Management practice and focuses attention on improving risk management. So far, I’ve found that adopting an ERM framework has given direction to risk management at our institution, although some adjustments have needed to be made as we completed the first full risk management cycle (1 year).

Source: developed for this study

g) Question7: Environment scanning

Q7.1: There is strong correlation (.884) between risk management /organisational strategy/strategic planning and business environment scanning. Why is this alignment important?

The questions in this group indicated a strong Round 1 association (.884**) between risk management and horizon scanning, which were designated dimensions of strategic risk management. The question asked why this association is important. Further, the question probes as to how the uncertainty of longer-term anticipation of risk influences current risk practice or an ideal risk environment.

The Delphi participants show 100% agreement that this is a critical factor in risk management as it can create a whole of university viewpoint. Additionally, the Delphi participants agreed that understanding the business environment allowed an increase in the probability of meeting organisation strategies.

Table 36: R2 Q7.1 Qualitative responses (environment scanning)

They go hand in hand. Understanding the environment is critical to assessing risk, strategy and strategic thinking.
One of the most significant roles a skilled risk manager can play in an organisation, is to assist in the environmental scanning, which is part of the strategic planning process.
That is a big question. In addressing potential future risks and uncertainty, I feel that and there are helpful techniques to employ such as long-term scenario development/evaluation that can be used to test the organization's ability to respond, mitigate and withstand each scenario as well as the wisdom of various strategies. I have also seen effective long-term strategies developed for companies to remain profitable through the cycle in cyclical industries, while taking advantage of both up cycles and down cycles, and remaining financially strong, opportunistic, and nimble. I have also seen effective long-term strategies developed for companies to remain profitable through the cycle ...and remaining financially strong, opportunistic, and nimble.

Source: developed for this study

h) Long term horizon scanning

Q7.2: Long term horizon scanning indicates 100% agreement that there is an influence on risk practice. To what extent may the uncertainty of longer-term anticipation of risk influence how risk management is currently practiced, versus how it should be practiced?

This question highlights a significant association (.848**) between long term horizon scanning and organisational risk narrative. The Delphi participants were asked to detail why this is apparent. Long term horizon scanning is supported by 100% of Delphi participants as an essential issue in addressing uncertainty, as well as delivering a broader management view which is driven by strategic risk management.

Q7.3: Long term horizon scanning, has a very high correlation (.848) with organisational risk narrative. Why?

An expert's response suggests that specific scenario planning could be helpful to assist understanding uncertainty for the organisation. Yet a further expert concludes that long term horizon scanning is a critical practice which is highly related to organisation maturity and organisation narrative.

Table 37: R2 Q7.3 Qualitative responses (long term horizon scanning)

Without long term horizon scanning, the risk management process will only really help to manage existing risks and may revert to a 'box' ticking exercise. The long-term horizon scanning helps to assess the impact and likelihood of future risks.
Certainly, skills in accurate forecasting and predicating future trends will become a greater part of the risk profession. Rather than simply chart the rocks in the direct path of the organisation, the risk professional will need to assist in the navigation around the rocks they identify, such skills are rare in risk professionals today.
Having a strategy to look into the future is critical for assessing the longer-term impacts on your university.
In my experience, not many risk professionals are engaged in meaningful, long term horizon scanning with the exception of issues such as climate change or cybercrime.
Those are important components of long-term horizon scanning, and they seem missing from the discipline's conversations.
The more mature an organizational risk program, the more likely they will consider long-term issues.
Senior leadership engages in a dialogue with the Board on both its short- and long-term strategy and discusses risk issues such as cybersecurity, mobile, big data, cloud, and social media and how they can affect the organisation. The discussion also includes the changing macroeconomic factors, industry-specific issues and economic issues.

Source: developed for this study

i) Question 9: Social and cultural

Q9: Social and cultural links to risk management both show a 27% disagreement suggesting that the panel disagrees on the inclusion of social/cultural impact on risk management practice. What could be the reason for this?

The question regarding social and cultural issues was carried over from Round 1 as an issue which received little support. There had been 27% of Delphi participants who saw any need for this area to be included in risk management practice, yet there was an association between value creation and business trends (.833**). This subsequent question asked for a reason the frequency had such little support in the previous round.

The responses showed generalised comments which did not add further information that this is an important issue however there is some clarity in that this issue is rarely included in reports, the impacts are unclear and difficult to define.

Table 38: R2 Q9 Qualitative responses (social and cultural)

One's cultural and social context, intuition, or personal experiences may influence his risk perception which may in turn influence his assessment of risk.
The impact of social and cultural impacts on ERM is mostly unimportant or at the lower end of usefulness. Social and cultural influence on decisions is known but not acknowledged.

Source: developed for this study

j) Question 10: Risk perception

Q10: There is an 82% agreement that risk psychology/risk perception influences risk management practice. Can you explain how this is perceived in your organisation and give an example of how this may take place?

Round 1 indicated that there was an 82% agreement by the Delphi participants that risk perception influenced risk practice. Risk perception is one of the dimensions of strategic risk practice. The Delphi participants were asked to explain how this is perceived in their risk environment.

100% of the Delphi participants advised that for them risk perception is an all-important factor in risk management practice. Further some of the Delphi participants indicated that psychological, behavioural and cultural influences are important to understand and action within a risk environment. One expert warns that an innate bias always enters one's perception of risks which can have the effect of leading operational inertia.

Table 39: R2 Q10 Qualitative responses (risk perception)

Each individual will have a differing perception on the likelihood or impact of a particular risk; this may vary depending on if its executive management or middle management assessing risk.
Since risk perception is very subjective and judgement-driven, psychology comes into play and can affect how we feel about taking on certain risks. Psychology can affect our risk assumption and risk aversion.
I believe this goes back to risk psychology, which can affect our risk assumption and risk aversion.
I think innate bias always enters into one's perception of risks. At my institution several years ago, a large and negative incident arose for which the public affairs staff assumed they could "manage" the press because of their perception of the scope of the risk of negative publicity – and they were massively wrong.
I would say that risk is generally perceived in a negative way in my organisation (i.e. risks are negative things that will prevent / hinder us from achieving our goals and are things to be avoided). Risk management practice, then often focuses on considering what we want to do and how best to manage or react to things that have gone wrong.

Source: developed for this study

k) Question 12: Leadership

Q12: The correlation between leadership hierarchy and increased uncertainty is high, (.810) suggesting that the more hierarchical the organisation structure/decision making is, the more uncertainty there is. Please explain why this may be so and what examples illustrate this?

In Round 1 there was a strong relationship between the organisation structure and uncertainty. There was agreement that more complex the structure, the higher the level of uncertainty. This question mentioned that there was a strong association (.810**) between the leadership hierarchy and increased uncertainty in Round 1. The Delphi participants were asked to comment on whether this association is useful.

The Delphi participants agreed (100%) that, in terms of leadership hierarchy and its decision-making, the more complex the organisation becomes the greater issue there is with decision making across the organisation. The Delphi participants' comments included that flatter organisations are more successful and achieve better results, avoiding silos is critical, enhanced communication between the levels and functions is

essential, and finally that hierarchical structures create a disconnect from risk management practice.

The subsequent question presented the need to investigate the positioning of risk management in a structure. The Delphi participants were clear that risk management was embedded in executive structures. There was concern that the risk management function must be clear to executive. In a complex hierarchy, risk management can be overlooked with ‘lack of sight’ where real risk can be unknown. It can also affect organisation communication which can be a critical flaw in organisation operations.

Table 40: R2 Q12 Qualitative responses (leadership)

I believe that better results are achieved with a flatter organizational structure and clear accountability as described variously in other responses herein. I think the organization should encourage communication between levels and functions and avoiding silos is critical. The best, timely information available to as many as possible can strongly support successful outcomes.
There needs to be a partnership between risk management and the organization’s leadership in order to support positive growth.
One of the key measures of the success of embedding risk management within the organisation is the extent to which is used to influence decisions.
The value creation paradigm influences the risk management process (and vice versa) as leaders consider their decision-making.
I would think this would be due to more complex communication structure and potentially decreased access to information, so thus less alignment between leadership and risk management.

Source: developed for this study

1) Questions 14: Rapid change

Q14: Rapid change is agreed to be important to 82% of respondents. How does the panel’s comment below illustrate that?

This question follows up on the 82% agreement that rapid change was important to the Delphi participants from Round 1. The direction was to explain what this comment means.

There was 100% agreement that rapid change in the operational environment is critical for organisations. The Delphi participants’ comments suggested that increased competition and rapidly changing environments demand that the organisation

understands the need to continually reassess processes to keep up. The Delphi participants suggested that organisations do not embrace change naturally and, in many cases, old practices confine reactions, and in some cases, make change impossible.

Table 41: R2 Q14: Qualitative responses (rapid change)

‘Technological and societal change are changing so rapidly. Universities are challenged in trying to keep up.’
Rapid change will affect different types of industry in different ways. As organisations don't embrace change well, the choice is impacted by old methodology barriers.
Change is good. It is critical that universities keep up with the rate of change, however this is a challenge. We need to continually reassess our processes to keep up, and this is becoming more and more difficult because of the rate of change.
To me it is illustrative both that these external changes are indeed uniquely rapid, and that most organizations don't easily embrace change
I think that the inability to rapidly change is generally important, as post-secondary institutions in general are not often good at change.
Change is becoming so rapid. Universities are very slow to effect change. Implementing change is impossible. Universities are designed to avoid risk and negatively react to rapid change.

Source: developed for this study

m) Delphi Round 2: Conclusion

The Round 2 questions attracted a broad range of comments, evidence of frequencies and levels of agreement/ disagreement. This allowed the researcher to:

- a) Confirm qualitative findings.
- b) Identify frequencies of interest.
- c) Identify emerging views requiring further consideration.

The Round 2 findings demonstrated unique views from the Delphi participants as they commented fully on the questions. The questions had been developed from the Round 1 findings looking specifically at findings which showed strength, weakness, and unique capabilities. The Round 2 questions invited further depth of clarification to capture attitudes and meanings which the researcher examined through a qualitative methodology.

There were understandings associated with questions which asked for comments on strategic risk practice dimensions, long-term horizon scanning, strategy, rapid change, and decision making, elements which the Delphi participants found to be important in this examination of risk management practice in universities.

Throughout Round 2, the Delphi participants' comments indicated strong support in prevailing business practice, that is, executive, audit, and leadership. The findings indicated the Delphi participants' views closely related to their current risk understandings and practice with detailed commentary of their organisation's risk practice. However, there was also interest in strategic risk practice dimensions: strategic opportunism, horizon scanning, scenario planning, rapid change, risk perception, and decision making, elements which sit within strategic risk management practice and which the Delphi participants found to be important in this examination of risk management practice.

The propositions arising from the Round 2 analysis indicated support for some of the risk dimensions which had emerged from Round 1 findings, those being risk perception, decision-making, horizon scanning and strategic opportunism. The Delphi participants also strongly agreed executive and audit as well as leadership were of high importance. Of prime importance in this round, the elements of strategic risk practice were also strongly supported as was the notion of an adapted risk framework.

From the early propositions to the defined research questions, new insights have emerged through the Delphi participants' interest either through analysis of outcomes or directly through the Delphi participants' comments. The Delphi participants' responses reflect a general discontent with the status quo (in risk management practice) to some extent. The researcher sees in the written responses the Delphi participants' express a desire to stay with the known risk practice, yet there is also strong evidence that a pathway showing new approaches in strategic risk practice is highly desirable.

4.4.10 Delphi Round 3

The purpose of Round 3 was to reach saturation as to both understandings and consensus reached (or not) on this condensed range of questions. This round, as was the case in Round 2, was largely focused on the qualitative results. The multifaceted questions provided the Delphi participants with final opportunities to express detailed viewpoints. The Delphi participants' responses were carefully examined looking for findings, key responses, and new insights from Round 2. The depth of detailed responses enabled the construction of an important survey designed to inform the university risk managers in the next phase of this study.

The Delphi participants received a detailed analysis of Round 2 responses prior to receiving the Round 3 questions. The questions sought to a) explain the findings from Round 2 and b) consider the research questions, dimensions, and strategic risk management practice and framework. For this round of questions, the Delphi participants' responses generated frequencies, individual responses and topic groupings to enable the formation of the survey.

4.4.11 Delphi Round 3 findings

a) Delphi R3: Question 1 Executive leadership

Q1: There was 100% agreement that senior management engagement is critical to any risk management environment. The Panel did not agree that executive drives strategic risk practice in current workplaces. Comments also suggest that executive can hinder risk management practice through, unclear pathways, lack of understanding of risk ownership, and limited knowledge of the risk process.

The Delphi study confirmed, through a 100% frequency score, the Delphi participants' view of the importance of executive/leadership in risk management practice was important. There was strong agreement by the Delphi participants (100%) that executive sponsorship and leadership of risk was most critical for organisations.

The Delphi participants' view of the importance of executive leadership in risk management practice was important. There was strong agreement by the Delphi participants that executive sponsorship and leadership of risk was most critical for organisations.

Table 42: R3Q1: Qualitative responses (executive leadership)

<p>I still believe that executive sponsorship and leadership is crucial to the success of the risk management discipline within an organization so that the RM process supports the strategy of the organization. I also feel a framework or model is necessary to keep the RM process organized, implemented and communicated and able to be transfers as staffing/department changes occur.</p>
<p>Although executives should certainly be engaged and demonstrate support for good risk management practices, their “30,000-foot” level of focus does not contemplate the “on the ground” practice of the management of risk.</p>
<p>Effective leadership will be successful in establishing a process with engagement, communication, feedback, input, as appropriate, from all levels. It is complex, but effective leadership is always the key together with a board that ensures that effective leadership is in place and is held accountable.</p>
<p>It is advisable that the people who are assigned to drive strategic risk practice are the ones who would be directly impacted if the risks manifest. They would be the most likely long-term champions.</p>
<p>I agree that senior management engagement is critical, and yes there can be some level of misunderstanding, as well as limited knowledge, that can create some difficulties in creating an overall culture of risk management within the organization.</p>
<p>I agree with the statement as getting executive sponsorship, as well as their understanding of risk management, is still evolving at many organizations.</p>

Source: developed for this study

From the broad examination of executive processes and promotion of the executive role in risk practice across this study, there are further considerations and comprehensions for the Delphi participants of both the role of executive and the importance of a strategic risk management stance.

b) Delphi R3: Question 2: (risk management and internal audit)

Q2: The agreement between Risk Management (RM) and Internal Audit (IA) is high. 60% of your responses agreed that they both work best in a mutual relationship. However, 30% of the panel agree that IA limits the RM processes by its control of risk practice and becoming a risk benchmarking provider. On reflection, can you agree with this statement?

The agreement between risk management and internal audit is high, (60%) of the Delphi participant responses showed that both parties work best in a mutual relationship. However (30%) of the panel agreed that internal audit limits risk management processes.

As has been shown in this study to date, the Delphi participants scores remain static with a 60% agreement on whether IA and RM work best in a mutual relationship, or whether there is a vested interest by IA to lead the risk management process. Some of the Delphi participants perceive influence existing within the internal audit function in the first instance. This indication clearly showed that some Delphi participants see risk management as a function of compliance and audit. Other Delphi participants suggested that internal audit and risk processes were seen as influential, which was also reinforced through the literature.

Table 43: R3 Q2 Qualitative responses (risk management & internal audit)

I'm surprised that only 60% of responses think that a mutual relationship between RM and IA is the most effective situation. I'd be interested to know, in the other 40% of cases, what they think a more effective relationship or arrangement looks like?
Risk programs must be very flexible and quick changing to be able to accommodate emerging risks and sudden changes in risk profiles. IA have never been known as flexible or quick changing, as a matter of fact, they often have vested interests in the status quo and a reliance on past audits and results.
At my institution, I lead the ERM function but meet with IA on a regular basis. The relationship is respectful and it's clear that there's no reporting relationship involved. Our Board Audit committee has indicated that IA should use the ERM report to help guide the annual audit plan, but there's no sense that one is subordinate to the other.
Risk compliance is not the same as risk management because the profile of risk can be dynamic and rapidly changing. Compliance is very much measured by degrees of following rules which were created in the past, for past circumstances and perhaps are no longer applicable to current circumstances. We should not assume rules are static, as the circumstances which resulted in their creation are not static.
The role of Internal Audit is to use the ERM report to assess where IA reviews need to be prioritized to assess the performance of the University in achieving its strategic goals, or in addressing the risks identified that may impact on the University's ability to reach their strategic objectives.

Source: developed for this study

c) Delphi R3: Question 3: (Strategic risk management)

Q3a): The issue of adopting a Strategic Risk Framework was agreed to by 75% of the Delphi Panel as a conduit for future thinking, keeping in mind that 25% of the Panel disagreed, citing past negative experience with ISO and other models. that inhibit flexibility. A Panel member suggestion that, 'with organisational maturity, its unique context, culture and industry can manage risk within its own frameworks,' is of interest. a). Should there be an alternative to the inflexible risk frameworks such as ISO? b) If a hybrid strategic risk model adaptable to each unique organisation was created, specifically designed as a knowledge, information and support mechanism, as opposed to an audit like approach, would it be more likely to be adopted by organisations?

Strategic risk practice was supported by 75% of Delphi participants in Round 2. This Round 3 question was posed asking for more detail on the implementation of a strategic risk management framework. In this round, (88%) of the Delphi participants agreed that a strategic risk framework was essential to manage change and essentially the framework needs to be organisation specific. Underpinning the responses on SRM and frameworks, the ISO is used by (50%) of the Delphi participants, the other Delphi participants manage organisations with internally developed frameworks.

One expert suggested that a strategic risk management framework was reflected only in a mature organisation, that is, as an indicator of organisational maturity. Another observation is that a framework is just that, a framework, and the business of the organisation must have autonomy from processes yet be guided by them. Strategic risk management (SRM) practice draws on foresight and strategic thinking as described across this study. SRM ensures clarity of practice, enabling the risk environment to reveal both immediate and future risk as described in the Literature Review. 100% of the Delphi participants agreed that 'prescriptive' risk frameworks were of little importance to the organisation. Instead, they agreed that the focus must be on flexibility, adaptation, organisation, and purpose according to the Delphi participants.

Table 44: R3 Q3a) Qualitative responses (strategic risk framework)

<p>With organisational maturity, its unique context culture and industry can manage risk within its own frameworks.</p>
<p>I do agree that “one size” rarely fits all and can often do more damage than good. It is a starting point, not a destination, and each organisation needs to find what works for them, and their culture, history, and attitudes regarding risk.</p> <p>One concept is to have a consistent starting place, an SRF is a good starting place, but should not be the destination. The final destination is to better manage risk and exploit opportunities, not to be fully compliant with the SRF. Have a framework concept but not be constrained by it. One size doesn't fit all. The framework should be diverse and is a starting point for risk practice.</p>
<p>I don't know that ISO is actually overly inflexible. The creation of our framework was a good starting point for rebooting our ERM process and lending it a new sense of legitimacy / purpose, which helped build interest and engagement.</p>
<p>Whatever process or framework we use for delivering RM has to work for the organisation in question, and this suggests some flexibility is needed. If risk discussions take place, and decisions are made on the basis of effective risk discussion then RM can be seen as useful.</p>
<p>We use the ISO standard as a guide but would never consider applying it as an official standard. For the University industry ISO standards provide little flexibility, which I believe this type of industry would find very challenging.</p>
<p>Yes, there should definitely be an alternative or alternatives to prescriptive risk frameworks (like ISO) whether they are flexible or not.</p>
<p>There should be a governing framework, but each institution must feel free to adapt the framework in their implementation to meet the culture and circumstances of the institution.</p>
<p>Yes, there can and should be a strategic risk model developed for each unique organization, and IA can and should still play an important and auxiliary role as described above. I have seen this work effectively.</p>
<p>There is no doubt that in higher education, we need to see institution specific initiatives in higher education. Each institution has a different “brand” and strategy for development, therefore a different set of risks</p>

Source: developed for this study

d) Delphi R3Q3b: Hybrid risk model

Q3b: b) If a hybrid strategic risk model adaptable to each unique organisation was developed, specifically designed as a knowledge, information, and support mechanism, as opposed to an audit like approach, would it be more likely to be adopted by organisations?

The Delphi panel agreed (100%) that adopting a strategic risk framework was a conduit for organisation/leader future thinking. Their comments included suggestions that a hybrid model would be useful and interesting and particularly a helpful tool compared with the current checkbox emphasis so evident across the sector. The Delphi participants' comments illustrated a strong interest (100%) in investigating a hybrid risk model for universities. There was also strong interest from the Delphi participants in the development of a new risk paradigm linking leadership, risk management practice and strategy.

Table 45: R3 Q3b) Qualitative responses (hybrid risk model)

<p>The downside is there is a “special snowflake” dimension to Australian higher Ed, the concept that few good ideas originate outside of the sector and no one can fully understand the needs of the individual institution, unless you are part of the system itself. Each university thinks they are different, and whether it’s true or not is irrelevant, it is their perception.</p>
<p>A hybrid model would be useful and interesting. A helpful tool compared with checkboxes.</p>
<p>An institutional specific initiative...a hybrid model might have traction.</p>
<p>Hybrid models are mandatory, so they look like a higher Ed specific solution to a higher ed specific problem. Employing an SRF which could work as well in a shoe factory as a university, is asking for failure and a lack of take-up.</p>
<p>I think any program that’s designed as a knowledge, information and support mechanism rather than an audit-like approach will be more likely to be adopted by an organisation. One sounds like a helpful tool that will add value, the other sounds like it will result in a “thou shalt” list of boxes to check.</p> <p>I’d still be interested in bringing a hybrid model like the one described above to our institution, or at least seeing how parts of it could be incorporated here.</p>
<p>I believe there can be an alternative framework but there definitely has to be some framework in order to operate effectively and manage change. Without a framework or other organized system, how does risk information flow within the organization and be passed along with any staff changes?</p>

Source: developed for this study

One expert suggests that there should be an alternative to prescriptive risk frameworks such as ISO whether they are flexible or not, and another that they agreed this would be positively accepted. There was a general agreement by the Delphi participants that there could be another consideration of a risk framework in the light of perhaps a hybrid framework.

Some of the Delphi participants agreed that there may be a need for a mix of frameworks suggesting that consultants, hybrid risk frameworks or part use of existing ISO and COSO frameworks were probably good enough. The ISO offers a range of capabilities within its structure which, if adopted, could transform to a strategic risk framework. However, although there was a 75% agreement by the Delphi participants

that the ISO was a positive risk framework, some Delphi participants chose to overlook the ISO's potential to transform to a strategic management practice.

100% of the Delphi panel suggested that it is critical for a challenge to previous risk models to take place. New understandings can enable alternatives rather than the current reliance on a fixed risk matrix focused practice. Additionally, a Delphi expert commented that it is sensible to have a framework concept but not be constrained by it. In general, the panel agreed (100%) that a risk framework should be diverse and a starting point for strategic risk management practice.

The research questions regarding risk frameworks in this study were important, particularly as there is no universal risk management model and for this study, no information to date of what risk management frameworks are used in the higher education sector. The purpose of this study is to uncover what risk management framework is used in universities. This will be addressed in the survey of university risk managers.

Additionally, there was substantial criticism in the literature describing the ineffectiveness of most general prescribed industry risk management standards in managing uncertainty and risk (Chapman and Ward, 2011; O'Shannassy, 2016; Petts *et al.*, 2001).

e) Delphi R3 Q4: Risk perception

Q4: There is 100% agreement that risk perception is a critical factor in risk management practice. Additionally, 60% of the Panel agree that social and cultural influences, including risk perception, are known to exist but are not acknowledged by executives citing this area as mostly unimportant.

a) In thinking about the issues brought up during this study, do you consider social and cultural influences could be more broadly accepted by executive and risk managers?

b) Is it important to increase individual and corporate knowledge of risk perception and particularly decision making, to be applied within the organisation's risk management practice?

c) Is it important to increase individual and corporate knowledge of risk perception and particularly decision making, to be applied within the organisation's risk management practice?

One of the Delphi participants stated that risk psychology was the future of the discipline. There was 100% agreement by the Delphi panel that understanding risk perception was critical in risk management practice. The Delphi participants showed 100% agreement on the importance of risk psychology, but the comments below show some judgment regarding a risk perception focus on risk management practice.

There has been agreement across the study to date that risk perception understandings were critical in risk management practice. This was strongly agreed to by 100% of the Delphi panel. These findings encompass risk communication and decision making within the overall category of risk psychology. Formal and informal risk communication was seen by the Delphi participants as important in that it underpinned the increase or reduction of impacts on decisions made.

Table 46: R3 Q4a Qualitative responses (risk perception)

<p>Of course, we are all limited by our perceptions of the day. In the beginning, most university executives examined the institution's experience but that their risk radars were somewhat faulty and resulted in an inaccurate perception of this risk at their institutions. Once the data, however, was released there was rapid acceptance and implementation, which were in no way hindered by preconceived notions or cultural bias. As a result, it is a little hard for me to accept a sweeping statement about how well Execs accept or consider social or cultural influences, sometimes it is their own fault they have blinders.</p>
<p>I believe this is inevitable. Risks are perceived very differently from country to country, challenging social and cultural norms. The differences between generations seem to be becoming more pronounced requiring us to understand the social differences between a millennial and a baby-boomer for example. As executives and risk managers, if we do not keep up with these perceived or real cultural or social influences, dealing with the risk will be an uphill struggle</p>

Source: developed for this study

Delphi R3 Q4b: (Social and cultural)

In Round 2 there was slight agreement by the Delphi participants on the importance of social and cultural elements in risk management practice. In this Round 3 question, the Delphi participants show much understanding for social and cultural perspectives and its core role in a strategic risk management practice.

Table 47: R3 Q4b Qualitative responses (Social and cultural)

In my experience, it isn't that social and cultural influences aren't acknowledged and accepted by executive and risk managers, it's that there's little willingness or ability to engage in changing those influences.
Culture has to be created across the whole organisation then therefore broad consultation is vital if you want the risk culture to be embedded across the whole organisation.
Social and cultural factors were considered critically important and were addressed accordingly. I don't see how there is any other way of approaching effective risk management, particularly in strategy development without consideration of culture, human behaviour, social factors, psychology of each individual, etc. I think some leaders have blinders, for number of reasons, and are only comfortable in dealing with hard data, quantifiable factors, and the so-called hard aspects of mission/vision/strategy/goals/measuring performance against goals and KPI's/etc. versus also dealing with the very important soft factors of culture/values/how we do business/etc.
Especially in institutions of higher education, cultural influences cannot and should not be ignored or minimized.

Source: developed for this study

f) Delphi R3: Question 5: Broad consultation

Q5a): There was 100% agreement on the criticality of the role of executive in contemporary leadership practice. A conflicting view, that executive should consult across silos and external stakeholders, received just 50% agreement. One of the views being that broad consultation can be a threat to executive, often limiting external input altogether. The other that broad consultation is a signpost to executive which create the fundamentals of a strong risk culture. A. Do you agree with either, or both views?

5b) In the context of building a strong risk culture, how can broad consultation be a motivator rather than a threat to the executive?

Broad consultation was a topic which received little interest in the earlier Delphi rounds, while there was rejection of the notion of consulting across silos in the early rounds, this question was revisited in Round 3 resulting in 100% agreement by the Delphi participants. In this Round 3 question, in the context of developing the organisation, the responses are detailed and relevant to the notion of the nexus between executive practice and strategic risk management practice. This question received a depth of response which indicated the Delphi participants had interest in broad consultation implications and issues.

A Delphi participant advised that,

“Universities have a 2000year history of being very consultative and collaborative, ...given our culture, I think you need to offer opportunities for consultation. Extensive consultation is a big risk to the sector, as we are seeing competitors of universities emerging. This slowness to change will seriously cost them one day, as more agile educators enter the market.”

The Delphi participants are cognisant of the broad issues between executive/leadership and risk management practice. 100% of the Delphi participants demonstrated that collaboration and consultation are critical components of a robust risk management practice, and particularly of strategic risk management practice. There were some general comments in the previous rounds that suggested executive can hinder risk management practice through unclear pathways, lack of understanding of risk ownership, and limited knowledge of the risk process. Further, one of the Delphi participants commented with a judgement suggesting their organisation had a way to go. The comment further detailed that the brief for executive to manage consultation and collaboration as a motivator to create a mature risk management environment was lacking.

The Delphi participants were in full agreement that broad consultation is a critical strategy. A summary agreement by the Delphi participants is that broad consultation is a signpost to excellent executive management.

Table 48: R3 Q5: Qualitative responses (broad consultation)

<p>I think that broad and external consultation would ideally happen and would benefit our ERM program, but it isn't something we widely do. If I hear about in institution that does do this, I consider it a marker of an ERM program that's more mature and advanced than our own.</p>
<p>Broad consultation can be a strong motivator in my opinion</p>
<p>This is an area in which my institution could stand to improve. I'm not sure that broad / external consultation is currently considered a threat by the executive, but there may be a sense that the resources required to conduct broad consultation may be great compared to the value received from that consultation</p>
<p>Broad consultation is a critical success factor. When I moved from the manufacturing sector to work at a university, someone said to me "Welcome to higher education, where no decision is too small study by for a committee."</p>
<p>Executive management cannot be cloistered. It needs to get out and around and consult more broadly---not indiscriminately but with those having "skin in the game". There needs to be differentiation between members of the company (management and employees), and outside stakeholders depending on the type of risk being assessed and whether there is joint accountability and responsibility, that is, in joint ventures, partnerships, joint activity in working with clients, outside communities, etc.</p>
<p>Risk conversations are NEVER wasted, and if done under the guise of consultation, so much the better. When any type of consultation becomes viewed as a threat to Execs, there is a serious problem. It is a matter of degree. The academics like to feel consulted and Execs like to make decisions. This is not a zero-sum game where one wins at the expense of the other. There is a correct balance, where both parties feel that the right "thing" occurred, but maybe not in the optimal timeframes.</p>
<p>Broad consultation is necessary to engage your community as a whole. Creating a risk culture takes time, but people within your organization need to see consistent and sustainable support from their executive levels and to follow their lead. Risk need to become part of everyday operations, but with the understanding of how that impacts progress on the organizations overall strategic plan.</p>

g) Delphi R3 Q6: Final panel comments

Q6: The most emphasised themes which emerged from Round 2 responses were: Executive function: executive leadership; culture; strategy; strategic thinking; foresight; decision making Risk Psychology: uncertainty; decision making; risk

perception; culture; social influence; Strategy: executive leadership; uncertainty; strategic thinking; foresight Risk management practice: risk frameworks/models; internal audit; best practice. Your final comments on these themes are critical to the construction of the survey (for risk managers).

The Delphi participants' spontaneous responses are included verbatim using the generality of Question 6 as a guideline on themes of executive, psychology, strategy, and risk management practice.

Table 49: R3 Q6 participants final comments

<p>I still believe that executive sponsorship and leadership is crucial to the success of the risk management discipline within an organization so that the RM process supports the strategy of the organization. I also feel a framework or model is necessary to keep the RM process organized, implemented and communicated.</p>
<p>Executive function: Your survey has caused me to rethink the importance of this role and how it is often cited as a support/barrier to the risk function. I rarely hear of Accounting complaining they do not have the ear of the executive, or they are somehow restricted in doing something important because of lack of executive support. I hear it often in risk circles. I am starting to think that complaints in Executive support are proportional to lack of risk professional creativity, communication ability, lack of critical thinking and poor skills in collaboration. The poorer the risk professional is in these critical skills the more important Executive support is to them feeling effective in their roles.</p> <p>Risk Psychology is the future of the discipline. Understanding why humans make the decisions they do is critical to better managing risk. This is a far cry from how current risk professionals spend their time or measure their performance.</p> <p>Strategy I suspect risk consideration will always be an after the fact part of the development of strategy in our sector. A box to be ticked once a strategic direction is selected.</p> <p>Risk Management Practice – a significant challenge to move the current discipline from governance and compliance to something which is relevant to operations across finance and operations (any maybe one day strategy as well).</p> <p>Creating a culture where an institution looks at its ISOs failures, stumbles, and mistakes is the largest contribution we could make to education at this time.</p>
<p>Certainly, executive leadership and buy in is essential to successfully embed risk management, as well as professional advice and guidance on developing risk frameworks and defining controls.</p>

<p>The role of the executive is critical in developing an overall risk culture as well as showing leadership. Universities will need to find a vehicle that best suits its needs in order to understand better the risks it faces as we move into the new future. One thing is for sure, the role of the risk manager is becoming more challenging by the day – and certainly we need a larger toolbox to be able to deal with them.</p>
<p>I do feel as a public company CEO with long experience internationally that it is extremely important for the CEO to set the tone, meet directly with IA, and those conducting risk activities, maintain oversight of the overall process, and to stay very engaged personally in showing a commitment, transparency (while maintaining confidentiality as appropriate), setting high standards and expectations, and demonstrating the utmost trust (integrity and competence together).</p>
<p>I think this survey and the Delphi method has confirmed and reinforced my perspective that the management of risk is an integral part of decision making at the operational AND executive level.</p>
<p>Risk psychology is the future of the discipline. Risk consideration within strategy will likely not play a leading role. Risk still sits within Governance and Compliance and may never reach Strategy. Focus on failures and reaching understandings is much more productive than ticking boxes. Universities are not big risk takers so the ideal risk culture may never develop.</p>

Source: developed for this study

The responses to Question 6 revealed the areas of most interest to the Delphi participants at the conclusion of this final Round 3 question. The Delphi participants articulated in-depth risk management processes such as executive leadership and relationships with strategic risk management, organisational strategy, strategic risk framework or hybrid risk model, strategic risk management dimensions, executive decision-making, governance and compliance issues and challenges in risk management practice, especially in creating a risk culture.

4.4.12 Delphi findings and key insights

The significant responses and insights emerging from the Delphi Round 3 represent the final alignment of the Delphi study, viewed through the study propositions and research questions. Key insights associated with the Delphi study overall illustrated on-going positive responses to executive/leadership, audit and compliance, and risk framework questions across the three Delphi rounds. Further, high-level associations emerged across the strategic risk management dimensions, encompassing horizon

scanning, rapid change, hybrid risk framework, risk perception, decision making, and broad consultation.

The Delphi participants were highly associated with each of the strategic risk management dimensions. There was high correlation with strategic foresight and horizon scanning and much support for action in a rapid change environment. The Delphi participants also showed strong support and interest in the development of a hybrid risk management framework. The most highly supported area in this study was that of risk perception with many positive comments from the Delphi participants, illustrating how important and necessary these understandings are to the Delphi participants.

Decision-making sits within the risk perception field and is accordingly strongly supported by the Delphi participants. It is a critical area of importance within the study. Broad consultation was not favoured by the Delphi participants in the early Delphi rounds, however, the question put to them in Round 3 initiated an extensive discussion about the purpose and necessity of having robust broad consultation across organisations.

The Delphi participants' insights were designed to carry over to the survey questions resulting in a narrative experience beyond this study. Across the Delphi study, the Delphi participants strongly supported the executive role in organisations. The Delphi participants outlined their organisation's current risk practice framework. Many had their frameworks designed by professional consultants to target specific organisational needs. Others used partially generic risk frameworks such as the ISO, COSO or what is commonly called Enterprise Risk Management (ERM) and used across the risk field, in many cases generated by professional groups who design generic risk frameworks, one size fits all.

4.4.13 Delphi Round 3: Conclusions

The Round 3 questions attracted a broad range of comments, evidence of frequencies and levels of agreement/ disagreement. This allowed the researcher to:

Confirm findings,

Identify significant frequencies requiring further consideration,

Identify emerging views and insights that require further consideration,

The Delphi research was the foundation methodology for this study, underpinning and directing the second research phase, the survey for the Australasian university risk

managers. Across the Delphi study, and particularly in this final Round 3, the Delphi participants agreed that there was a need for strategic risk management framework leading organisations into the future.

The insights for this round included executive/leadership criticality, contemporary risk practice, RM and IA limitations, strategic risk management practice, risk framework challenges, hybrid risk framework, risk psychology/risk perception, broad consultation, risk culture, and decision making. In this study, and this round particularly, the importance of executive/leadership to the organisation and the perceived lack of interest in the take-up of leadership actions, especially collaboration, broad consultation and communication across university campuses was sought. The Delphi participants indicated that leaders must have an effective understanding of beliefs, values, and practices within a workplace in the context of contemporary risk management practice.

The Delphi participants strongly agreed (88%) that a strategic risk framework was essential to manage change and the framework needs to be organisation specific. For further information, underpinning the responses on SRM and frameworks, the ISO is used by 50% of the Delphi participants, with the other Delphi participants managing organisations with internally developed frameworks.

The Delphi participants were strongly supportive of risk perception as a critical factor in strategic risk management practice. Individual and corporate knowledge of risk perception and decision making is indicated by full agreement (100%) of the Delphi participants. While the Delphi participants agreed the part risk perception plays in strategic risk practice is critical, there was also accompanying comment that the understanding and application of this is still to be developed in universities and many other organisations. The Delphi participants were also strongly in agreement with the strategic risk dimension of broad consultation in executive practice and risk culture being managed through organisations.

4.4.14 Discussion: Importance of the findings related to strategic risk management

This study was established to investigate the status of risk management practice in Australasian universities and whether there was an appetite for developing a strategic risk management practice as indicated in the literature and other research. It was proposed that further examination of criticalities in strategic risk practice may facilitate its scope and efficiency as a contemporary strategic risk management framework.

The key premise of the study was that Australasian universities generally practiced risk management from an audit and compliance perspective. The literature and other

research indicated a general research direction towards strategic risk management practice in organisations. On this basis and from the researcher's own knowledge insights, strategic risk management practice formed a core element within this study.

The Delphi study revealed support for a paradigm linking executive leadership, risk management practice and strategy which may represent opportunities for organisations moving towards strategic risk management practice. The Delphi participants agreed that adopting a strategic risk framework or hybrid risk model was a means to embrace organisational strategic thinking, foresight and risk perception/decision making. 100% of the Delphi panel suggested that it is critical for a challenge to previous risk models to take place. New understandings can enable alternatives rather than the current reliance on a fixed risk matrix focused practice. Additionally, a Delphi expert comments that it is sensible to have a framework concept but not to be constrained by it. In general, the panel agreed (100%) that a risk framework should be diverse and a starting point for strategic risk management practice.

The research questions regarding risk frameworks in the Delphi study were important, particularly as there is no universal risk management model and for this study, no information to date of what risk management framework is used in the higher education sector. One purpose of this study was to uncover what risk management framework is used in universities to be addressed in the survey of university risk managers. Additionally, there was substantial criticism in the literature describing the ineffectiveness of most general prescribed industry risk management standards in managing uncertainty and risk (Petts et al., 2001; Chapman and Ward, 2011; Johnson et al., 2007; O'Shannassy, 2016).

There was strong agreement by the Delphi participants supporting the criticality of the role of executive leadership in risk management practice. The Delphi participants agreed strongly (100%) that executive sponsorship and leadership of risk was most critical for organisations in reflecting the rapidly changing and expanding nature of risk, especially in an environment of increased uncertainty. The findings of the Delphi study indicated strongly that executive leaders should drive risk management practice and advocate for a strategic approach to risk management as a pragmatic practice (100%) across organisations.

The Delphi panel agreed (100%) that adopting a strategic risk framework was a conduit for organisation/leader future thinking. Their comments included suggestions that a hybrid model would be useful and interesting and particularly a helpful tool compared with the current checkbox emphasis so evident across the sector. The Delphi

participants' comments illustrated a strong interest (100%) in investigating a hybrid risk model for universities.

There was also strong interest from the Delphi participants in the development of a new risk paradigm linking leadership, risk management practice and strategy. Strategic risk management practice draws on foresight and strategic thinking as described across this study. Strategic risk management ensures clarity of practice, enabling the risk environment to reveal both immediate and future risk as described in the literature and other research. 100% of the Delphi participants agreed that 'prescriptive' risk frameworks were of little importance to their organisation. Instead, they agreed that the focus must be on flexibility, adaptation, organisation, and purpose according to the Delphi participants. Observing how the Delphi participants responded across a broad range of questions, there was significance in the Delphi participants' comments that strategic thinking and foresight enhanced executive strategic processes. The Delphi participants showed strong support that strategic thinking ensured clarity of thought enabling the risk environment to reveal both immediate and future risk.

Throughout this study strategic risk management 'dimensions' were evident in the Delphi participants' interpretations. Understandings from the dimensions were critical in providing impetus and knowledge to underpin the development of a strategic risk management exemplar into the future.

4.4.15 Discussion: Strategic risk logic

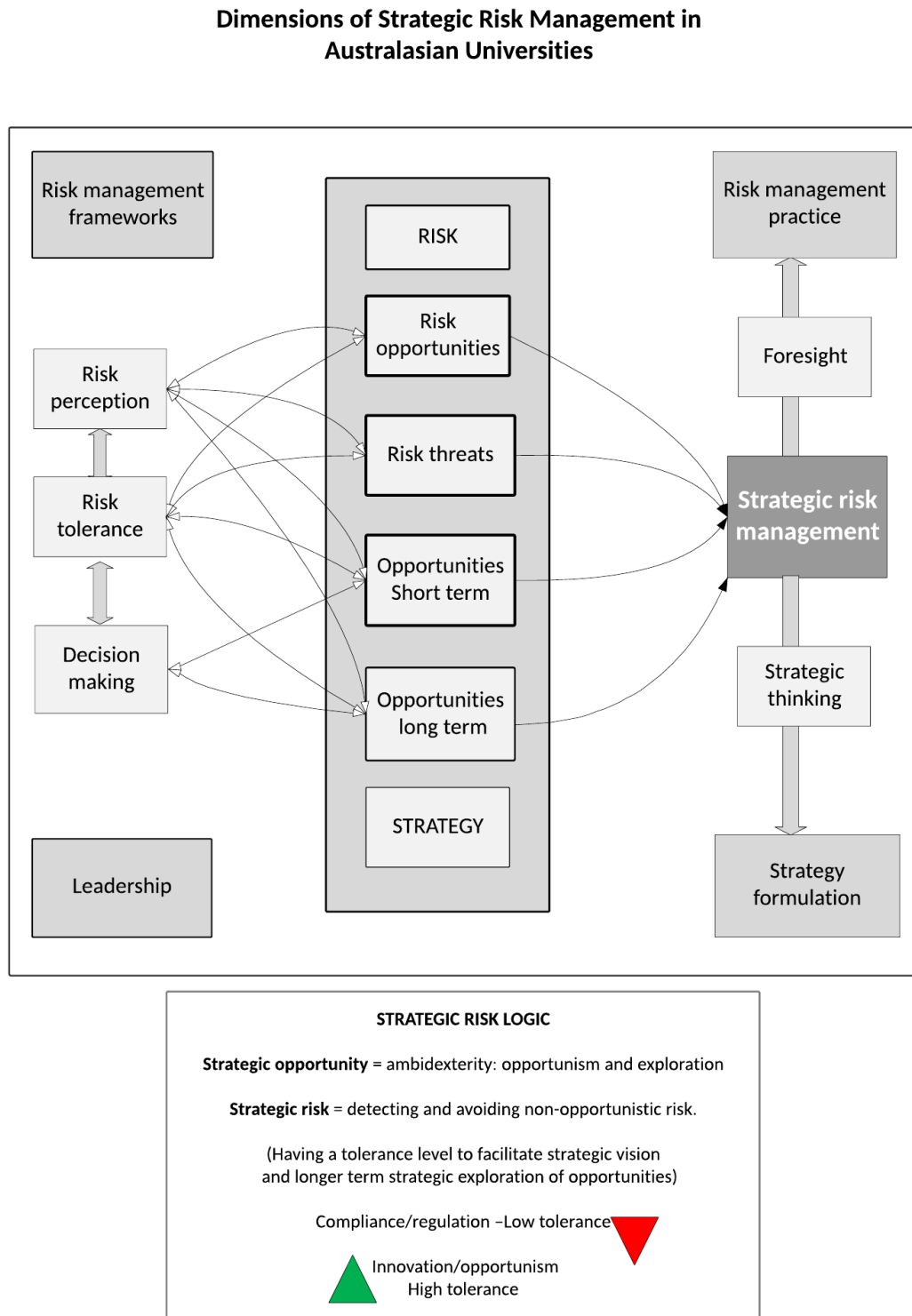
The strategic risk logic process diagram was initiated as a representation of the Delphi findings, informing the researcher's reasoning on key components of strategic risk management (SRM) practice. The key findings and outcomes from the Delphi panel including comments supporting strategic risk dimensions, suggesting that other strategic risk management learnings across the study can be represented by a prototype.

The model proposes that risk perception, risk tolerance and decision-making interact with strategic risk. Strategic opportunity is driven by existing tolerances and can enable or disrupt strategic risk practice. The importance of foresight should be recognised and specifically unlocks strategic thinking processes to assist the organisation in developing a Strategic Risk Management model.

This model frames the study, its thinking and current risk viewpoints as a high-level statement of the associated SRM concepts and dimensions.

4.4.16 Strategic Risk Logic Model

Figure 11 Strategic Risk Logic Model



Source: developed for this research

4.5 SURVEY INVESTIGATION

The survey sought to investigate to what extent Australasian risk management practice reflected the Strategic Risk Logic Model (Figure 11). AURIMS members were determined to provide a valid representative sample of the broader Australasian university risk management practice. The choice of a survey method in this stage of the design was justified in that survey methods are common strategies of enquiry that rely on statistical analysis as a way of increasing the validity and reliability of research findings (Creswell, 2009). Based on a review of the literature, validation thereof by the Delphi panel of practice, Delphi participants, and the identification of new insights associated with strategic risk management practice, the survey was administered to AURIMS members.

The risk managers were given an opportunity to examine and reflect on their university risk practice. The individual, organisational, and other items identified by the Delphi panel participants to be pertinent in the study of strategic risk management practice underpinned this survey development. Areas of greatest interest to the Delphi participants were executive leadership, audit and compliance, current risk practice/framework, strategic risk management practice and the strategic risk dimensions, (foresight, horizon scanning, rapid change, hybrid risk framework, risk perception, decision making, broad consultation).

4.5.1 Summary of implementation

The online anonymous survey was the quantitative component of the mixed methodology research (frequency and correlation). The object of this study was to discover the current risk management practice in Australasian universities. Further, this study sought to investigate how risk management practitioners from Australasian universities understood their environment, their practice approaches, and differences within risk practice in Australasian universities. The survey questions were developed based on the insights of the Delphi participants through the Delphi study findings. From the strategic risk dimensions, understandings, and new insights gained from the Delphi participants, the questions for the survey were formulated to investigate what current and future risk practice in Australian universities was revealed through the study.

The survey consisted of participants who were practicing risk managers. The survey participants were members of the Australasian University Risk and Insurance Management Society (AURIMS) industry group. The AURIMS members were invited to participate through self-selection, being notified of the study on the AURIMS website.

The survey was constructed within the USQ survey tool platform and was stored on the USQ servers. The survey link was sent to participants by email invitation. Responses were automatically coded and anonymous.

From the initial mail-out to 149 active AURIMS members, 81 survey responses were received. The researcher considered that with 54% of the risk managers' cohort opting to complete the survey, sample size was considered adequate. Within that member cohort, the final sample size was 41 ($n = 41$) as 49.3% of the group of 81 submitted incomplete responses. The raw survey data from the 41 complete responses ($n=41$) represented a 27% response rate which can be regarded as adequate. The data was prepared for use in SPSS to enable the descriptive and correlation analyses to be actioned. The survey questions are available in the Appendices. There were 81 questions set for the risk managers to complete.

The survey questions were generated from the Delphi findings indicating high associations between executive/leadership, audit and compliance, current risk practice/framework, strategic risk management practice and the strategic risk dimensions, (foresight, horizon scanning, rapid change, hybrid risk framework, risk perception, decision making, broad consultation),.

4.5.2 Data cleaning and screening

The data was cleaned and screened prior to further analysis taking place. This included identifying missing values and checking the data for normal distribution. A missing values analysis was conducted using SPSS. No missing values were detected since all incomplete cases were removed from the original data set.

The normality of the data was then checked by examining the Skewness and Kurtosis statistics from the descriptive data analysis. A visual examination for normality was also conducted using P-P plots. Both the statistics and the plot distributions were normal for all cases.

4.5.3 Frequency analysis

As part of the statistical analysis for the survey, the frequency results were indicated by a frequency percentage of individual responses to each question. Frequency tables are posted in the results below.

The adoption of the highest profile risk frameworks currently being used in Australasian universities was shown as: ISO (83%), ERM/COSO 24% and hybrid (5%). It could be that risk managers' current reliance on the ISO or ERM/COSO framework

indicates the need for a review of risk management guidelines. Further, the numbers of combined and hybrid risk models which are being incorporated into risk practice indicates lack of cohesion in terms of how risk management practice is applied across the Australasian universities' cohort.

4.5.4 Correlation analysis

A correlation analysis was implemented to enable the identification of relationships between survey items. The correlation analysis was used to enable a confirmation of relationships within the data. These relationships were illustrated in the findings showing indications of strong, weak and no associations, painting a picture of risk management practice in Australasian universities as experienced by the university risk managers.

Further, the correlation analysis measures whether an association between two question responses exists. Using Pearson's coefficients at confidence levels of 95% and 99%, the analysis indicates when two questions were regarded to be significant (positively or negatively). In other words, the analysis indicated a likelihood that both questions were strongly positively or negatively related to each other, called associations in this study.

Examining each interconnecting question revealed whether there was a significant association. This overview of results enabled the researcher to apply critical thinking to select the most indicative responses reflecting the overall enquiry of this research project, that is, what is happening within this overall body of data. These relationships show compelling illustrations of strong, weak and no associations, as well as outliers and other exceptions painting a picture of risk managers' views of risk management in practice.

4.6 SURVEY RESULTS

The survey as the second phase of the research design included a quantitative examination of risk management practice as experienced by Australasian university risk management practitioners. The questions for the survey were based on the Delphi findings and literature review items as confirmed by the Delphi panellists. The general description of the survey sections included demographic information, frequency analysis, and correlation analysis. The survey is shown in detail in Appendix L Title Survey Questions.

4.6.1 Survey demographic results

With the extensive spread of roles and responsibilities in the Australasian university risk management practice environment, there may be existing issues with some executive roles such as Chief Risk Officer (CRO) abilities and responsibility compared to that of a risk coordinator or risk officer. Roles and responsibilities may be worthy of a study in a larger cohort and perhaps support an investigation of the roles within risk management in Australasian universities in relation to existing risk frameworks and practices. The university risk managers (n=41) fall into the following risk management practice categories.

The descriptive statistics summarised the demographic characteristics of the participants in terms of frequencies. This was to allow the researcher to understand the sample in greater depth in terms of expertise and understanding risk management practice. Executive/senior management were represented by 35.2% of respondents. Risk managers were represented by 41.3% of participants and the 13.2% remaining were specialist and officer level staff.

Table 50: Frequencies (demographics)

<i>Respondent profile: Risk title and designation</i>	
Risk Partner (1) 2%	Risk manager (11) 27%
Chief Risk Officer (2) 5%	Risk Co-ordinator (3) 7.3%
Senior Advisor (5) 8.2%	Risk Analyst (1) 2%
Risk Counsel (1) 2%	Risk Liaison Officer (1) 2%
Director, Risk Management (5) 8.2%	Risk Officer (3) 7.3%
Associate Director Risk (4) 9.8%	Risk Consultant (1) 2%
Senior Risk Manager (2) 5%	PhD Student (1) 2%

Source: developed for this research

In total, 41 qualifying respondents were included in the survey (n=41). The demographic information in the online survey described job title designation in Australasian universities. As shown in Table 50, the designation of risk management practitioners in Australasian universities is diverse. To some degree, while the titles vary, the practice is the same, or similar. This suggests that the practice and recognition of risk management in Australasian universities show some degree of variability. Note, the participants will be referred to by the general title of ‘risk manager’ throughout the survey results.

4.6.2 Frequency results

The frequency results are shown as percentages of interest for each question identified by the risk managers. The questions are grouped into topics, executive leadership, risk management and internal audit, risk management frameworks, strategic risk management, and risk perception.

4.6.3 Executive leader engagement

The executive section of the survey relates to the function of executive leadership in relation to risk management as perceived by risk practitioners. The tables presented below show frequencies (%) of, perceived role of executive leader engagement in risk management practice, internal audit and risk management, risk management frameworks, risk framework components, strategic risk management, and risk perception.

Table 51: Frequency results (%): (Executive leadership)

EXECUTIVE LEADERSHIP (%)	Strongly Disagree	Disagree	Neither	Agree	Strongly agree
Executive sponsorship and leadership are the most critical areas for universities.	2	2	7	41	46
Executive involvement at all organisational levels critical	2	5	29	39	24
Executive is actively engaged in the risk management process	2	7	20	39	32
Executive hierarchy makes decisions difficult	0	15	24	37	24
Executive does not drive risk practice	10	27	34	20	10
Executive can hinder risk management processes through unclear pathways, lack of understanding and limited risk knowledge	0	20	10	41	29
Executive engagement with risk practitioners is slowly developing	2	7	7	71	12
A long-term risk champion is essential for risk success	0	10	17	37	37
Broad consultation should be a core executive focus	0	7	15	56	22
Executive should consult across internal silos and external stakeholders	0	2	5	63	29
External consultation serves as a marker as a mature organisation	2	17	24	39	17
It is necessary to engage the whole organisation in risk management understandings	0	10	7	40	41

Source: developed for this research

The risk managers strongly agreed that ‘executive engagement with risk practitioners is slowly developing’ (71%), ‘consulting across internal silos and external stakeholders’ (63%); ‘broad consultation should be a core executive focus’ (56%), and ‘engaging the whole organisation in risk management understandings (41%).

There is strong support for executive involvement at all levels across the organisation (46%); and support for ‘executive actively engaged in risk management’ (39%).

4.6.4 Risk management and internal audit

The Risk Management and Internal Audit section of the survey relates to the implementation of internal audit practice and how this may relate to risk management in Australasian universities.

Table 52: Frequency results (%): (Risk management & internal audit)

RISK MANAGEMENT and INTERNAL AUDIT (%)	Strongly Disagree	Disagree	Neither	Agree	Strongly agree
Embedding risk culture is an important early process	0	2	12	29	56
Risk Management and Internal Audit work best in a mutual relationship	0	2	10	34	54
IA limits RM processes by its oversight of risk practice	22	46	17	10	5
Each discipline (RM and IA) has a different role within the university	0	15	12	41	32
RM should be driven by executive	5	7	15	37	37
RM should have direct influence on university strategy	0	2	10	34	54
RM should manage uncertainty through strategic positioning	0	2	7	54	37
Risk management is a fluid practice	0	5	7	54	34
Internal audit is inflexible	24	37	24	12	2
Compliance is a static methodology	20	34	29	15	2

Source: developed for this research

The risk managers strongly agree (56%) ‘that embedding risk culture is an early process’ and also strongly agree that both risk management and internal audit work best in a mutual relationship (54%), and that ‘risk management should have direct influence on university strategy’ is strongly agreed (54%). The risk managers also agreed that ‘risk management and internal audit have different roles’ (41%); that ‘risk management should manage uncertainty through strategic positioning’ (54%), and that risk management ‘is a fluid process’ (54%).

4.6.5 Risk management frameworks

The adoption of the highest profile risk frameworks currently being used in Australasian universities was shown as: ISO (83%), ERM/COSO (24%), hybrid (5%).

Table 53: Risk management frameworks

RISK MANAGEMENT FRAMEWORKS (%)	No	Yes
Which risk framework do you use at your university? [ISO]	17	83
Which risk framework do you use at your university? [COSO]	76	24
Which risk framework do you use at your university? [SARF]	100	
Which risk framework do you use at your university? [None]	95	5
Which risk framework do you use at your university? [Other]	100	
Risk framework components (%)	No	Yes
What essential components should be included in a risk framework [principles]	10	90
What essential components should be included in a risk framework [framework]	17	83
What essential components should be included in a risk framework [processes]	24	76
What essential components should be included in a risk framework [organisation-wide process]	29	71
What essential components should be included in a risk framework [achievement of goals]	39	61
What essential components should be included in a risk framework [creative]	63	37
What essential components should be included in a risk framework [flexible]	29	71
What essential components should be included in a risk framework [value driven]	27	73
What essential components should be included in a risk framework [integral to internal processes]	34	66
What essential components should be included in a risk framework [addresses uncertainty]	39	61
What essential components should be included in a risk framework [part of decision making]	10	90
What essential components should be included in a risk framework [systematic and structured]	37	63
What essential components should be included in a risk framework [human and cultural impacts important]	34	66
What essential components should be included in a risk framework [applied in a strategic setting across the organisation]	17	83
What essential components should be included in a risk framework [provides surety to Executive]	54	46
What essential components should be included in a risk framework [defines RM effectiveness]	46	54
What essential components should be included in a risk framework [managed at every level of the organisation]	29	71
What essential components should be included in a risk framework [key concepts can be adapted]	27	73

Source: developed for this research

Of the risk framework components there were some strong responses from the risk managers; principles (90%), decision making (90%), in a strategic setting (83%), framework (83%), processes (76%), and organisational-wide process (71%). Further, value driven (73%) across every level of the organisation (71%) and key concepts can be adapted (73%), indicating that the risk managers have highly rated the importance of many of the strategic risk dimensions in their ideal risk management practice.

4.6.6 Strategic risk management

Strategic risk management showed strong support by the risk managers across a range of dimensions such as foresight, strategic thinking, and strategic positioning.

Table 54: Frequency results (%): (Strategic risk management)

STRATEGIC RISK MANAGEMENT (%)	Strongly Disagree	Disagree	Neither	Agree	Strongly agree
Adopting a Strategic Risk Framework (SRF) is a conduit for organisation/leader future thinking	0	0	12	63	24
Executive strategy processes would be enhanced by incorporating strategic risk management at this level	0	0	12	49	39
A future strategic risk framework will be necessary to manage uncertainty	0	0	27	44	29
Strategic positioning is critical in contemporary risk practice	0	2	10	54	34
The future will demand universities understand risk and uncertainty			5	34	61
Risk is still considered as having a lower level compliance type role	0	22	39	29	10
Strategy, foresight, strategic thinking and strategic practice are essential components of risk practice	0	5	2	41	51
Existing risk frameworks do not support a strategic risk management practice	12	32	24	24	7
A hybrid risk model may support strategic risk practice	0	2	37	41	20

Source: developed for this research

With the strategic risk management questions there is strong support for ‘the future will demand universities understand risk and uncertainty’ (61%), and that ‘strategy, foresight, strategic thinking and strategic practice are essential components of risk practice’ (51%).

The risk managers agreed that ‘adopting a strategic risk framework is a conduit for future thinking’ (63%), ‘that strategic positioning is critical in contemporary risk practice’ (54%), and ‘executive strategy processes would be enhanced by incorporating strategic risk management at this level (49%).

4.6.7 Risk perception

Risk perception has been taken up by the risk managers across its range of functions including psychological, formal, and informal communication, social and cultural influences, broad consultation, decision making, and cross organisational thinking.

Table 55: Frequency results (%): (Risk perception)

RISK PERCEPTION (%)	Strongly Disagree	Disagree	Neither	Agree	Strongly agree
The role of the risk manager is becoming more challenging	0	7	27	56	10
Broad consultation across all stakeholders is essential for contemporary risk practice	0	2	10	54	34
Sound risk decisions are tied to risk understandings, knowledge, and information across the organisation	0	2	7	44	46
Understanding risk perception is a critical factor in risk management practice	0	0	12	63	24
Individual perception of risk and its impacts is necessary in changing university environments	0	5	15	66	15
Social and cultural influences are important in risk understandings	0	0	12	63	24
Risk perception may be key to understanding how risk practice works	0	10	10	54	27
Understanding risk perception might make risk practice too broad	2	44	34	15	5
Social and cultural influences are known to exist but are not acknowledged by executives citing this area as mostly unimportant	7	20	46	22	5
Executives see risk perception as not essential in risk practice as it is difficult to quantify	5	17	44	24	10
Executive displays an unwillingness to change or have no strategy to implement risk perception issues	2	29	41	22	5

Psychological, social, institutional, and cultural influences should be taken into account in any risk management practice	0	2	5	59	34
It is important to increase individual and corporate knowledge of risk perception, particularly in decision making, to be applied within the organisation's risk management practice	0	0	7	59	34
Risk perception, including decision theory, should be incorporated into risk management practice to ensure progressive risk thinking	0	2	24	56	17
Risk management is an integral part of decision making across the university	0	17	15	39	29
Decisions can be influenced by a range of factors, including lay and expert thinking, personal beliefs, expert, and team viewpoints	0	2	2	59	37
Formal and informal communication plays a significant role in amplifying or diminishing the impact and analysis of risk	0	2	7	63	27
Understanding risk perception can accommodate cross organisation thinking and understanding	0	2	17	56	24
Knowledge of risk perception needs to be understood by all staff	0	15	32	44	10
Risk perception understandings are essential to advocate for risk management as a pragmatic practice across the organisation	0	5	15	66	15
Risk psychology is the future of risk as a discipline	0	20	49	22	10

Source: developed for this research

The risk managers support many of the risk perception questions. 'Risk perception understandings are essential to advocate for risk management as a pragmatic practice across the organisation' (66%), and 'individual perception of risk and its impacts is necessary in changing university environments' (66%) are the highest scores for risk perception. 'Social and cultural influences are important in risk understandings' (63%), 'formal and informal communication plays a significant role in amplifying or diminishing the impact and analysis of risk' (63%) and 'understanding risk perception is a critical factor in risk management practice (63%) are agreed by the risk managers to be important.

The risk managers agreed with 'it is important to increase individual and corporate knowledge of risk perception, particularly in decision making, to be applied within the organisation's risk management practice (59%), with 'decisions can be influenced by a range of factors, including lay and expert thinking, personal beliefs, expert, and team viewpoints' (59%), and with 'psychological, social, institutional, and cultural influences should be taken into account in any risk management practice' (59%).

With further agreement, frequencies include, 'risk perception, including decision theory, should be incorporated into risk management practice to ensure progressive risk thinking (56%), that 'the role of the risk manager is becoming more challenging' (56%), 'broad consultation across all stakeholders is essential for contemporary risk practice'(54%), as well as the 'importance of risk perception being the key to understanding risk practice' (54%), and that 'risk perception may be key to understanding how risk practice works' (54%) all show strong support by the risk managers.

Across the responses, the risk managers strongly support their executives engaged in the risk process across each university. In fact, another question supporting these findings and a key component of the study shows the risk managers indicate a need for risk management to be driven by executive, citing the need for a future risk practice.

4.6.8 Summary and discussion of frequency findings

The subjects listed below fall into topic areas supported by the risk managers through the survey. Executive leadership engagement, strategic risk management, risk culture, broad risk communication, risk perception, social and cultural influences, university risk strategy are included.

- *Executive leadership engagement*

The findings on executive leadership were broadly supported by the risk managers. The risk managers strongly maintained that executive had a role to play in risk management practice with a direct influence across their university.

- *Strategy*

The findings were agreed to across the spectrum of strategy components. Foresight, strategic thinking, and strategic practice are essential elements of risk practice, and followed by further elements of social and cultural influences, broad risk consultation importance, and formal and informal communication.

- *Risk perception critical*

The risk managers strongly supported risk perception in its many forms, including its importance as part of a strategic risk management practice.

- *Adopting a strategic risk framework*

The results for a new framework were positive and can be seen as a conduit for future thinking.

4.6.9 Conclusion

Of critical importance is to determine the need for the following initial phases to take place.

- Organisational capabilities including foresight and strategic thinking.
- Executive leadership engagement.
- Strategic approach to risk integrated into the organisation strategy processes.
- Risk perception understandings informing risk tolerances through decision making.
- Consultation and communication.

It is concluded that universities need to enable authenticity in their organisation by preparing innovative risk practices as presented in this thesis.

4.7 CORRELATION RESULTS

The survey was established using the subjects of executive/leadership, audit and compliance, risk frameworks, strategy/strategic risk management, risk perception/decision making. These areas had been explored by the Delphi panel and emerged as the core issues to be carried forward to the survey. Significant correlations were indicated at the 0.95 and 0.99 confidence levels.

4.7.1 Correlation findings

4.7.2 Executive leadership

The ‘executive leadership’ group of questions showed significant findings. Attention towards executive practice was evident throughout the correlation analysis with significant findings illustrated in the following Tables.

Table 56: Correlation findings (executive leadership)

Question detail	Pearson’s coefficient
Executive hierarchy makes decisions difficult correlates moderately to strongly with, each discipline (RM and IA) has a different role within the university	.668**
RM should manage uncertainty through strategic positioning associates moderately to strongly with executive sponsorship and leadership are the most critical areas for universities	.612**
Executive sponsorship and leadership most critical for universities relates moderately with formal and informal communication play a significant role in amplification or diminishing impact of risk analysis	.572**

Source: developed for this research

A significant relationship between executive hierarchy making decisions difficult and the different roles of risk management & internal audit (.668**) are two areas of importance to the study and one of the highest scored relationships in executive leadership. Another relationship between executive leadership and strategic positioning (.612**) being critical for universities indicates a significant association.

The finding that risk managers want executives to be engaged in the risk management process and to engage in formal and informal risk communication which

plays a significant role in the amplification and diminishing impact of risk analysis (.572**) is an important correlation in the study.

4.7.3 Internal audit and risk management

There are three associations illustrated below between risk management and internal audit which is important to the study. Each one of these associations indicated by a moderate to strong association illustrates the views of the risk managers in terms of the relationship between risk management, internal audit, and executive in the management of risk practice in Australasian universities. The risk managers indicate significant findings between the inflexibility of internal audit, the different roles of risk management and internal audit, and executive decision making. These findings are single outliers which indicate a specific response outside of specific groupings of responses.

Table 57: Correlation findings (Internal audit & risk management)

Question detail	Pearson's coefficient
IA is inflexible relates strongly with executive hierarchy makes decisions difficult	.683**
Executive hierarchy makes decisions difficult shows a strong association with RM and IA have different roles within the university.	.668**
Internal audit is inflexible associates moderately with IA limits RM processes by its oversight of risk practice	.595**

Source: developed for this research

4.7.4 Strategic risk management

The following questions were designed to allow the risk managers to express their views across the topics of strategic risk management. This group of responses showed significant findings in this strategic approach to risk management.

Table 58: Correlation findings (Strategic risk management)

Question detail	Pearson's coefficient
A future strategic risk framework will be necessary to manage uncertainty indicates a moderate to strong association with executive strategy processes would be enhanced by incorporating strategic risk management at this	.625**
A hybrid risk model may support strategic risk practice shows a moderate relationship with risk perception understandings are essential to advocate for risk management as a pragmatic practice across the organisation	.592**
A future strategic risk framework will be necessary to manage uncertainty indicates a moderate association with RM should have direct influence on university strategy	.583**
A future strategic risk framework will be necessary to manage uncertainty shows a moderate association with broad consultation should be a core executive focus	.567**
Managing uncertainty through strategic positioning shows a moderate relationship with executive involvement at all organisational levels is critical	.527**
RM should have direct influence on university strategy indicates a moderate association with managing uncertainty through strategic positioning	.515**

Source: developed for this research

Responses showed significant findings in a range of moderate to strong associations (.625**) including the moderate relationship between strategic risk framework and executive strategy processes. Further moderate associations include risk perception understandings and hybrid risk model (.592**), strategic risk management and risk management impact on university strategy (.583**), future strategic risk framework associates with broad consultation (.567**), strategic positioning and enhanced executive involvement (.527**); RM direct influence on university strategy relates moderately with strategic positioning (.515**).

4.7.5 Risk management

Table 59: Correlation findings (Risk management)

Question detail	Pearson's coefficient
<i>The question 'risk management should manage uncertainty through strategic positioning' was moderately associated with the 4 questions below:</i>	
Formal and informal communication play a significant role	.562**
Risk management as an integral part of decision making	.521**
Risk practice understandings are essential to advocate for risk management as a pragmatic practice	.521**
Risk practice can accommodate cross organisation thinking	.502**

Source: developed for this research

The group of questions displayed above show moderate association between strategic positioning and the intersecting questions. The significance of risk communication shows an association of (.562**), as an integral part of decision making (.521**), through risk practice understandings as a pragmatic practice (.521**), and through understanding risk practice and cross organisational thinking (.502**).

Research suggests that there is importance in identifying and analysing random single outliers in a study. In addition to the strategic risk framework outlier which correlates moderately to risk perception, there are five other outliers which are brought forward. They show significant findings which is important for this study.

4.7.6 Internal audit

Table 60: Correlation findings (Internal audit)

Question detail	Pearson's coefficient
1. IA is inflexible relates strongly with executive hierarchy makes decisions difficult	.683**
2. Executive hierarchy makes decisions difficult shows a strong association with RM and IA have different roles.	.668**
3. Executive sponsorship and leadership are the most critical areas for universities relates strongly to risk management should manage uncertainty through strategic positioning	.612**
4. Internal audit is inflexible associates moderately with IA limits RM processes by its oversight of risk practice	.595**
5. Executive can hinder risk management processes through unclear pathways, lack of understanding and limited risk knowledge has a moderate relationship with 'risk is still considered as having a lower level compliance type role'	.507**

Source: developed for this research

Outlier 1 has a moderate to strong association between internal audit and executive actions making decision making difficult. Outlier 2 also has a moderate to strong association between executive making decision difficult and the different roles between risk management and internal audit. Outlier 3 shows a moderate to strong association between executive sponsorship criticality with risk management of uncertainty through strategic positioning. Outliers 4 and 5 show moderate associations between internal audit and risk management as well as executive hindrance and risk compliance roles.

4.7.7 Risk frameworks

The choices of risk framework components were an important part of the study. The questions below displayed a range of dimensions for a risk framework construction, which was designed to encourage risk managers to familiarise themselves with the dimensions' components of a preferred risk framework.

Table 61: Correlation findings (Risk frameworks)

Question detail	Pearson's coefficient
The role of a risk framework (integral to internal processes) was considered having a strong association with the purpose of addressing uncertainty	.689**
As essential framework components – (human and cultural impacts important) showed a moderate to strong relationship with being integral to internal processes	.675**
Risk framework components enhanced by systematic and structured processes showed a moderate to strong association with addressing uncertainty	.638**
As essential framework components – human and cultural attained a moderate relationship with addressing uncertainty	.584**
What essential components should be included in a risk framework, human and cultural impacts important showed a moderate association with managing uncertainty through strategic positioning	.552**

Source: developed for this research

These findings are significant and show strong associations. Essential risk framework components were strongly associated with strategic risk dimensions such as human and cultural impacts (.675**), addressing uncertainty (.689**), and systematic and structured processes (.638**) showing that the risk managers included links to strategic risk management dimensions in the ideal framework. The questions about human and cultural with addressing uncertainty showed moderate associations.

4.7.8 Risk perception

The group of questions below indicate significant findings with the strongest scores in the study, sitting within the risk perception topic. Indeed, this group of questions illustrated below, contained the single strongest association with many questions associating with criticality in risk management practice and executive behaviour.

Table 62: Correlation findings (Risk perception)

Question detail	Pearson's coefficient
Executives saw risk perception as not essential in risk practice as it was difficult to quantify showed a strong relationship with social and cultural influences are known to exist but cited by executives as unimportant	.760**
Executive unwillingness to change or have no strategy to implement indicates a strong relationship with executives saw risk perception as not essential in risk practice as it was difficult to quantify	.695**
It is important to increase individual and corporate knowledge of risk perception, particularly in decision making, to be applied within the organisation's risk management practice associated strongly with understanding risk perception is a critical factor in risk management practice	.679**
Formal and informal communication plays a significant role in amplifying or diminishing the impact and analysis of risk associates strongly with understanding risk perception can accommodate cross organisation thinking and understanding.	.678**
The future will demand universities understand risk and uncertainty shows a strong relationship with understanding risk perception is a critical factor in risk management practice	.646**
Risk perception, including decision theory, should be incorporated into risk management practice to ensure progressive risk thinking shows a moderate association with risk perception may be key to understanding how risk practice works	.552**
Risk perception understandings are essential to advocate for risk management as a pragmatic practice across the organisation shows a moderate association with psychological, social, institutional, and cultural influences should be taken into account in any risk management practice	.502**

Source: developed for this research

The question, ‘that executives saw risk perception as not essential in risk practice as it was difficult to quantify with social and cultural influences are known to exist but cited by executives as unimportant’. The question indicated a strong relationship between the questions (.760**) and the strongest significant correlation in this study.

A further question regarding executive unwillingness to change with executives seeing risk perception as not essential in risk practice as it was difficult to quantify indicated a strong relationship of (.695**). The next 2 sets of questions are the remaining strong associations in this group. First, increased individual and corporate knowledge of risk perception, particularly in decision making with understanding risk perception is a critical factor in risk management practice (.679**) and formal and informal communication plays a significant role with understanding risk perception (.678**).

4.7.9 Risk communication

Table 63: Correlation findings (Risk communication)

Question detail	Pearson’s coefficient
Formal and informal communication plays a significant role in amplifying or diminishing the impact and analysis of risk associates strongly with understanding risk perception can accommodate cross organisation thinking and understanding	.678**
Formal and informal communication plays a significant role in risk management shows a moderate relationship with executive sponsorship and leadership are the most critical areas for universities	.572**

Source: developed for this research

There was a strong association between the role of formal and informal communication in amplification or diminishing impacts and understanding risk perception (.678**). This was a meaningful finding in that this question also had one of the highest individual numbers of responses (N=33/41 or 80.5%) by the risk managers. The subsequent finding shows a moderate association between communication and executive sponsorship criticality (.572**).

4.7.10 Correlation results: summary and discussion

The correlation findings showed significant results across a range of topics. Executive leadership, risk perception and decision making, social and cultural influences, risk communication, strategic risk management and risk dimensions such as

horizon scanning, and risk frameworks showed strong associations across the study and can be affirmed as key responses and an essential part of the group risk narrative.

The highest scored correlation was indicated by a strong association between the questions saying that executives saw risk perception as not essential in risk practice as it was difficult to quantify correlated highly and social and cultural influences are known to exist but cited by executives as unimportant. This was a finding which highlights the risk managers' views on the areas of executive practice which was not supported by them.

A further question regarding executive unwillingness to change with executives saw risk perception as not essential in risk practice as it was difficult to quantify indicated a strong association of (.695**). The next 2 sets of questions are the remaining strong associations. First, 'increased individual and corporate knowledge of risk perception, particularly in decision making with understanding risk perception is a critical factor in risk management practice' (.679**) and 'formal and informal communication plays a strong role with understanding risk perception' (.678**).

With a moderate to strong relationship between 'executive hierarchy making decisions difficult and the different roles of RM and IA' (.668**) identifies two areas of importance to the study and within the highest scored relationships. Another partnering of executive leadership and strategic positioning (.612**) indicates a moderate to strong association.

Showing the highest number of moderate to strong associations in risk frameworks and including a range of risk dimensions. Essential risk framework components were strongly associated with strategic risk dimensions such as addressing uncertainty (.689**), human and cultural impacts (.675**), systematic and structured processes (.638**) showing that the risk managers included links to strategic risk management dimensions in the ideal framework.

Further moderate associations include risk perception understandings and hybrid risk model (.592**), strategic positioning and human and cultural impacts (.562**), executive involvement (.527**), risk management impact on university strategy (.515**), foresight and strategic thinking (.515**), and enhanced executive criticality of strategic positioning (.503**). The management of uncertainty and risk through strategic positioning showed a moderate association with decision making (.562**). Further formal and informal communication played a significant role in risk

management (.521**) and risk practice understandings were essential to advocate for risk management as a pragmatic practice across the organisation (.502**).

‘Increased individual and corporate knowledge of risk perception, particularly in decision making with understanding risk perception is a critical factor in risk management practice’ and ‘formal and informal communication plays a strong role with understanding risk perception.’

The finding that risk managers want executives to be engaged in the risk management process and engage in formal and informal risk communication indicated a moderate relationship (.572**).

4.8 SURVEY AND CORRELATION INTERPRETATION

Survey and correlation interpretations showed many similar outcomes showing high frequencies and correlations in executive, strategic risk management, risk perception and broad communication. Signs of interest in both risk perception and the role of communication which had been identified, indicated a compatibility across the study.

The strongest topics included executive engagement, strategic risk management dimensions including systematic internal processes, risk communication, human and cultural impacts, and cross organisation thinking and understanding. In the first instance, questions regarding executive leadership were not wholly supported by the risk managers, in direct contrast to the positive support from the Delphi participants. University risk managers had a negative response towards executive practice which was evident throughout this survey phase of the study.

While the Delphi responses pointed out the qualities of executive leadership associated with effective risk management, the risk managers do not indicate strong relationships. There is evidence that overall, the risk managers have little tolerance with their executive. Supporting the need for the executive to drive risk management and advocate for risk management as a pragmatic practice across the organisation, both participant groups evidenced the criticality of the executive playing a leading role in all aspects of risk management practice including the importance of oversight of a robust individual framework which is fit for purpose.

4.8.1 Executive

While the Delphi responses pointed out the qualities of executive leadership associated with effective risk management, the risk managers do not indicate strong relationships. Supporting the need for the executive to drive risk management and advocate for risk management as a pragmatic practice across the organisation, both participant groups evidenced the criticality of the executive playing a leading role in all aspects of risk management practice including the importance of oversight of a robust individual framework which is fit for purpose.

There was also evidence of strong statistical significance that risk managers supported the actions of executive being engaged with strategic risk management. There was strong support for strategic risk management and decision-making. The existence of numerous risk frameworks and the current audit and compliance focus on risk

management practice, is an area of uncertainty in university risk practice. The risk managers indicated that strategy, foresight and strategic thinking, strategic positioning, and enhanced executive strategic processes are important components of strategic risk framework practice.

4.8.2 Audit and compliance

The risk managers indicate strong associations between the inflexibility of internal audit, the different roles of internal audit and risk management, and executive decision making. These findings are single outliers which indicates a specific response outside the group thinking of the risk managers.

Whilst the current university risk management support the views that internal audit is inflexible, that executive makes decisions difficult and that internal audit limits risk management practices through its oversight of risk practice.

4.8.3 Strategic risk management

The risk managers indicated that strategy, foresight and strategic thinking, strategic positioning, and enhanced executive strategic processes are important components of strategic risk framework practice. The risk managers' responses suggest strong associations with strategic risk management and evidence the issues with executive within their risk practice experiences. Further, investigation into strategy with a suggestion that the criticality of strategic positioning may enrich a different view of risk management practice and support risk management having direct influence on university strategy, may be a progressive risk management research exercise.

The risk managers' responses suggest strong associations with strategic risk management and evidence the issues with executive within their risk practice experiences. Further, investigation into strategy with a suggestion that the criticality of strategic positioning may enrich a different view of risk management practice and support risk management having direct influence on university strategy, may be a progressive risk management research exercise.

4.8.4 Risk perception/decision-making.

The risk managers showed strong support for risk perception issues including social and cultural influences and importantly for decision making which fall under its umbrella. The most significant finding of the study, 'that executives saw risk perception as not essential in risk practice as it was difficult to quantify' and 'social and cultural

influences are known to exist but cited by executives as unimportant' was an important question which the risk managers strongly supported. It is an area which would be of interest in a further study in the future.

A further question regarding 'executive unwillingness to change' again indicated significant findings which showed that the risk managers are aware of the importance of executive support in their university work. The risk managers' views across the survey spectrum showed strong support for risk perception and its importance as a unique and essential element in risk management practice.

In their responses, the risk managers showed support for perception issues and other social and cultural influences. The Delphi participants were also positive about the importance of both risk perception and decision making.

4.8.5 Risk frameworks

The risk managers indicated that they were working with standardised frameworks supplied by consultants (COSO, ERM) or the existing international standard (ISO). The risk managers responses indicated that having a risk framework was necessary, but no single risk framework was preferred by all. In fact, there was a response that anything is better than nothing, which perhaps showed the risk managers wanting a guideline to assist their practice rather than having a specific 'approved' or a 'standard' framework.

4.8.6 Summary of survey and correlation findings

- Executive leadership engagement: embedding risk culture an early process: risk management direct influence on university strategy: strategic positioning critical in contemporary risk practice.
- Strategy, foresight, strategic thinking, and strategic practice essential components of risk practice.
- Understanding risk perception critical: formal and informal communication: social and cultural influences: broad risk consultation.
- Adopting a strategic risk framework as a conduit for future thinking.
- Risk framework components principles, decision making, processes, value driven.

4.9 CONCLUSION

The leadership paradigms of the past could be further investigated to examine new understandings of what values, motivations and essence drives organisational leadership including the impacts on risk management practice. There exists an ambiguity in current risk discourse which brings the reality of the risk managers' practices to the forefront in this study.

It can be concluded that risk management practice in Australasian universities is lagging in terms of strategic risk management practice and that a holistic integrated approach is needed.

Chapter 5: Strategic Risk Management Framework

This Chapter introduces a framework for university strategic risk management by way of a study artefact. This study sought to make an original contribution to professional practice based on the development of an evidence-based artefact informed by the study's research outcomes. It was based on the premise that this practice-based research study would inform the development of a strategic risk management framework that would assist universities to transition from a predominant compliance/audit approach to a practice closer to a strategic risk management approach.

This chapter is presented in the following sequence:

- a) Introduction – Organisational strategy
- b) Key study findings
- c) Driving principles
- d) Strategic risk management pillars
- e) Guiding actions
- f) Strategic risk practice
- g) Strategic risk management transition framework
- h) Conclusion

5.1 INTRODUCTION - ORGANISATIONAL STRATEGY

Strategic risk management is a risk management approach that detects future vulnerabilities (hazards and risks) while expanding the scope of possibility (of possible futures) to inform an organisational vision based on an organisational mission or purpose.

Strategic risk management includes evaluating the risk perspective of the organisation while advising strategic thinking in the development of the strategic decision-making process which includes consideration of the extent to which the organisation wishes (or wants) to expose itself to risk.

Strategic risk management also includes the actions associated with executing operational strategies and their attendant risk as informed by strategic decision making. Based on this process, the strategic risk management value chain, as integrated with strategic planning proceed, as broadly communicated, through a strategic risk management framework.

5.1.1 Strategic risk practice

The study identified that strategic risk management practice be defined as a process which is enabled through a strategic interrogation of business operating environments to provide identification of both risk and opportunity.

An emergence of views from the study participants, supporting a broader strategic management approach, embracing a more agile, open system of risk management practice, is slowly gathering acceptance within organisations.

5.1.2 Strategy understandings

The study identified that the knowledge to create and sustain a strategic risk management practice is a core function towards building a risk practice and framework and must apply to the whole of the organisation.

The study provided evidence to support a strategic risk management approach in university risk management practice. While there is fundamental difficulty with the dominant orientation to audit and compliance in university risk management, this study suggests that the strategic risk management approach should be integrated across the elements of organisational strategy (foresight, strategic thinking, strategic decision making and strategic planning).

5.2 KEY STUDY FINDINGS

The study findings are key components in the development of the strategic risk framework and, as such, are described below. The study found that both participant groups agreed that executive leaders should be engaged with strategic risk management practice and that strategic risk components be linked to organisational strategy.

The study found that strategic risk management practice was of importance to both the Delphi participants and the Australasian universities' risk managers. Both participant groups agreed that executive leadership should be engaged with strategic risk management practice and that strategic risk principles be included in the risk process as informed by the organisational strategic intent.

Strategic risk management practice draws on foresight and strategic thinking. It ensures clarity of practice, enabling the risk environment to reveal both immediate and future risk.

5.2.1 Executive leadership

The study indicated that executive support and input was critical in a strategic risk management practice environment. Additionally, both participant groups agreed that it was important to develop a strategic risk management framework to meet the rapidly changing risk management environment apparent in the 21st century, and as such move away from an audit/compliance focus of current risk practice.

5.2.2 Governance

The study realized that governance was a key component linking executive leadership to all aspects of the business. In a strategic risk management process governance takes a futures-oriented perspective as integrated into the decision-making structures of an organisation.

The study found that current risk practice is typified by a largely static reporting-orientated governance approach. Rather than inform future direction, current risk management practice appears to report on exposure to risk and is populated by audit, compliance and related reports presented to executive levels of the organisation. These are seldom included in the strategy formulation governance structures. In a strategic risk management environment, the organisational governance structures and processes seek to incorporate risk management into strategy formulation based on driving principles, pillars, and guiding actions which embed a futures orientation to risk.

5.2.3 Foresight and strategic thinking.

The study indicated agreement that foresight and strategic thinking should inform and be informed by risk management. The study also illustrated support for adopting a futures action orientation such as active horizon scanning that makes the organisation more responsive to the rapidly changing operational environment.

5.2.4 Decision making and risk perception.

The study strongly endorsed risk perception and decision making as core functions of strategic decision making. Understanding how the different levels and structures of the organisation perceive risk was deemed to be an important aspect of executive leadership's engagement with risk management across different strategy dimensions.

In particular it was found by the study that executive leader decision making should be acutely aware of dominant social constructs, that is, the way meaning is constructed by the organisation and how value judgements are expressed within the operational environment and whether this is aligned with the overarching strategy and perception of risk.

5.2.5 Broad communication and consultation

Broad communication and consultation were strongly asserted to have a role across strategic risk management practice. Through the incorporation of both risk communication and consultation into the strategic risk practice, generating opinions, analysis, advice, and assessment are enabled. Broad communication ensures ideas, opinions, and feedback from all levels of the organisation are expressed, recognised and validated, and that there is a broad-based awareness of the risk management considerations and how they drive the direction of the organisation.

Both communication and consultation are important considerations for leaders to understand how beliefs, values and practices within a workplace are developed. More importantly, the study found that it was critical for leaders to understand how the impact of risk communication depends on a complex interaction between the characteristics of the audience, source of the message, strategic considerations, and its content. The study suggested that in the absence of meaningful participation and deliberation (consultation) and/or clarity and breadth of communication, strategic risk framework's efforts will be undermined.

5.2.6 Strategic risk management framework

The study found that developing a strategic risk framework was important in enabling and facilitating a strategic risk management approach. The study found that hybridized versions of risk management frameworks tailored to an organisation's needs provided guidelines for implementing a strategic risk management approach.

Such a framework was deemed necessary for indicating how, when, and where strategic risk management considerations should be regarded by executive leaders and the risk management practitioners. The framework also serves to permeate strategy conversations with risk considerations while enabling executive leaders' futures thinking within the context of managing risk. Futures thinking included the development of a new risk paradigm linking leadership, risk management practice and strategy into a single framework.

5.3 PRINCIPLES FOR DEVELOPING A STRATEGIC RISK MANAGEMENT FRAMEWORK

5.3.1 Vision

The vision of an organisation in its most basic terms reflects what an organisation wants to look like in the future. The vision represents a viable, aspirational, and engaging image of itself at a given time in the future.

The vision should be constructed from within a broad scope of possibility and represent a choice by the organisation of a desired future state, taking into account its available resources, risks and hazards, and ultimately what it will take to accomplish its purpose. The vision also informs the goals it needs to achieve and cumulatively realise the vision.

5.3.2 Purpose and goals

The organisational purpose is also referred to as its mission. The purpose of an organisation describes the reasons and rationale for why it exists. The purpose of an organisation is deemed, within a strategy context, to guide an organisation's activities with the reasons (or rules) of its existence as its primary concern. Both the vision and accomplishment of the purpose are underpinned by and aligned to the organisation's stated purpose (mission).

Strategic thinking is dynamic and cyclical and is informed by the outputs of foresight. The goals are usually associated with strategic thinking which is manifested

in the discourse and considerations of decision makers. Once a viable future vision is expressed, goals are formulated. The organisation develops what goals are needed to be in place in order to realize the vision. It is strategic thinking which seeks to determine this.

5.3.3 Operational strategies

The outputs of the strategic thinking dimension of strategy are the goals of the organisation as aligned to its purpose. The goals, as considered by executive leaders to be essential in achieving the vision as aligned to the purpose, then enters the decision-making dimension of strategy. The decision-making dimensions inform what operational strategies are required to achieve the goals of the organisation and are expressed through the choices the decision makers (executive leaders) are required to make. These include the allocation of resources, exposure to risk, competitive advantage and leveraging organisational capabilities.

It was proposed by the study findings that an audit and compliance focus can restrict the ability of leaders to engage with and include risk perception as part of their strategic decision making.

5.3.4 Operational management

To move from an audit and compliance risk management approach to a strategic risk paradigm, a hybridized operational management framework is required. This may include aspects of the generic frameworks such as the ISO, COSO or ERM but should be customised and tailored to the organisation's governance, strategic processes, and unique management needs. The framework should also be able to operationalize inputs into the strategy process as well as manage the identification and mitigation of risk.

Operational management includes controlling, organising, planning and executing operational plans. These include operational plans and objectives, budgets, strategic plans and the strategic risk management framework. These are all arguably linked to the strategy of the organisation, its dimensions, principles, pillars and guiding actions.

The guiding actions take into account knowledge management, planning, prioritizing, reporting, reviewing and evaluating to ensure the business focus of the framework captures the essential focus necessary for the development of a strategic and hybrid risk management framework (artefact).

5.3.5 Strategic risk management practice

Strategic risk management practice is defined as a risk management approach which is enabled through a strategic interrogation of business practice to provide the identification of both risk and opportunity to decision makers in terms of the formulation of organisational strategy.

Based on the study findings it is proposed that strategic risk management practice should be included across all the dimensions of organisational strategy formulation and planning (horizontal) and be integrated into the principles, pillars and guiding actions aspects of risk management practice (vertical). This is illustrated in Figure 12 below.

The distinctive practice of strategic risk management indicates the necessity to provide input into:

- foresight in enabling new perspectives and feasible possible futures, including the identification of associated hazards and risks in formulating a viable organisational vision,
- strategic thinking by informing the formulation of strategic goals aligned with the organisation's purpose in order to achieve its vision while taking its risk perceptions and tolerances into account,
- enhance risk perception understandings and risk tolerances within the scope of possible risks.
- decision making as a product of informing the formulation of operational priorities by considering the value judgements, meaning and analysis of options subject to resourcing of the organisation, and
- promote broad consultation and communication to ensure whole of organisation saturation.

5.3.6 Proposed University Strategic Risk Management Framework

The University Strategic Risk Management Framework model illustrated below (Figure 12), proposes that the strategy dimensions of foresight, strategic thinking, decision-making, and strategic planning should be perceived and integrated in terms of strategic risk.

The framework illustrates the principles, pillars and actions associated with implementing a strategic risk management approach within the contexts of the dimensions and stages of strategy formulation and planning. The framework suggests that risk management practice should permeate the governance of strategic decision making while promoting broad consultation and communication across the strategy dimensions. It presents an holistic view of risk management practice in contrast to the current practice of compartmentalized audit and compliance risk management practice which is mostly featured in isolation and within a reporting governance regime.

The University Strategic Risk Management Framework is an outcome of the study. It is an evidence-based artefact constructed from the insights gained from the research related to the study. The framework frames both executive perspectives (Delphi study) and current risk management viewpoints (university risk managers) as evidence of how the strategy dimensions of organisational strategic decision-making processes may overlap the principles, pillars, and actions of risk management and in so doing move away from an audit and compliance risk focus to one in which risk informs the consideration, formulation, decision making, and planning associated with university strategy.

5.3.7 University Strategic Risk Management Framework

Figure 12 University Strategic Risk Management Framework



Source: developed for this research

5.4 PILLARS SUPPORTING A STRATEGIC RISK MANAGEMENT FRAMEWORK

It is important in the initial stages of building this artefact to become familiar with the pillars of strategic risk management as they exemplify the capacities and boundaries associated with moving university risk practice from an audit and compliance focus to risk informing organisational strategy as part of the organisational governance structures. This requires current risk management practice to move from traditional operational and reporting functions to a process requiring greater integration into the strategy space, greater engagement by executive leadership and additional capabilities. In terms of the latter, the research outcomes strongly suggested that although there is an intuitive understanding that foresight, strategic thinking, and strategic decision making should be informed by detection of risk, perceptions of risk and risk tolerance, this seldom takes place and that a framework may help illustrate how the current risk management practice can be enhanced.

5.4.1 Foresight

The study sought to illustrate that the contemporary operational environments are increasingly discontinuous, and that audit and compliance focused risk management practice is becoming less adept at capturing such change and the risk associated with it. The study found that strategic risk management practice should draw on foresight and strategic thinking capabilities while informing these dimensions of the strategy formulation and planning stages of organisational strategy.

Foresight has as its primary purpose the development of understandings which can indicate how the future may evolve into a broader scope of possibility. It pursues the identification of weak signals and patterns of change to identify hazards and risks. Contemporary views of foresight have been developed by some organisations to ensure safety from disruptions in the operational environment using a foresight methods and processes.

Foresight adds another dimension of thinking to the consideration of risk management practice. It seeks to broaden the scope of possibility in terms of possible futures. Foresight does not seek to predict the future. Rather it seeks to broaden the scope of possibility, develop alternative possible futures, detect hazards and risks, what is most likely given the current reality, and how an entity's idealized design can fit into images of a preferred future taking the opportunities and risk into account.

5.4.2 Strategic thinking

A key insight gained from the research was that risk should feature within the strategic deliberations associated with formulating strategy. In particular, the research findings suggested that executive leaders should be more aware of and engaged with risk as an integral part of their strategic thinking. Strategic thinking is defined as a rational and generative thought process in the formulation and conceptualization of an organization's longer-term future direction and shorter-term strategic choices. Strategic thinking includes a rational synthesis of analysis and creativity in the context of both individual and group understandings.

The university risk practitioners noted that strategic thinking, by definition, should include risk considerations as part of being strategically ambidextrous (exploiting short term opportunities and exploring long term opportunities). Strategic thinking is informed by foresight what is possible and precedes and is reflected in strategy formulation and strategic decisions; it initiates decision making.

5.4.3 Decision making/Risk perception.

The research findings provided evidence that executive leadership has a critical role in the sponsorship and development of strategic risk management. This is not only in terms of supporting such a shift from traditional audit, compliance, and reporting models but also by including risk management considerations in strategic decision-making practice. In order to effectively enact these matters, it was suggested by university risk managers that executives must be aware of the varying perceptions of risk as they appear across the strategy dimensions (foresight, strategic thinking, decision making and strategic planning. elements. Essentially a combination of leadership awareness of social aspects of an organisation; noting ensuing dominant risk logic; understanding how the organisation constructs meaning; allowing a focus on innovation and creativity; and the promotion of effective knowledge management, are all within a strategic risk management position when related to decision making.

The study found that risk perception appeared to be inherently multidimensional and more context sensitive than once understood. In general, risk management practice calls for a value judgement to make an assessment or conclusion. Perception is influenced by demographic factors, personality profile, past-experience, personal or group ideology, and organisational culture.

There are two inherent processes which people use to perceive risks. Associative processes are based on internal feelings used to deliver an instant opinion or judgement, and cognitive processes which rely on a deliberate examination of facts before making a choice. Importantly, risk associations are made by people to interpret information and appraise risk to decide actions. As such, the relationship between risk perception and decision making and executive leadership were highly correlated in the results and suggest that a strategic risk management framework should reflect this statistically significant relationships.

5.4.4 Strategic planning

The study findings revealed a statistically significant correlation between risk management and strategic planning processes. This suggested that the two should be at least referring to each other but in a strategic risk management context should be integrated.

Strategic planning processes typically include the development of operational objectives, resource allocations, timeframes, operational plans and performance indicators. The framework maps out how the strategic risk management pillars as aligned to the principles are made up of guiding actions. From an operational and strategic planning perspective the planning represents the organisation's commitment to performing certain actions to achieve the vision, purpose, and goals by formulating and executing its operational strategies by achieving their plans.

According to the study findings a strategic risk management approach is enabled by consultation and communication across the different stages of strategy formulation and planning with the identification of risk featuring in strategy formulation while operationally reporting on and mitigating risk. This can only be achieved if certain guiding actions are implemented.

5.5 STRATEGIC RISK MANAGEMENT GUIDING ACTIONS

The research findings supported the integration of risk management principles with the strategy formulation and planning processes of an organisation. The principles were further organised in terms of risk management pillars and these in turn have been devolved in key risk management guiding actions that are associated with each pillar. The guiding actions were extracted from the results of both the executive leader (Delphi) and the risk manager (survey) perspectives. They provide details of the actions that are associated with implementing a strategic risk management approach.

5.5.1 Foresight

Key characteristics of foresight are that it is a process and capability that i) expands the scope of possibility (possible futures), ii) while detecting risks and hazards, iii) in developing an organisation's future-orientation. Foresight by its very definition suggests the inclusion of understanding the organisation's risk perception across the strategic risk management continuum.

The study confirmed, from a risk management perspective, that foresight serves to develop understandings of the future as its primary purpose. In order to achieve this, the organisation is required to:

- Develop and utilise foresight capabilities.
- Adopt foresight methods and processes.
- Continually exercise horizon scanning.
- Develop scenarios of possible organisational futures.

5.5.2 Strategic thinking

Key characteristics of strategic thinking include being intent focused, hypothesis driven, exercising intelligent opportunism, thinking in time, and adopting a systems perspective. Understanding an organisation's risk perceptions all inform these aspects of strategic thinking.

The research findings supported the notion that the study agreed strategic thinking includes both analytical and creative cognitions.

- **Intelligent opportunism**

Intelligent opportunism is a key characteristic of strategic thinking. The study found that it is overlooked by many executives, especially in the context of organisational risk aversion. Strategic thinking is closely linked to the way decision makers think and behave when confronted by opportunities but lack the agility and understanding of risk to enable the exploitation thereof.

5.5.3 Organisational thinking (intent focus, hypothesis driven and systems perspective)

Strategic thinking is linked to the way decision makers think and behave. Individuals can unintentionally influence risk outcomes which is a key component of this research study.

The study showed that there is a need to understand how organisational thinking can be influenced. This is captured by the systems perspective, hypothesis driven and intent focus dimensions of strategic thinking. A shared understanding can lead to oversight within the planning function, including the possible lack of critical reflection of risks by executive leaders.

- **Thinking in time**

Thinking in time characterizes a new risk environment which proposes to investigate the future in identifying risk, perceiving risk, and making risk informed strategic decisions. It includes a necessity to reflect on the importance of past practice references to ensure clarity of future pathways. It is statistically significantly associated with foresight suggesting that foresight outputs inform the future orientation of strategic thinking.

- **Conceptualization**

Strategic thinking requires a rational and generative thought processes in the formulation and conceptualization of an organization's longer-term future direction and shorter-term strategic choices.

5.5.4 Decision making /Risk perception.

Strategic decision making takes into account analysis of options, value judgements, heuristics, and social constructs in the formulation of strategy. Risk interacts with the psychological, cultural, and social processes within an organisation. Notions of risk perception, social constructs, risk tolerance and risk influences have been well documented.

Understanding decision theory is key to successfully managing risk. While not falling into the scope of this study, future research based on this study could investigate the decision-making aspect of formulating strategy and how decisions are made as informed by perceived risks. That said the study found that strategic decision making is reliant upon assumptions that emerge from strategic thinking and may or may not be

well-founded depending to what extent the strategy formulation process (including foresight) is executed and maintained.

- **Analysis of options**

In a strategic risk management framework, the analysis of options is important as it will direct actions towards a preferred future as represented by the organisation's vision and purpose (mission). This is achieved through futures knowledge creation, while detecting risks and hazards, and increasing awareness of possibilities.

From the anticipated futures and resultant strategic thinking, options do emerge which are informed by the availability of resources, perceptions of risk and aspirations of the organisations. These options then inform decision making.

The study indicated that effective understanding of beliefs, values and practices within a workplace are becoming an awareness that leaders may find impossible to overlook in modern day organisational practice, including how risk is communicated, perceived, and incorporated into strategy.

- **Heuristics**

As decision makers formulate key strategies, they exercise value judgements both personal and organisational. A subjective exercising of choice is informed by the meaning derived from the value judgements and form these perceptions and ultimately the decision taken.

Heuristics are simple and personal decision-making rules, (immediate response), comparison with another, or emotional reaction). It is important to note, from a risk practice perspective, heuristics can lead to differing interpretations and decision outcomes due to limited or conflicting information as the initial impetus for the decision maker.

- **Social constructs**

The study confirmed that an important component of strategic decision-making revealed that social constructs can impact decision outcomes. Decision-makers often intuitively have their decisions influenced by the social contexts within which they operate, and the internal organisational culture associated with how socialization occurs.

The social constructs are influenced by how risk is perceived and processed and may differ extensively from other operational environments depending on the social

contexts. There is a significance for leaders to understand how beliefs, values and practices within a workplace are developed and the links between socialisation and decision-making.

5.5.5 Strategic planning

Strategic planning includes the development of operational objectives, strategic plan, and strategic risk management framework. Guiding actions in a strategic risk management context focus on planning, prioritizing, reporting, reviewing, and evaluating. These are the building blocks of the framework, overseeing the actions and incorporating communication, consultation, and strategic risk practice across the planning function.

Strategic planning's value is to examine interactions between the actors across an organisation and externally to enable and constrain future uncertainty.

- **Broad communication and consultation**

The study findings indicated that the impact of risk communication depends on a complex interaction between the characteristics of the audience, source of the message, and its content. Different risk management paradigms can result in a broad variation of practice. The implications of this variability are that the way in which risk identification processes and risk communication differs also yields multiple variations in the message itself which impact on risk decisions.

As part of this new strategic risk management scope of influence, the study indicated strong support that a more comprehensive communication and consultation practice across the university is necessary. A strategic risk management framework suggests that broad communication and consultation is critical across all areas of the strategy formulation and planning stages and should be led by executive.

5.6 CONCLUSION

The study sought to develop an understanding of current risk practice in Australasian universities (university risk practitioners) within the context of expert executive viewpoints associated with what a strategic risk management approach may look like (Delphi). Based on the research findings the study developed a strategic risk management framework for universities. The framework sought to integrate the dominant audit and compliance risk practice in universities with strategic risk practice

across the core areas of foresight, strategic thinking, strategic decision making and strategic planning.

The most compelling results from the analysis suggested that executive leaders should drive strategic risk management as a part of the strategy considerations and advocate broad consultation and communication across the university. The study evidenced the criticality of executive leadership playing a leading role in all aspects of risk management practice and, with that, the importance of oversight of a strategic risk management framework with a futures orientation.

Chapter 6: Conclusion

The key purpose of this research was to investigate the state of risk management practice in Australasian universities and identify findings which address the research gap while providing sufficient evidence to justify the development of a strategic risk management framework.

This Chapter incorporates sub-headings below:

- Discussion
- Key findings
- Review of the research questions
- Research summation
- Limitations of this research
- Contribution to knowledge
- Meaning and importance of the findings
- Conclusion

6.1 DISCUSSION

This study sought to investigate current risk management practice in Australasian universities to understand how such practice reflected risk management viewpoints related to the study. The goal of the study was to explore risk management practice in Australasian universities through a strategy of enquiry aimed at exploring the experiences and influences affecting individual risk managers and how this compares to a strategic risk management perspective as expounded by the literature and practice experts who are executive leaders and familiar with risk management of large institutions. As such the study sought to contribute to professional practice knowledge of the higher education risk management field by developing an evidence-based study artefact that informs such practice.

The principal researcher presents as a risk practitioner in the higher education sector. The researcher identified an emerging inconsistency between the characteristics and components of risk management frameworks utilised in Australasian universities, indicating a situation worth investigation. The study was further underpinned by the notion that the risk environment in Australasian universities was ambiguous, inconsistent across with executive practice, compliance influenced, and unknown risk practices being dominant themes.

The key findings were obtained from an exploratory sequential mixed methods research design located in the pragmatic paradigm. The two data collection methods were a Delphi study and online survey. The findings followed the theme trajectories focused on from the Delphi study responses and informed the development of the survey questions. The Delphi and survey findings were triangulated and assimilated and was the basis upon which the strategic risk management framework as illustrated in Chapter 5 was developed. The strategic risk management framework reflected the participants' knowledge and opinions and informed the development of the framework's driving principles, pillars, and guiding actions, under an organisational strategy driven by executive leadership and organisational governance.

6.2 REVIEW OF KEY FINDINGS

In summary, the research findings suggested that risk management at universities was audit and compliance focused. The findings suggested that in order to shift toward a strategic risk management approach to risk management, the following were confirmed as significant: the need for executive leadership capabilities and active engagement in risk; the dimensions of strategy formulation and planning be reflected in

the institution's risk management processes; understanding the risk perceptions of the organisation and, a hybrid risk management framework to guide the risk management processes and actions is necessary.

The key findings of the research include:

- That executive leadership risk management knowledge and engagement is necessary for embedding a strategic risk management approach; through leadership engagement risk management must have a direct influence on university strategy formulation and planning; and, strategic positioning is a critical function of contemporary risk management practice. The research strongly indicated that a new risk management paradigm driven by executive leaders is needed to navigate rapid and non-linear change while providing valuable strategic cues to the organisation.
- That the executive leadership paradigms formed prior to 2010 have become increasingly redundant and are required to be enhanced with new understandings of what values, motivations and principles and risks drive organisational direction with risk management being integrated into organisational governance structures and decision-making processes.
- That the dimensions of strategy formulation and planning should incorporate risk management practice. Risk management should be more dynamic and be reflected across the strategy dimensions.
- That understanding and interpreting an organisation's risk perception was deemed a critical component of strategic risk management practice. Risk perception was statistically significant in its associations with communication, consultation, and social and cultural influences. The study found that risk perception was a critical factor in strategic risk management practice yet, to date, understanding and application of this is still to be developed in universities.
- The study noted that the ISO, COSO and ERM risk management frameworks influenced risk management practice and that together with university-specific governance structures formed hybrid versions of the frameworks which strongly influencing practice.
- That most universities have hybrid forms of risk management frameworks which are focused on audit, compliance, and monitoring functions within the university. Further, the participants across both methods largely agreed that a

framework linking executive leadership, risk management practice and strategy were needed to move toward a strategic risk management focus.

6.3 REVIEW OF THE RESEARCH QUESTIONS AGAINST THE FINDINGS

6.3.1 Research Question 1

Q1 What is current risk management practice in Australasian universities?

The study confirmed that there was a clear indication from a review of the literature, discussions with colleagues, attendance at international higher education risk conferences and workshops, that there was no existing information describing current risk management practice in Australasian universities.

Current risk management practitioners in universities confirmed that the dominant risk management approach in their practice had an audit, compliance, risk identification and reporting focus. The universities mostly used variants of the ISO risk management framework with elements of the COSO and ERM framework also being used. These hybrid frameworks were mostly adapted to fulfil a risk identification and reporting function informing risk mitigation measures.

The study revealed that there was a disconnect between current risk management practice and strategic risk management practice. One explanation was that Australasian universities do not favour changing their current risk practice due to i) being comfortable with the ISO framework used by 83% of risk managers, or ii) that the framework currently in use has been promoted by audit- and compliance- focused international consultancies which also providing audit services.

6.3.2 Research question 2

Q2 How does current risk management practice interpret strategic risk management?

Whilst Question 1 indicated that current risk management practice in Australasian universities is predominantly informed by a hybrid model consisting of the ISO framework, it is usually supplemented by the COSO, and ERM frameworks. These are often further tailored according to university-specific needs into hybridized frameworks.

Despite the apparent flexibility this hybridization implies, the university risk management practitioners did not interpret that current frameworks enabled a strategic

risk management approach. However, they did acknowledge that the ISO framework was underpinned by principles that support a strategic risk management approach.

The findings also indicated that the university risk practitioners were aware of the role and benefits of adopting a strategic risk management approach. They recognized the benefits and relevance of a futures orientation associated with risk but felt that this needed to be enabled by executive leaders to convert into practice.

The findings supported risk communication as a function of strategic risk practice. In action, current risk communication influences the amplification or diminution of risk and is likely to be found in existing risk roles as part of the ‘scoring’ of amplified or diminished risks. However, the risk management practitioners recognised that broad-based consultation and communication of risk management outcomes was necessarily implied by a strategic risk management approach and was largely not the case in current practice.

The risk practitioners indicated support for a SRM approach which would not only add value to the broader outlook and direction of the organisation but incorporate risk in the formulation of strategy.

6.3.3 Research question 3

Q3 How does current risk management practice in Australasian universities differ from a Strategic Risk Management (SRM) approach as reported in the literature and through expert opinion?

Current risk management processes reflect past audit and compliance driven risk management practice as revealed in the literature, expert opinion, and through this research. Prominent risk frameworks currently used in practice include the ISO (most prevalent), COSO, and ERM frameworks or a hybrid framework adjusted according to the needs of the organisation. The risk management practitioners broadly described their risk practice as a closed risk management system.

The evidence also suggested that current risk practice operated in a context of seeking to identify, classify, report, and consider the mitigation of all risk. It largely reflected organisations that had a low-risk appetite while being compliance driven and risk averse. Reference was made to the regulatory environment and funding models as being compliance orientated and as such function in a static state. The respondents from both the Delphi (executives) and survey (risk practitioners) agreed that this institutional

orientation leads to lower levels of innovation and a lack of agility. In this position, universities may be unable to realise their mission. The respondents strongly agreed that an organisation with a strategic risk orientation is more likely to illustrate greater risk tolerances and the strategic value of risk as associated with opportunities.

Strategic risk management emerged from the literature as a contemporary and relevant risk management practice, the benefits of which were strongly supported by the study. There was evidence that a strategic risk management approach was difficult to establish due to regulatory, advisory, and executive leaders' pressures to maintain current risk management paradigms and practice. This was largely influenced by the public nature of the institutions and the need, not only to meet regulatory requirements but also be accountable thus reducing the ability to accept risks in favour of advantage and opportunity.

6.4 LIMITATIONS OF THIS RESEARCH

The aim of this work-based research study was to rigorously explore the practice of Australasian university risk management. The outcome of the study was the development of an evidence-based framework to assist practitioners and leaders in enabling a shift from the dominant audit, compliance, and reporting focus of risk management to a strategic risk management approach.

It is suggested that based on the data collected relating to executive leadership (Delphi study), and university risk managers (survey) perceptions, the evidence informing the development of the framework is compelling. Nonetheless, these results must be interpreted with caution and some limitations should be borne in mind. It is an important function in the execution of a research study to identify limitations of the study which indicates that the researcher understands the constraints of the study and the ability to both recognise the limitations and show an ability to work within them.

The primary limitation relates to the contribution to theory. While the scope and aims of the study included addressing the gap in the literature related to strategic risk management practice in universities, there was insufficient evidence to propose a generalisation of findings which cannot be claimed. As such, while the study is justifiably exploratory, further research is required to confirm the insights as justification of theoretical advancement.

Constraints on research design or methodology can be a limitation. It was important that the researcher planned the research design with consideration to avoid

ending with a weak methodology and unable to execute a robust research examination. Setting achievable goals in the first instance ensures, through the development of a research paradigm, objectives, propositions, research questions, and the uniqueness of study populations, that this study originates from sound procedural perspectives including managing the study boundaries, hence mitigating limitations to some degree. Despite the methodological rigor associated with a mixed methods study design, there were limitations associated with sample population and size.

An area of the study which caused the researcher concern was the reality of having such a small sample size for both research participant groups. The requirements for participants were chosen by the researcher to be appropriate and rigorous for the study as there was a need to have both executives as practice experts, for the Delphi panel group and working risk managers from Australasian universities in order to provide both legitimate data and interest in the subject matter of the study.

The Delphi phase has a traditionally low number of participants (8 - 11) which is acceptable for a Delphi study. The purpose of a qualitative study is to generate rich data which is proposed to have been achieved. However, the assumption that senior executives of large corporates are experts in risk management and specifically strategic risk management is vulnerable to criticism. Even though the Delphi panel included participants that either had a higher degree qualification or were academics, did not automatically qualify them as experts. It was considered that on a balance the executives would at a minimum be practice experts and understand how risk management practice is applied and how a strategic risk management framework may operate.

For the risk manager cohort responding to the survey, the number of complete responses were relatively low (n=41). This was due to limiting the invitation to participate only to AURIMS members. This group generated 81 consenting participants but only 50% of that group completed a full survey. It is estimated that the response represented at least 10% of the population but was not adequate to conduct more advanced statistical analyses. The analysis was therefore limited to descriptive statistics and correlation analysis which, when combined with the Delphi study still represents defensible exploratory research. It also meets the needs of the pragmatic approach of the research and provides empirical findings that can inform future research.

The researcher notes that another limitation is that of the role of an insider researcher. It can be noted that an insider researcher (IR) has distinctive challenges by the very nature of being an expert working within an organisation (Costley, Elliott and

Gibbs, 2014; West *et al.*, 2013; Workman, 2007). The researcher must be mindful of issues which may impact the research such as biases, which can be managed through specific personal limitations being set by the researcher. These may have influenced the analysis of especially the qualitative data analysis in the study. This was partly addressed by expanding the research design to include a quantitative survey to validate the findings of the Delphi study.

Having insider knowledge allows the researcher to have access to colleagues' attitudes and viewpoints. This is the strength of insider research but requires astute controls for bias. This includes that the researcher can understand and recognize inherent bias due to having functioned in university risk management roles previously.

(West *et al.*, 2013, p 64) states that,

“I recognize that the role of the researcher is complicated and understand that when we are working in the field, we have little to guide us. The researcher takes on a role that allows them to distance themselves when appropriate even though they may have intimate insider knowledge of the phenomenon under study.”

As such, this study acknowledged that, with the limitations there may be an obstacle in validating and generalising the findings. This is important, because both assumptions and limitations affect the inferences which can be drawn from the study. It must be acknowledged however that this research study is an exploratory study and hence does not necessarily require generalisability of the findings. The purpose of this type of study is to perform an examination of the research problem and report on insights. A further larger size study would be necessary to investigate and possibly validate the findings.

6.5 RESEARCH SUMMATION

The study began with a focus to illustrate the gap between current risk management practice in Australasian universities and the emerging notion of strategic risk management practice.

The study explored the two divergent approaches to risk management practice, i) the predominantly audit, compliance and reporting focus on risk, and ii) strategic risk management practice. The study first established what frameworks and approaches typify an audit and compliance focused risk management strategy. This was achieved through a review of the literature and the responses from current university risk

practitioners. The study then determined what constituted a strategic risk management approach, its dimensions and necessary practice from the literature, executive leader expert opinions (Delphi study) and the responses of risk management practitioners (survey). The study then compared current practice from an idealized strategic risk management practice. From the findings, the study developed an artefact. The study artefact was an evidence based strategic risk management framework which was developed in order to make an original knowledge contribution to professional practice in university risk management.

The researcher was satisfied that the purpose of conducting the research project including examination of the relevant literature, relationship between concepts, the study aims, objectives and propositions, execution of a rigorous research design, answering of research questions and the development of the strategic risk management framework was fulfilled.

6.6 PRACTITIONER REFLECTIONS

(Written in the first person)

6.6.1 Contributions to personal development

Participation in this Doctoral study has enabled me to develop a greater awareness of both my interest and understanding of my professional expertise in risk management practice in higher education, and by default a broader knowledge of the sector across industries through membership of international risk associations and associations with risk management individuals.

The literature on workplace learning explains that many benefits ensue from practicing learning within the workplace, in particular, a greater awareness of the workplace and its issues. Gregory (1994, p42) refers to a 'reflective practitioner model of professional development' where the learning becomes a social action to enable and encourage the practitioner to improve practice through empowerment. Garnett (2000) suggests that the learner has an opportunity to plan their own learning making it relevant and becomes an intrinsic part of the overall learning. Further, the access to privileged knowledge allows the worker to embrace the knowledge specifically and acknowledge its existence, championed by authors such as Workman, (2007) who suggests that the role be called the Insider Researcher (IR). Workman, (2007) notes the role of a workplace observer is largely not understood and yet it is a role of great importance in an organisation.

My values and beliefs played a significant role in enabling my personal development as an insider researcher and managing existing and new relationships during the five years of managing this research. As Workman, (2007 p 147) further suggests, an analytical framework would enable the workplace learning to anticipate major issues within this approach to research. Such a framework may have ameliorated the situation for the researcher in those initial planning stages. Reflective learning has been important to revisit during this Doctoral study. It is interesting to discover Gregory (1994) suggesting that there is an evaluative growth developed within each innate experience. Gregory's teachings resonated very much with my experiences to date. I practiced many of the elements of DPRS pedagogy in the workplace, particularly action learning, reflection, and work-based enquiry.

In the light of Workman's alerts for insider researchers (IR) critical judgment is an area which I saw the need to develop across the period of the study. I analysed many theories, papers, and reports as well as a variety of opinions over the period of this study. With the important contributions from Workman (2007) and others I learnt that information management is an essential part of this study where delimiting is as valid a practice as is collecting too much and too widely sourced material.

I developed the ability to learn analytical methodologies. My experience in data analysis was not extensive and I engaged in new learnings to overcome this issue. With resilience, I have ensured that I set parameters of expectation and knowledge necessary to achieve my goals. At the beginning I was overwhelmed with the enormity of the task. At the end I am pleased that resilience did play a part in my success.

6.6.2 Contributions to professional development

Individual learning styles and experiences are important when encountered within a workplace. Corlett (2012) is quick to note however that an interaction of some kind needs to take place for learning to occur. Reflective practices, as mentioned previously, enable the workplace to become a rich source of learning. It is important to attempt to integrate the knowledge on a continuous basis, Nilsen, Nordström, and Ellström (2012). In this current research study, the knowledge I have acquired and the understandings from the pure research part of this journey has provided me with the authentication and validation necessary to bring information to my Community of Practice (AURIMS) and a wider industry risk audience in general.

The study contributed to literature on strategic risk management practice. The study will provide a report on its exploration of strategic risk management practice providing AURIMS members, industry practitioners and researchers with a current and relevant exposition of the state of the risk management environment and opportunities for strategic risk management practice to be recognized and further examined.

6.6.3 Contributions to practice

Action learning is a valuable practice in the workplace and provided the researcher with experience working in real time and having an opportunity to engage with colleagues on relevant dialogue regarding the research topics of interest. The acquisition of new skills and knowledge through action learning process provided the researcher with a relevant and current body of knowledge for future risk management projects. The knowledge acquired to date in this journey will allow me to contribute to the risk management body of knowledge through articles, meetings, journals, and literature.

By engaging in work-based learning, opportunities have become apparent. Opportunity for real-time discovery and discussion with colleagues is valuable within any workplace. Assumptions can be challenged and outcomes surprising. It can be a valuable period of learning both individually and within a group, in improving knowledge skills and competence and providing value to learner, colleagues and employers. The DPRS generates interest in the workplace through its unique learning methodologies. It is noteworthy that DPRS recognizes prior learning not just as a tick box exercise but as a real experience within the course itself. To identify work experiences as learning is a powerful tool and became an emotional exercise for myself and my colleagues.

6.7 CONTRIBUTION TO KNOWLEDGE

This study has responded to the research gap identified in the literature being the a) a comparison between the different approaches to risk management in practice and b) the rarity of reported descriptions of strategic risk management practice. The study provided further understandings of the management of risk within the context of Australasian universities which according to a review of the literature and community of practice (AURIMS) has not previously been investigated as a topic of research.

Overall, the study addressed the research gap by providing empirical insight into the use of risk management approaches in varied university environments. The findings and implications are considered by the researcher to contribute to enhancing knowledge

of strategic risk management practice within Australasian universities. Based on insights from the literature, experts and risk managers' perspectives informed an exploration of current practice and a proposed future practice relevant to the rapidly changing environment.

This study has contributed to literature on risk management practice through an examination of risk management models, the effects of influences on risk management practice and possible future advancement of strategic risk management. Furthermore, the evidence produced by the study has been used to inform the development of a fit-for-practice strategic management framework which is unique in the industry.

The measure of an original knowledge contribution as set out by the Doctor of Professional Studies degree is that it makes an original knowledge contribution to practice. This benchmark is reflected in the criteria set out by the Australian Qualifications Framework (AQF, 2018). Taking the limitations of the study into account it is proposed that this study meets the benchmark as evidenced above and provides a meaningful basis upon which future research can be based.

6.8 FUTURE RESEARCH

Based on the outputs of the study it is proposed that future studies may include the following:

- a) Research that seeks to explain the findings in a broader context and sample.
- b) Research that may seek to validate and / or generalise the findings of this research.
- c) Research that seeks to evaluate whether strategic risk management practice has been implemented in Australasian universities.
- d) Research that seeks to test and improve on the strategic risk management framework.

6.9 CONCLUSION

This chapter has discussed the research findings, implications of results, limitations of the study, and suggestions for future research. The pragmatic paradigm provided the opportunity to explore risk management practice in Australasian universities from a practice and applied perspective. As such, this exploratory research has been able to investigate and highlight risk management practice in a manner which was able to contribute to theory, practice, and research.

The work-based research emerged from the researcher's professional interest into an investigation of the state-of-affairs of risk management practice in Australasian universities. As a practicing risk manager, it was important to gain a deeper understanding of uncertainty and risk management practice through a substantial Literature Review, of insight from industry Delphi participants with executive backgrounds and risk managers from Australasian universities.

The research study provided the opportunity to develop an examination of the current state of risk management practice in Australasian universities, to investigate the notion that strategic risk management dimensions may be interpreted by current risk practice, and that there are substantial differences between both, which in this study is the research gap.

The conclusions satisfied the researcher's need to know that current risk management practice is influenced by internal audit, that there are dimensions supporting strategic risk management practice, and finally that there are opportunities to develop a substantial risk framework through understanding the core of a strategic risk management process. Certainly, contributions to theory and methodology through use of the Delphi approach, by underpinning risk management principles, and assuming a pragmatic worldview, have enhanced the broader utility of the study.

Beyond the academic and practice contribution there is also recognition of oneself as a research practitioner with the capacity to contribute to the field of uncertainty and risk. Undertaking the Doctor of Professional Studies (DPRS) has provided the researcher with the opportunity to investigate strategic risk management through this specific research approach to the study. This exploratory mixed methods study showed positive outcomes in the research itself, and also in the professional and personal contributions and achievement.

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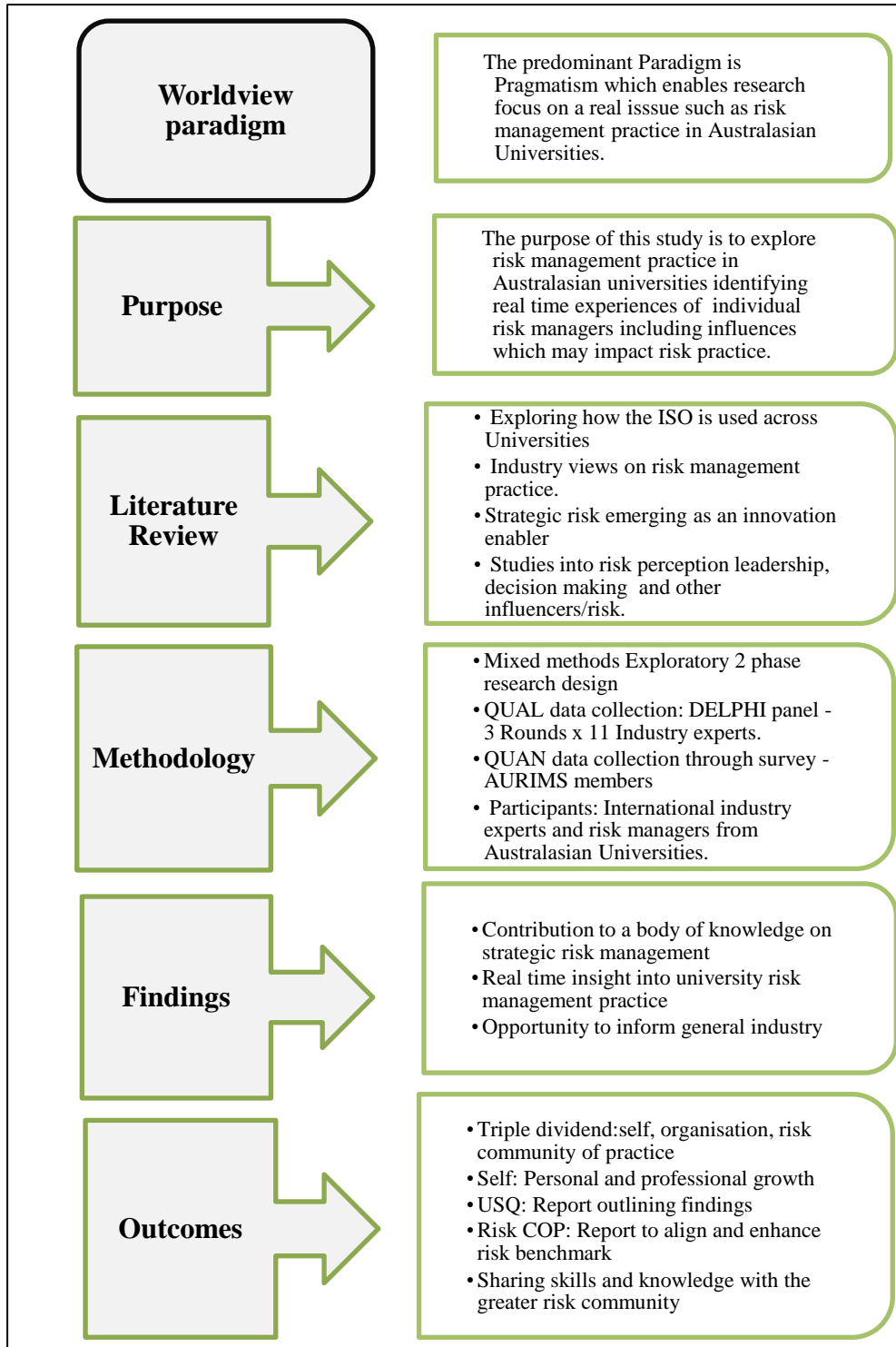
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Appendices

Appendix A Title: Research Plan



Appendix B Title: Research timeline

RESEARCH TIMELINE 2016 - 2020	
February –November 16	<ul style="list-style-type: none"> • Complete research proposal plan • Literature Review • Candidature presentation
December- January 17	<ul style="list-style-type: none"> • Review proposal • Incorporate comments from the Candidature Panel.
February-April 2017	<ul style="list-style-type: none"> • Ethics application lodged • Contact index group and begin nominations • Select Delphi panel members • Briefing for Delphi panel • Preparation for Round 1 questions • Complete Methodology Chapter
April – June 2017	<ul style="list-style-type: none"> • Commence Delphi Round 1 • Collect Delphi data and analyse • Complete report on the findings • Initial contact with AURIMS members re survey 2018
July – Dec 2017	<ul style="list-style-type: none"> • Commence Round 2 Delphi • Collect Delphi data and analyse • Complete report on the findings • Continue with Literature Review
January – July 2018	<ul style="list-style-type: none"> • Commence Round 3 Delphi • Collect Delphi data and analyse • Brief AURIMS Risk Managers re survey
July 2018 – Dec 2018	<ul style="list-style-type: none"> • Develop survey • Conduct survey • Analyse survey responses • Combine quant and qual results
Jan 2019 – Nov 2020	<ul style="list-style-type: none"> • Complete Results and Conclusions • Final review of document • Examination

Appendix C Title: Introductory material

a) Project information

Project Details

Title of Project: Exploring dimensions of risk management practice in Australasian Universities: A mixed methods study.
Human Research Ethics Approval Number: H17REA072

Research Team Contact Details

Principal Investigator Details

Ms Carol McCabe
Email: mccabec@usq.edu.au
Telephone: 617 4631 1215
Mobile: 0433312349

Supervisor Details

Dr Luke van der Laan
Email: Luke.VanDerLaan@usq.edu.au

Description

I extend an invitation for Industry leaders to participate in this benchmark study. The views of industry experts is critical to help develop an understanding of leadership impact on risk management practice.

This project is being undertaken as part of a Doctoral study by the Principal Investigator.

The purpose of this project is to discover the influences of leadership, audit, decision-making and risk perception on risk management. The study will explore emerging risk management thinking in the nexus between audit/compliance focused risk management practice and a foresight/ strategic risk management approach

The study will make a contribution to the literature on risk management practice. It will provide a report on the exploration of risk management practice providing industry practitioners and researchers with a current and relevant exposition of the state of the risk management environment.

Participation

The purpose of the Delphi panel is to engage expert stakeholders to consider a collaborative decision through semi-structured, anonymous discussion based on the research questions. These Delphi panel participants of which you will be one, will provide a strategic view of the issues around risk management practice which will underpin the construction of the questionnaire for the next group of participants, the practicing risk managers.

In this study stakeholders to be considered 'expert' will hold one or more skill sets consistent with: managers at the top of their field – this may be industry-wide; capability to contribute; expertise in strategic and/or general risk management; first-hand content knowledge, ie. Government executives, academics and authors; post graduate qualifications.

The expectation is for 12 to 15 panel members to be recruited in the first instance.

The Delphi panel will consist of 3 rounds. Questions will include: In examining your executive leadership role: how would you describe the roles audit, leadership, decision-making and risk perception play in risk management practice? It is expected that the panel will function for up to 6 weeks in total. One week to fashion a response to each question, one week for the Investigator's analysis of responses. In total, time needed for one response is a minimum of 1 hour every 2 weeks, over 6 weeks.

The Delphi panel will meet via encrypted email through the Principal Investigator. Both emails and data will be protected and stored securely. All data collected will be coded and anonymous.

Your participation in this project is entirely voluntary. If you do not wish to take part, you are not obliged to. If you decide to take part and later change your mind, you are free to withdraw from the project at any stage. You

will be unable to withdraw data collected about yourself after you have participated in the Delphi panel. If you wish to withdraw from the project, please contact the Principal Investigator.

Your decision whether you take part, do not take part, or to take part and then withdraw, will in no way impact your current or future relationship with the University of Southern Queensland.

Expected Benefits

It is expected that this project will directly benefit you in your leadership role through the generation of risk thinking and consensus with your peers.

Risks

There are no anticipated risks beyond normal day-to-day living associated with your participation in this project.

Privacy and Confidentiality

The project will be carried out in accordance with the National Statement on Ethical Conduct in Human Research and the Queensland Information Privacy Act 2009. All comments and responses will be treated confidentially unless required by law.

The data collection method will be through encrypted email between yourself and the Principal Investigator. Responses will automatically be coded and unidentifiable, ensuring a safe and anonymous environment for responses. Any data collected as a part of this project will be stored securely as per University of Southern Queensland's Research Data Management policy and the Queensland Information Privacy Act 2009.

All comments and responses will be treated confidentially unless required by law.

Consent to Participate

We would like to ask you to sign a written consent form (enclosed) to confirm your agreement to participate in this project. Please return your signed consent form to the Principal Investigator prior to participating in your Delphi panel group.

Questions or Further Information about the Project

Please refer to the Research Team Contact Details at the top of the form to have any questions answered or to request further information about this project.

Concerns or Complaints Regarding the Conduct of the Project

If you have any concerns or complaints about the ethical conduct of the project you may contact the University of Southern Queensland Ethics Coordinator on (07) 4631 2690 or email ethics@usq.edu.au. The Ethics Coordinator is not connected with the research project and can facilitate a resolution to your concern in an unbiased manner.

Thank you for taking the time to help with this research project. Please keep this sheet for your information.

b) Email invitation to participate

From: Carol McCabe
Sent: Tuesday, 18 July 2017 11:39 AM
To:
Subject: Message from Carol McCabe
Importance: High

Dear

I extend an invitation for you, as an industry leader, to participate in this benchmark research study. The research study will explore emerging risk management thinking in the nexus between audit/compliance focused risk management practice and a strategic risk management approach.

Why have you been invited to participate?

It is an important first step in this research project to seek the views of industry experts, of which you are one. The expectation is to have twelve to fifteen panel members. Importantly, the total, time needed for each

participant is a minimum of one hour every two weeks, over a six-week period. Please refer to the attachment for more detail on the background of this project and the Delphi model itself.

In this study, stakeholders, to be considered 'expert', will hold one or more skill sets consistent with: managers at the top of their field – this may be industry-wide; capability to contribute; expertise in strategic and/or general risk management; first-hand content knowledge, (i.e., Government executives, academics and authors); relevant post graduate qualifications.

What is a Delphi panel?

A Delphi panel is a research methodology designed to engage expert stakeholders to consider a collaborative answer through semi-structured, anonymous, on-line discussion based on the research questions.

The purpose of this DELPHI investigation is to discover new insights in current risk models; impact of external and internal influences such as leadership, audit, decision-making and risk perception on risk management practice; and, the opportunities and advantages of strategic risk management.

These Delphi panel participants, of which you will be one, will provide a strategic view of the issues around risk management practice, which will underpin the construction of the questionnaire for the next group of participants, the practicing risk managers.

How does the Delphi panel work?

The Delphi panel will function through a facilitated process conducted by the Principal Investigator. The identity of panel members remains anonymous throughout the whole process of enquiry. Both emails and data will be protected and stored securely with all data collected coded and anonymous.

The Delphi panel will consist of three rounds. Questions may include: 'in examining your executive leadership role: how would you describe the roles audit, leadership, decision-making and risk perception play in risk management practice? It is expected that the panel will function for up to 6 weeks in total. One week to fashion a response to each question, one week for the Investigator's analysis of responses.

Expected benefits

It is expected that this project will directly benefit you in your leadership role through the generation of risk thinking and consensus with your peers. The study will contribute to existing literature on risk management practice. It will provide a report on the exploration of risk management practice providing industry practitioners and researchers with a current and relevant exposition of the state of the risk management environment.

Withdrawing from the project

Your participation in this project is entirely voluntary. If you do not wish to take part, you are not obliged to. If you decide to take part and later change your mind, you are free to withdraw from the project at any stage. You will be unable to withdraw data collected about yourself after you have participated in the Delphi panel. If you wish to withdraw from the project, please contact the Principal Investigator. Your decision whether you take part, do not take part, or to take part and then withdraw, will in no way impact your current or future relationship with the University of Southern Queensland.

Privacy and Confidentiality

The project will be carried out in accordance with the National Statement on Ethical Conduct in Human Research and the Queensland Information Privacy Act 2009. All comments and responses will be treated confidentially unless required by law.

The data collection method will be through secure email between yourself and the Principal Investigator. Responses will automatically be coded and unidentifiable, ensuring a safe and anonymous environment for responses. Any data collected as a part of this project will be stored securely as per University of Southern Queensland's Research Data Management policy and the Queensland Information Privacy Act 2009. All comments and responses will be treated confidentially unless required by law.

I genuinely hope that you will be available to participate. I require a response by 28th July in order to commence the study. This is important research and your agreement to participate will be very much appreciated.


Yours sincerely

Carol McCabe

mccabec@usq.edu.au

Mobile: 61 433312349

c) Participant Consent Form

	Industry Leaders Participant Consent Form July 2017
	Title: Exploring dimensions of risk management practice in Australasian Universities: A mixed methods study
	Participants are to be drawn from nominations for leaders with knowledge and experience in risk management practice across industry.
	The information about this study has been given to me. I have received satisfactory answers to all questions I have asked.
	<p>I agree to participate in the DELPHI Panel.</p> <p>I know that I can choose not to answer any particular question.</p> <p>I understand I am free to withdraw from the study at any time without needing to give any reason</p> <p>I understand I will not be identified in any publication arising out of this study</p> <p>I understand that if I have any additional questions, I can contact the research team I understand that any data collected may be used in future research activities.</p> <p><i>Please confirm via return email that you have read the information above and give your consent to participate in the study.</i></p>

Appendix D Title: Delphi Round 1 Questions 1-4

a) Round 1 Welcome and thank you email.

Hello,

I am very pleased that you are able to participate in this study. I am interested in a range of viewpoints and many of the panel are not from universities at all.

This is the starting point and the data analysis of everyone's responses will inform the survey which University Risk Managers will complete later in the year.

Attached is the first round of questions. I would like responses by Friday 25th August if possible. There will be a week break while I analyse the comments and fashion Question 2 based on the findings. Then the process repeats.

I hope you enjoy this journey.

Warm regards,

Carol Mc

b) Round 1

a) In your experience, which essential dimensions of risk management practice are important to your organisation.						
b) Rank your top 10 dimensions						
<i>Dimensions</i>	<i>Not importan</i>	<i>Possibly</i>	<i>No opinion</i>	<i>Slightly important</i>	<i>Very important</i>	<i>Comments</i>
<i>Governance/audit</i>						
Strong links to Executive/Board						
Links to audit and, compliance						
Links to policies and practices						
Links to internal/external communication						
Links to organisational						

benefits and opportunity						
Links with organisational outcomes						
Increased uncertainty						
Audit control						
Operational planning						
Organisational risk reviews						
<i>Risk management</i>						
Positive perception of risk management across the organisation						
Positive perception of risk management from the business units						
Risk processes, i.e., risk identification, risk analysis, risk mitigation						
Core risk relationships across organisation						

Positioning of the risk management function within organisation						
Influence of risk management across the organisation						
Influence of the risk management function on decision making						
Risk management best practice						
Individual (personal) risk tolerance						
Organisational risk tolerances						
Operational risk control						
Organisation threats						
Risk mitigation						
Strategy						
Opportunity to analyse or						

participate in value creation						
Alignment of risk management with organisational strategy and strategic planning						
Alignment with business/ environment scanning						
Organisational foresight						
Identification of business trends						
Decreasing uncertainty						
Organisational risk narrative						
Links to social and cultural issues						
Value creation						
Opportunities						
Creative practice						
ROUND 1 Question 2						
a) What are the factors which impact or influence risk management practice in your organisation?						
b) Rank your top 10						
<i>Influencers</i>	Strongly disagree	Disagree	Neither influence or not influence	Influence	Strongly influence	Comments
<i>Economics</i>						
Political/economic influences						

Regulatory demands						
<i>Risk psychology</i>						
Risk psychology (cultural and social contexts)						
Risk psychology in decision making (intuition or gut feel)						
Risk psychology in decision making (risk aversion)						
Risk psychology - personal experiences						
Risk psychology in perception of risk						
<i>Governance</i>						
Internal Audit						
Internal audit process						
Internal audit reporting						
Organisational systems						
Risk management positioning within the organisation						
Adopted Risk framework						
Risk reporting hierarchy						
Risk reporting timelines						

Risk reporting process						
Leadership						
Leadership – responsibility						
Internal knowledge and relationships						
Organisational culture						
Leadership hierarchy						
Leadership - use of power						
Leadership accountability						
Strategy						
Organisational foresight						
Organisational strategic opportunism						
Organisational intent/priorities						
Org short-term horizon						
Org long-term-horizon						
ROUND 1 Question 3						
a) In your organisation, what is the degree to which the factors below generate a response or influence organisational practice?						
b) If YES to any above, what form does this take?						
	Not at all	Infrequently	Sometimes	Often	Always	Comments
Uncertainty						

Risk mitigation						
Emerging opportunities						
Rapid change						
Negative publicity						
Staff feedback						
Auditor's feedback						
External stakeholder feedback						
Cross department input						
Strategic risk						
Risk taking						
Further comments						
ROUND 1 - Question 4						
a) The degree to which my organisation adopts:						
i) International Risk Management Standard (ISO31000)						
Overview and Framework	Never	Partly	Don't know	Sometimes	Always	Comments
ISO						
ii) Committee of Sponsoring Organizations of the Treadway Commission 2014 (COSO ERM)						
Overview and Framework	Never	Partly	Don't know	Sometimes	Always	Comments
COSO ERM						
b) The degree to which my organisation adopts:						
SARF						
Overview and Framework	Never	Partly	Don't know	Sometimes	Always	Comments
ii) Other						
Alternative framework or combination	Never	Partly	Don't know	Sometimes	Always	Comments

c) The degree to which each framework enables best practice risk management in your view						
Best Practice	Never	Partly	Don't know	Sometimes	Always	
ISO31000						
COSO ERM						
SARF						
Other						
Comments						
d) How would you describe the ideal risk environment?						
Comment						
e) Describe your implementation phases briefly						
Comment						
f) Considering your responses on influencers, how would you ensure that the HIGHEST IMPACT factors are addressed within your risk environment						
g) Considering your responses on influencers, how would you ensure that the LOWEST IMPACT factors are addressed within your risk environment?						

Appendix E Title: Delphi R1 Frequency and correlation results

	<i>Questions</i>	<i>Frequency</i>	<i>Significant correlations</i>
Q1 Governance and Audit	Links to Executive/Board	100% agreement	.805 Alignment of RM with org .782 Business - environment scanning .736 Responsibility
	Links to audit and, compliance	91% agreement 19% disagreement	.797 Opportunity .765 Org outcomes .824 Responsibility
	Links to policies and practices	82% agreement	.803 Org risk tolerances
		18% disagreement	
	Links to internal/external communication	45.5 agreement 54.5 disagreement	0
	Links to organisational benefits and opportunity	63.7 agreement	.797 Audit
		9.1% disagreement	.702 Opportunity
	Links with organisational outcomes	91% agreement	.765 Audit
		9.1% disagreement	.773 Operational planning
			.869 Org threats
			.736 Responsibility
	Increased uncertainty	45.5% agreement	.738 Org foresight
		27.3% disagreement	.776 Positioning in org
			.810 Hierarchy
	Audit control	18.2% agreement	.756 Influence of RM on decision making
		72.8% disagreement	
	Operational planning	81.9% agreement	.773 Links to org outcomes
		9.1% disagreement	.774 Org threats
	Organisational risk reviews	63.6% agreement	.869 RM Best Practice
		27.3% disagreement	

Risk management	Positive perception of risk management across the organisation	81.8% agreement	0
		9.1% disagreement	
	Positive perception of risk management from the business units	72.8% agreement	0
		9.1% disagreement	
	Risk processes, i.e., risk identification, risk analysis, risk mitigation	72.8% agreement	.830 Internal audit processes
		18.2% disagreement	.749 Internal audit processes
	Core risk relationships across organisation	63.7% agreement	0
		9.1% disagreement	
	Positioning of the risk management function within organisation	63.7% agreement	.829 Positioning in organisation
		18.2% disagreement	
	Influence of risk management across the organisation	100% agreement	0
	Influence of the risk management function on decision making	90.9% agreement	.756 Audit control
			.742 Short term horizon scanning
	Risk management best practice	54.6% agreement	.869 Org risk reviews
		27.3% disagreement	738 Decision making
	Individual (personal) risk tolerance	45.5% agreement	0
		9.1% disagreement	
	Organisation threats	90.9% agreement	.869 Org outcomes
		9.1% disagreement	.774 Operational planning
	Risk mitigation	90.9% agreement	0
	Risk ownership	72.7% agreement	.829 Positioning in organisation
		9.1% disagreement	
		81.9% agreement	.803 Links to Policies

	Organisational risk tolerances	18.2% disagreement	
	Operational risk control	81.9% agreement	0
Strategy	Opportunity to analyse or participate in value creation	36.4% agreement	.833 Identify business trends
		9.1% disagreement	
	Alignment of risk management with organisational strategy and strategic planning	63.6% agreement	.805 Links to Executive
		9.1% disagreement	.884 Align with business – environment scanning
	Business/ environment scanning	63.7% agreement	.774 Social and cultural issues
		9.1% disagreement	
	Organisational foresight	63.6% agreement	.767 Identify business trends
			.770 Internal audit
	Identification of business trends	63.6% agreement	.833 Value creation
		18.2% disagreement	.767 Identify business trends
	Decreasing uncertainty	81.8% agreement	0
		9.1% disagreement	
	Organisational risk narrative	18.2% agreement	.770 Value creation
		36.4% disagreement	.848 Long term horizon scanning
	Links to social and cultural issues	27.3% agreement	.774 Align with business - environment scanning
		27.3% disagreement	.742 Value creation
	Value creation	27.3% agreement	.833 Identification of business trends
		18.2% disagreement	
	Opportunities	63.6% agreement	.797 Audit
	Creative practice	18.2% agreement	0

		27.3% disagreement	
Round 1 Question 2	Political/economic influences	100% agreement	0
	Regulatory demands	100% agreement	0
	Risk psychology (cultural and social contexts)	63.7% agreement	0
	Risk psychology in decision making (intuition or gut feel)	72.7% agreement	.738 Risk management best practice
	Risk psychology – in decision making (risk aversion)	81.8% agreement	0
	Risk psychology – personal - experiences	72.7% agreement	0
	Risk psychology - Risk perception	81.8 % agreement	0
	Internal Audit	72.8% agreement	.830 Risk processes
		9.1% disagreement	.824 High Responsibility
			.817 Internal audit process
	Internal audit process	54.6% agreement	.830 Risk processes
		18.2% disagreement	.817 Internal audit.
	Internal audit reporting	45.5% agreement	.749 Risk processes
		18.2% disagreement	
	Organisational systems	72.7% agreement	0
		9.1% disagreement	

	Risk management positioning within the organisation	81.8% agreement	.776 Increased uncertainty
		9.1% disagreement	.829 Risk ownership
	Adopted Risk framework	54.6% agreement	.846 Risk reporting timelines
		18.2% disagreement	.755 Risk mitigation
	Risk reporting hierarchy	54.6% agreement	.902 Risk reporting timelines
		18.2% disagreement	.884 Risk reporting process
			.810 Uncertainty
			.824 Responsibility
			.796 Accountability
	Risk reporting timelines	45.5% agreement	.902 Risk reporting hierarchy
		18.2% disagreement	.797 RR process
			.830 Risk mitigation
			.846 Adopted risk framework
	Risk reporting process	72.8% agreement	.884 Risk reporting hierarchy
		18.2% disagreement	.797 Risk reporting timelines
	Internal knowledge and relationships	90.9% agreement	0
	Organisational culture	100% agreement	0
	Leadership hierarchy	81.8% agreement	.810 Increased uncertainty
			.798 Positioning in organisation
			.796 Accountability
	Leadership - use of power	54.6% agreement	.738 Hierarchy
		18.2% disagreement	
	Leadership accountability	81.8% agreement	.770 Internal audit process
	Organisational foresight	100% agreement	0

	Organisational strategic opportunism	81.8% agreement	0
	Organisational intent/priorities	100% agreement	0
	Org short term - horizon scanning	81.8% agreement	.742 Decision making
	Org long term horizon scanning	100% agreement	.848 Organisation risk narrative
Round 1 Question 3	Uncertainty	36.4% agreement	.802 Staff feedback
		9.1% disagreement	.768 Risk mitigation
			.745 Risk taking
	Risk mitigation	63.7% agreement	.830 RR timelines
		9.1% disagreement	.859 Risk taking
			.768 Uncertainty
			.735 Emerging opportunities
	Emerging opportunities	81.8% agreement	.735 Risk mitigation
		9.1% disagreement	
	Rapid change	81.9% agreement	0
		9.1% disagreement	
	Negative publicity	72.8% agreement	0
		9.1% disagreement	
	Staff feedback	18.2% agreement	.802 Uncertainty
		18.2% disagreement	
	Auditor's feedback	36.4% agreement	0
		18.2% disagreement	
	External stakeholder feedback	27.3% agreement	.751 Strategic risk
		9.1% disagreement	
		18.2% agreement	0

	Cross department input	9.1% disagreement	
	Strategic risk	72.8% agreement	.751 External stakeholder feedback
		9.1% disagreement	
	Risk taking	27.3% agreement	.859 Risk mitigation
		18.2 disagreement	

Round 1 Question 4: How would you describe the ideal risk environment?

Appendix F Title: Delphi R1 Significant findings

	Freque	Significant
Strong links to Executive/Board	00 % agr	.805 Alignment of RM with organisation .782 Business - environment
Links to audit and, compliance	1% agr	.797 Opportunity .765 Org outcomes
Links to policies and practices	2% agr	.803 Org risk tolerances
Links to internal/external communication	5.5	0
Links to organisational benefits and opportunity	3.7	.797 Audit
Links with organisational outcomes	1%	.869 Org threats
Increased uncertainty		.810 Hierarchy
Audit control	2.8	.756 Influence of RM on decision making
Operational planning		.773 Links to org outcomes
Organisational risk reviews		.869 RM Best Practice
Positive perception of risk management across the organisation	1.8 %	0
Positive perception of risk management from business units	2.8	0
Risk processes, i.e., risk identification, risk analysis, risk mitigation	2.8 %	.830 Internal audit processes
Core risk relationships across organisation	7%	00
Positioning of the risk management function within organisation	3.7 %	.829 Positioning in organisation
Influence of risk management across the	00	0

Influence of the risk management function on decision	0.9	.742 Short term horizon scanning
Risk management best practice	7.3	.869 Org risk reviews
Individual (personal) risk tolerance	5.5	
Organisational risk		.803 Links to Policies
Operational risk control		0
Organisation threats		.869 Org outcomes
Risk mitigation		0
Risk ownership		.803 Links to Policies
Opportunity to analyse or participate in value creation	6.4	.833 Identify business trends
Alignment of risk management with organisational strategy and strategic planning	3.6 %	.884 Align with business – environment scanning .805 Links to Executive
Alignment with business/ environment scanning	3.7	.774 Social and cultural issues
Organisational foresight	3.6 %	.767 Identify business trends .770 Internal audit
Identification of business		.833 Value creation
Decreasing uncertainty	833	0
Organisational risk	8.2 % agr	.848 Long term horizon scanning .770 Value creation
Links to social and cultural issues	7.3 %	.774 Align with business - environment scanning
Value creation		.833 Identification of business
Opportunities		.797 Audit
Creative practice	8.2 %	0

Appendix G Title: Delphi R2 Information for experts

There is no magic oracle for generating the right risk decisions, and companies need to incorporate stronger, more strategic “human intervention” into their processes for identifying and mitigating risk. McKinsey 2011 ©

The nature of risk management has changed significantly with raised risk awareness based on unprecedented events such as the global financial crisis. These developments, combined with decreased community risk tolerance, have Developed a risk management environment focused on complex and inevitable prudent risk management systems reflecting audit traditions Bostrom, (1997).

Intent of the study

To examine the practice of risk management in Australasian Universities through a strategic risk lens, including the dimensions, influencers, and current risk practice.

Based on the findings the study seeks to develop:

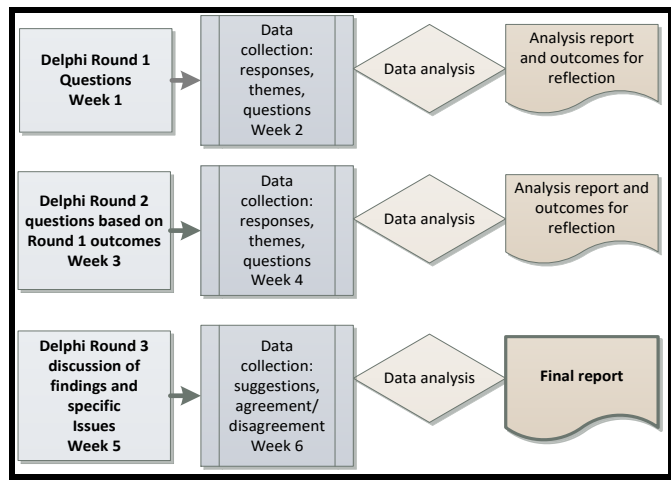
- a) Report on strategic risk practice
- b) Benchmark for operational risk management

An emerging view is that risk management could and should take a different approach from the above and promote creativity and add value to an organisation’s strategy. Because

organisations are becoming increasingly complex and risk averse, Schiller and Prpich (2013) propose that leaders mandate an increase in risk industry knowledge. According to the authors, this, in turn, will encourage a strategic risk management perspective rather than an increasingly audit-focused risk management approach.

What is the DELPHI method?

The DELPHI method seeks to synthesise contributions from a panel of experts aimed at addressing a clearly stated problem. Panel members will respond to semi-structured questions, in this case, by secured email. Participants comment on their own views and the responses of other panel members. At any time, viewpoints, changes in perspective and arguments against can be contributed, revised or withdrawn. For the purposes of this DELPHI method, risk management practice, influencers and strategic risk management will be explored.



Analysis of Round 1 responses

The Round 1 data were analysed based on a percentage response to each question. These evaluated the extent to which the Delphi panel members supported or rejected the statements. While I chose to examine some high-level agreements in the frequency outcomes, it can be said that high agreement on certain questions, whilst important, will not provide critical insights. In examining outliers, and/or contradictory results, however, the intention is to revisit current thinking and past responses.

The second data analysis tool technique used was to perform a correlation analysis. Correlation analysis measures between two question items. Using Pearson's coefficients at confidence levels of 95% and 99%, the analysis indicates when two questions are regarded to be significantly related (positively or negatively). In other words, the analysis would indicate that when one question is answered in a particular way it is likely that the other question would display a similar result.

The correlation analysis identifies patterns of correlations among a set of question items and places them in a framework. Determining both the strength of the relationship (eg.0.83 can be interpreted as an 83% likelihood of a similar response) and significance of each relationship is important in this study. Knowing the strength of relationships between questions that are statistically related allows the researcher to make assumptions and confirm the criticality of certain areas and what that relationship means for this study.

Overall, based on these statistical techniques, in addition to the interpretation of the panels' comments, the panel demonstrated high level consensus in the first Delphi round. While this seems an expected result, the Round 2 questions, will essentially be framed by some of the non-conforming responses or those that had an inconsistent (non-definitive) response from panel members (i.e., responses which have not reached consensus). This will provide further depth to the study. Additionally, there will be references to high consensus and variable response outcomes in instances where further comment is critical to clarify understanding.

The purpose of Round 2 is to identify areas needing further clarification or deeper understanding. This is also an opportunity for panel members to change their minds if they gain new insights and wish to indicate this. Please see the results below (Section 1) and add any comments you deem relevant. Thereafter please move on to Section 2 and answer the questions to complete this round of the Delphi.

Appendix H Title: Delphi R2 questions

Q1 There was 100% agreement and correlation that risk management has strong links to the executive function. Please explain why this is so
Q 2 There is a 50% disagreement that risk management best practice is an essential element of risk practice. Why would some of the panel disagree that best practice is not an essential element of risk practice?
Q3.1 Risk and internal audit processes are strongly related (.830 correlation). However, panel comments indicate that 'these are low value exercises only satisfying auditors.' What explains this attitude?
Q3.2 The correlation between risk processes and internal audit is significantly high, (.830). This suggests that internal audit may become the informal risk benchmark and determine risk practice. Please explain why this is so and what consequences may arise from this?
Q4.1 There is high agreement (82%) that risk psychology decision making influences risk management practice. Why and how does this influence decision-making?
Q4.2 A 90% agreement suggests that risk management influence on decision making is an essential outcome of risk management practice. Why?
Q5 A very high correlation between risk ownership and risk positioning in the organisation (.829) may be seen as highly important. Why
6.1 Strategic opportunism is strongly agreed to be influential on the organisation. Explain how this aligns or does not align to current risk management practice.
6.2 A high agreement (73%) indicates that strategic risk practice influences the organisation. Please explain how this influence takes place in your organisation
6.3 There is marginal agreement for an adopted risk framework. Would it be a productive exercise to investigate a strategic risk management model, (see question 6.2 above). Please explain the reasons for your answer.
7.1 There is strong correlation (.884) between risk management /organisational strategy/strategic planning and business environment scanning. Why is this alignment important?
7.2 Long term horizon scanning indicates 100% agreement that there is an influence on risk practice. To what extent may the uncertainty of long-term anticipation of risk influence how risk management is currently practiced, versus how it should be practiced?
7.3 Long-term horizon scanning has a very high correlation (.848) with organisational risk narrative. Why?
8.0 There is an 82% agreement that risk psychology/risk perception influences risk management practice. Can you explain how this is perceived in your organisation and give an example of how this may take place?
There is a very low agreement for staff feedback, cross department input, and external stakeholders as influencers of risk management practice. Please explain why each seems to be outside the considerations of risk management practice
The correlation between leadership hierarchy and increased uncertainty is high, (.810) suggesting that the more hierarchical the organisation structure/decision making is, the more uncertainty there is. Please explain why this may be so and what examples illustrate this?
There is high correlation between the leadership hierarchy and positioning of risk management in organisations. Please explain how this may occur.
Risk reporting process and internal audit processes correlate highly (.884). Is this correlation an example of audit influence on risk management practice? Explain

Risk reporting process and internal audit processes correlate highly (.884). Is this correlation an example of audit influence on risk management practice? Explain
Risk reporting process and risk reporting hierarchy have a very high consensus. What procedures should be in place to ensure the risk process is well-defined and transparent?
Q14 Rapid change is agreed to be important to 82% of respondents. How does the panel's comment below illustrate that?
Q15 There is a 55% disagreement that internal communication is essential in risk management practice? How can disagreement by panel members be explained
Q16 Comments from the Panel illustrate the criticality of the skills and professionalism of each individual risk manager. Explain the importance, or not, of this comment being crucial to the risk management practice and its influence on decision making

Appendix I Title: Delphi R2 Experts' response summaries

Executive: a. Ultimate responsibility b. Knowledge & authority c. Senior management engagement. Influence strategy
Best practice: Lack of relevance. Must be tailored to organisation, size, complexity. BP not so important
Risk and audit: Executive oversight. Expands value creation. Critical function not box ticking
IA may act in an immature environment driving direction. b. IA input into ERM is not sustainable. C. IA and ERM must have a mutual relationship. Roles are different. IA must not determine risk policy. IA 3rd party objective bystander. Objectivity and independence critical
Psychological, behavioural and cultural influences can over-ride systems. why employees may be silently reluctant. perceived issues influence how people respond to risks (perception is reality). It definitely influences. Inherent and personal biases can't be removed
Organisations depend on strong decision-making skills for success. Should be a partnership bn ERM and leadership
Risk ownership a significant issue. Board and executive issue. Interest and accountability and ability to implement change.
Opportunism through the orgs strategic goals aligns with a robust risk environment. Alignment is critical. Strengthens decision making
RM enriches executive understandings of strategy and risk. Executive oversight. Aligned with corporate objectives.
Guidance model useful to assist RM development. Past negative experience. 31000 positioning as a compliance standard. Purpose of a SR model must be clear. Adopt a hybrid framework tailored to individual orgs. SRM framework useful for future planning
Understanding environment to manage RM. Increase org strategies be met. Environment scanning critical role for RM. Create a Uni wide viewpoint. With no link between strategy and RM creates a static environment. RM and leadership relationship critical. RM linked to org strategies.
Essential to address uncertainty. Horizon scanning delivers a broader view of future risks. Reactive risk environments a distraction. Planning for greater uncertainty difficult.
Important components of long-term horizon scanning, and they seem missing from the discipline's conversations. Long term thinking is related to org maturity. Horizon scanning essential in slow to change orgs.
Increased competition and value creation strategies critical. RM practice is important to differentiate bn traditional business. Key to illustrate value adding. The value creation paradigm influences the risk management process
Impacts unclear. Rarely included as an issue in reports. Other attributes seen as more important. Difficult to define. RM is not independent of its compounds so must influence decisions.
Psychological, behavioural and cultural influences are important to understand. Can lead to operational inertia. I think innate bias always enters into one's perception of risks. Risk perceived as negative and to be avoided.
External input limited. Not understood as important. Further information can be seen as an impediment to executive. Concept fundamental to creating an overall risk culture. A limit of input must be set in order to make a decision. Silos constrict exchange of views. May be a strong influencer but institutions not good at engagement


<p>Better results are achieved with a flatter organizational structure and clear accountability. avoiding silos is critical. organization should encourage communication between levels and functions. Hierarchical structures, levels and different tenures and business focus can create a disconnect in RM understandings. The further a decision maker is from the information that supports the decision the greater the uncertainty</p>
<p>RM is embedded in executive structures. Executive final responsibility for outcomes. Risk owners high in executive hierarchy. Complex hierarchy creates lack of sight of real risks. Hierarchical leadership leads to decreased access to information and less alignment bn leadership and RM.. Flatter structures is more accommodating for RM</p>
<p>Risk and audit processes are complementary. Internal audit can provide greater clarity and depth on risk issues. Audit can commence the risk reporting but not at the higher levels. There is a high degree of correlation due to the stakeholders that are interested in both processes. IA does influence risk management practice.</p>
<p>Executive sign off on ERM reports. Executive with risk responsibility ensures transparency. Board input vis A&R Committee. Good documentation important. Governance structure. Strong communication informs RM</p>
<p>Change is becoming so rapid that learning, feedback and action loops must operate in real time incorporated directly into operational and organizational activities. Need to continually reassess our processes to keep up. Rapid change may make it difficult to manage Risk Registers. The notion of rapid change may be different in different organisations. Universities very slow to effect change. It also depends on the definition of rapid change and perceptions of such. Organisations don't embrace change naturally.</p>
<p>Barriers such as old methodologies confine the reaction to change in the organisation. Implementing change in organisations whose practice is generations old, is impossible. Universities are designed to avoid risk and negatively react to rapid change.</p>
<p>7 x Internal communication is essential. 1 x A useful tool but not an essential dimension</p>
<p>Requiring the RM manager to possess the necessary skillset to be both trusted, and experienced. it's more about relationships and the perceptions of the risk manager and how those things are influenced by skills and professionalism</p>

Appendix J Title: Delphi R3 questions

<p>Q1 There was 100% agreement that senior management engagement is critical to any risk management environment. The Panel did not agree that executive drives strategic risk practice in current workplaces. Comments also suggest that executive can hinder risk management practice through, unclear pathways, lack of understanding of risk ownership, and limited knowledge of the risk process.</p>
<p>Q2 Agreement between Risk Management (RM) and Internal Audit (IA) is high. 60% of your responses agreed that both work best in a mutual relationship. However, 30% of the panel agree that IA limits the RM processes by its control of risk practice and becoming a risk benchmarking provider. On reflection, can you agree with this statement</p>
<p>Q3a 75% of the Panel agreed that adopting a Strategic Risk Framework (SRF) is a conduit for organisation/leader future thinking. Note, 25% of the Panel disagreed, citing past negative experience with International Risk Standard (ISO) and other models that inhibit flexibility. A Panel member suggestion that, ‘with organisational maturity, its unique context, culture and industry can manage risk within its own frameworks,’ is of interest. a). Should there be an alternative to the inflexible risk frameworks such as ISO?</p>
<p>3b) If a hybrid strategic risk model adaptable to each unique organisation was developed, specifically designed as a knowledge, information and support mechanism, as opposed to an audit like approach, would it be more likely to be adopted by organisations?</p>
<p>4a There is 100% agreement that risk perception is a critical factor in risk management practice. Additionally, 60% of the Panel agree that social and cultural influences, including risk perception, are known to exist but are not acknowledged by executives citing this area as mostly unimportant. a) In thinking about the issues brought up during this study, do you consider social and cultural influences could be more broadly accepted by executive and risk managers?</p>
<p>4b Is it important to increase individual and corporate knowledge of risk perception and particularly decision making, to be applied within the organisation’s risk management practice?</p>
<p>5a There was 100% agreement on the criticality of the role of executive in contemporary leadership practice. A conflicting view, that executive should consult across silos and external stakeholders, received just 50% agreement. One of the views being that broad consultation can be a threat to executive, often limiting external input altogether. The other that broad consultation is a signpost to executive which create the fundamentals of a strong risk culture. A. Do you agree with either, or both views?</p>
<p>5b. In the context of building a strong risk culture, how can broad consultation be a motivator rather than a threat to the executive?</p>
<p>6. The most emphasised themes which emerged from Round 2 responses were: Executive function: executive leadership; culture; strategy; strategic thinking; foresight; decision making Risk Psychology: uncertainty; decision making; risk perception; culture; social influence Strategy: Executive leadership; uncertainty; strategic thinking; foresight Risk management practice: risk frameworks/models; internal audit; best practice. Your final comments on these themes are critical to the construction of the survey (for risk managers).</p>

Appendix K Title: Risk Managers' Information Sheet

Project Details

	University of Southern Queensland
Participant Information AURIMS SURVEY	
Title of Project:	Exploring dimensions of risk management practice in Australasian universities: A mixed methods study
Human Research Ethics Approval Number:	H17REA072
Research Team Contact Details	
Principal Investigator	Principal Supervisor
Ms Carol McCabe Email: mccabec@usq.edu.au Mobile: 61 433312349	Dr Luke van der Laan Email: Luke.Vanderlaan@usq.edu.au

This research study is being undertaken as part of a Doctoral study by the Principal Investigator.

This study will comprise a thematic review of literature examining risk management practice, influences on this practice and opportunities to re-think the risk spectrum to enable strategic risk management thinking.

The nature of risk management has been significantly and rapidly altered through the magnitude of unprecedented risk events associated with technological advancements. This phenomenon, combined with decreased community risk tolerance, have led to a risk management environment focused on complex and bound prudent risk management systems, reflecting audit traditions. There is an emerging view that risk management could alternatively promote creativity and add value to an organisation's strategy. Schiller and Prpich (2013) propose demanding increased industry knowledge. This acts as an enabler for a strategic risk management environment in stark contrast to an increasingly audit-focused, risk averse, risk management paradigm.

The purpose of this research project is to discover the influences of leadership, executive, decision-making and risk perception on risk management practice. The study sets out to explore emerging risk management thinking in the nexus between compliance focused risk management practice and a foresight/ strategic risk management approach.

Phase 1 consisted of a Delphi panel of expert stakeholders assembled to consider, through collaborative decisions, semi-structured, anonymous discussion based on the research questions. These Delphi panel participants were to provide a strategic view of the

issues around risk management practice. The responses have informed the construction of the survey for the Phase 2 survey.

The study will contribute broadly to the literature on risk management practice. It will provide a report on the exploration of risk management practice providing industry practitioners and researchers with a current and relevant exposition of the state of the risk management environment. Additionally, an AURIMS benchmark will be completed.

Participation

I extend an invitation for AURIMS members to participate in this benchmark study. The views of industry practitioners is critical to help develop an understanding of current risk management practice in higher education.

Your participation in this project is entirely voluntary. If you do not wish to take part you are not obliged to. If you decide to take part and later change your mind, you are free to withdraw from the project at any stage. If you wish to withdraw from the project, please contact the Principal Investigator.

Your decision whether you take part, do not take part, or to take part and then withdraw, will in no way impact your current or future relationship with the University of Southern Queensland.

Expected Benefits

It is expected that this project will directly benefit you in your risk management role through the generation of risk thinking and consensus with your peers.

Risks

There are no anticipated risks beyond normal day-to-day living associated with your participation in this project.

Privacy and Confidentiality

The project will be carried out in accordance with the National Statement on Ethical Conduct in Human Research and the Queensland Information Privacy Act 2009. All comments and responses will be treated confidentially unless required by law.

The data collection method will be through encrypted email between yourself and the Principal Investigator. Responses will automatically be coded and unidentifiable, ensuring a safe and anonymous environment for responses. Any data collected as a part of this project will be stored securely as per University of Southern Queensland's Research Data Management policy and the Queensland Information Privacy Act 2009. All comments and responses will be treated confidentially unless required by law.

Consent to Participate

Your consent to participate is assumed when commencing the survey.

Questions or Further Information about the Project

Please refer to the Research Team Contact Details at the top of the form to have any questions answered or to request further information about this project.

Concerns or Complaints Regarding the Conduct of the Project

If you have any concerns or complaints about the ethical conduct of the project you may contact the University of Southern Queensland Ethics Coordinator on (07) 4631 2690 or email ethics@usq.edu.au. The Ethics Coordinator is not connected with the research project and can facilitate a resolution to your concern in an unbiased manner.

Thank you for taking the time to help with this research project. Please keep this sheet for your information.

b) **From:** Carol McCabe <Carol.McCabe@usq.edu.au>
Sent: Monday, 24 September 2018 10:20 AM
To: Robbie Sinclair <Robbie.Sinclair>
Subject: Invitation to participate in the AURIMS Risk Managers survey

Dear Robbie,
You have been invited to participate in the AURIMS Risk Managers survey

To participate, please click on this
link: <https://surveys.usq.edu.au/index.php/967724?token=VGalWkS1d0mOMYr&lang=en>

Yours Sincerely,
Ms Carol McCabe
Email: mccabec@usq.edu.au
University of Southern Queensland Australia

If you do not want to participate in this survey and don't want to receive any more invitations please click the following link:
<https://surveys.usq.edu.au/index.php/optout/tokens/967724?langcode=en&token=VGalWkS1d0mOMYr>

This email (including any attached files) is confidential and is for the intended recipient(s) only. If you received this email by mistake, please, as a courtesy, tell the sender, then delete this email.

c) Reminder to participate in the AURIMS Risk Managers survey

Dear,

Recently you received a reminder to participate in the AURIMS Risk Managers survey. This a mini reminder to say that the closing date is this Friday 19th October.

The survey is still available should you wish to take part and especially if you have not completed. There are 18% finalised and 18% not yet finished to date. The survey is VERY brief, just 5 minutes!

A few people have contacted me to see who I was and what the survey is all about so I thought I would write a little bio. I have been a university risk manager since 2005. Have always been passionate about risk and especially AURIMS. I began on the Committee that year and have served in many roles ending with periods as Vice President and President. It was this passion for all things 'risk' that drove me into my Doctoral study 4 years ago. This survey is the final piece in the study and I hope you embrace it. An important outcome of this study is to provide a risk benchmark for AURIMS based on the responses.

I will be at the AURIMS Conference next May in Melbourne to present my findings and catch up with everyone.

To participate, please click on this

link: <https://surveys.usq.edu.au/index.php/967724?token=0vODVsPLYwYJDku&lang=en>

Warm regards,

Ms Carol McCabe

Principal Investigator

Email: mccabec@usq.edu.au

University of Southern Queensland Australia

If you do not want to participate in this survey and don't want to receive any more invitations please click the following link:

<https://surveys.usq.edu.au/index.php/optout/tokens/967724?langcode=en&token=0vODVsPLYwYJDku>

Appendix L Title: Survey questions

<p>Q1 Professional details</p> <ul style="list-style-type: none">i) Name optionalii) Titleiii) Role descriptioniv) Your working relationships
<p>Q2 Executive</p> <ul style="list-style-type: none">i) Executive sponsorship and leadership are the most critical areas for universities.ii) Executive involvement at all organisational levels criticaliii) Executive is actively engaged in the risk management processiv) Executive hierarchy makes decisions difficultv) Executive does not drive risk practicevi) Executive can hinder risk management processes through unclear pathways, lack of understanding and limited risk knowledgevii) Executive engagement with risk practitioners is slowly developingviii) A long-term risk champion is essential for risk successix) Broad consultation should be a core executive focusx) Executive should consult across internal silos and external stakeholdersxi) External consultation serves as a marker as a mature organisationxii) It is necessary to engage the whole organisation in risk management understandingsxiii) Embedding risk culture is an important early process
<p>Q3 Risk and Audit</p> <ul style="list-style-type: none">i) Risk Management (RM) and Internal Audit (IA) both work best in a mutual relationship.ii) IA limits RM processes by its oversight of risk practiceiii) Each discipline (RM and IA) has a different role within the universityiv) RM should be driven by executivev) RM should have direct influence on university strategyvi) RM should manage uncertainty through strategic positioningvii) Risk management is a fluid practiceviii) Internal audit is inflexibleix) Compliance is a static methodology

Q4 Risk frameworks

- i) Which risk framework do you use at your university? ISO, COSO, SARF, Other, None
- ii) The international risk framework, ISO and COSO ERM and others have contributed to negative experiences by risk practitioners
- iii) There is no appetite for a fixed risk framework in university risk practice
- iv) Risk frameworks fail through lack of flexibility
- v) With organisational maturity, its unique context, culture and industry can manage risk within its own frameworks
- vi) An emphasis on quantitative risk analysis can inhibit the development of the true state of risk in a university
- vii) What essential components should be included in a risk framework. Principles; framework; processes; organisation-wide process; achievement of goals; creative; flexible; value driven; integral to internal processes; addresses uncertainty; part of decision making; systematic and structured; human and cultural impacts important; applied in a strategic setting across the organisation; provides surety to Executive; defines RM effectiveness; managed at every level of the organisation; key concepts can be adapted.

Q5 Strategy

- i) Adopting a Strategic Risk Framework (SRF) is a conduit for organisation/leader future thinking
- ii) Executive strategy processes would be enhanced by incorporating strategic risk management at this level
- iii) A future strategic risk framework will be necessary to manage uncertainty
- iv) Strategic positioning is critical in contemporary risk practice
- v) The future will demand universities understand risk and uncertainty
- vi) Risk is still considered as having a lower level compliance type role
- vii) Strategy, foresight, strategic thinking and strategic practice are essential components of risk practice
- viii) Existing risk frameworks do not support a strategic risk management practice
- ix) A hybrid risk model may support strategic risk practice
- x) The role of the risk manager is becoming more challenging
- xi) Broad consultation across all stakeholders is essential for contemporary risk practice
- xii) Sound risk decisions are tied to risk understandings, knowledge and information across the organisation

Q6 Risk perception

- i) Understanding risk perception is a critical factor in risk management practice
- ii) Individual perception of risk and its impacts is necessary in changing university environments
- iii) Social and cultural influences are important in risk understandings
- iv) Risk perception may be key to understanding how risk practice works
- v) Understanding risk perception might make risk practice too broad
- vi) Social and cultural influences are known to exist but are not acknowledged by executives citing this area as mostly unimportant
- vii) Executives see risk perception as not essential in risk practice as it is difficult to quantify
- viii) Executive displays an unwillingness to change or have no strategy to implement risk perception issues

Q7 Decision making

- i) Psychological, social, institutional, and cultural influences should be taken into account in any risk management practice.
- ii) It is important to increase individual and corporate knowledge of risk perception, particularly in decision making, to be applied within the organisation's risk management practice
- iii) Risk perception, including decision theory, should be incorporated into risk management practice to ensure progressive risk thinking
- iv) Risk management is an integral part of decision making across the university.
- v) Decisions can be influenced by a range of factors, including lay and expert thinking, personal beliefs, expert and team viewpoints
- vi) Formal and informal communication plays a significant role in amplifying or diminishing the impact and analysis of risk
- vii) Understanding risk perception can accommodate cross organisation thinking and understanding.
- viii) Knowledge of risk perception needs to be understood by all staff
- ix) Risk perception understandings are essential to advocate for risk management as a pragmatic practice across the organisation
- x) Risk psychology is the future of risk as a discipline

Appendix M Title: Survey correlation results

Questions+	Pearson's Correlation Co-efficient
Social and cultural influences are known but executives cite as unimportant Executives see risk perception as not essential and difficult to quantify	.760**
Executives display unwillingness to change Executives see risk perception as not essential	.695
The role of a risk framework (integral to internal processes) was considered a strong association with the purpose of addressing uncertainty	.689**
IA is inflexible relates strongly with executive hierarchy makes decisions difficult	.683**
Understanding risk perception part of decision making and Increased individual and corporate knowledge of risk perception	.679**
Formal and informal communication plays a significant role in amplifying or diminishing the impact and analysis of risk associates strongly with understanding risk perception can accommodate cross organisation thinking and understanding	.678**
As essential framework components – (human and cultural impacts important) showed a moderate to strong relationship with being integral to internal processes	.675**
<i>Executive</i>	
Executive hierarchy makes decisions difficult correlates moderately to strongly with, each discipline (RM and IA) has a different role within the university	.668**
Executive sponsorship and leadership play a critical role with strategic positioning	.612**
Executive can hinder risk management processes through unclear pathways, lack of understanding and limited risk knowledge has a moderate relationship with 'risk is still considered as having a lower level compliance type role'	.507**
RM should be driven by Executive Future risk framework be necessary	.441**

<p><i>Risk management</i></p> <p>RM should manage uncertainty through strategic positioning associates moderately with executive sponsorship and leadership the most critical areas for universities</p> <p>RM should have direct influence on university strategy indicates a moderate association with managing uncertainty through strategic positioning</p> <p>RM should manage uncertainty through strategic positioning associates moderately with:</p> <ul style="list-style-type: none"> • Formal and informal communication play a significant role • Risk management as an integral part of decision making • Risk practice understandings are essential to advocate for risk management as a pragmatic practice • Risk practice can accommodate cross organisation thinking 	<p>.612**</p> <p>.583**</p> <p>.562**</p> <p>.521**</p> <p>.521**</p> <p>.515**</p>
<p><i>Risk framework</i></p> <p>The role of a risk framework (integral to internal processes) was considered a strong association with the purpose of addressing uncertainty</p> <p>As essential framework components – human and cultural attained a strong relationship with being integral to internal processes</p> <p>Risk framework components enhanced by systematic and structured processes showed a moderate to strong association with addressing uncertainty</p> <p>As essential framework components – human and cultural attained a moderate relationship with addressing uncertainty</p> <p>What essential components should be included in a risk framework, human and cultural impacts important showed a moderate association with managing uncertainty through strategic positioning</p>	<p>.689**</p> <p>.675**</p> <p>.638**</p> <p>.584**</p> <p>.552**</p>

<p><i>Internal audit/risk management</i></p> <p>IA is inflexible relates strongly with executive hierarchy makes decisions difficult</p> <p>Executive hierarchy makes decisions difficult shows a strong association with RM and IA have different roles within the university.</p> <p>Executive sponsorship and leadership are the most critical areas for universities relates strongly to risk management should manage uncertainty through strategic positioning</p> <p>Internal audit is inflexible associates moderately with IA limits RM processes by its oversight of risk practice</p>	<p>.683**</p> <p>.668**</p> <p>.612**</p> <p>.595**</p>
<p><i>Strategic risk framework</i></p> <p>A future strategic risk framework will be necessary to manage uncertainty indicates a moderate to strong association with executive strategy processes would be enhanced by incorporating strategic risk management at this level</p> <p>A hybrid risk model may support strategic risk practice shows a moderate relationship with risk perception understandings are essential to advocate for risk management as a pragmatic practice across the organisation</p> <p>A future strategic risk framework will be necessary to manage uncertainty indicates a moderate association with RM should have direct influence on university strategy</p> <p>A future strategic risk framework will be necessary to manage uncertainty shows a moderate association with broad consultation should be a core executive focus</p> <p>Managing uncertainty through strategic positioning shows a moderate relationship with executive involvement at all organisational levels is critical</p>	<p>.625**</p> <p>.592**</p> <p>.583**</p> <p>.567**</p> <p>.527**</p>
<p><i>Random single outliers</i></p> <p>What essential components should be included in a risk framework Principles Psychological, social and cultural influences</p> <p>Formal and informal communications amplification of risk Understanding risk perception accommodates cross org thinking</p> <p>Risk perception understandings essential Role in amplification risk analysis</p>	<p>.499**</p> <p>.678**</p> <p>.687**</p>

<i>Risk perception</i>	.
Executives saw risk perception as not essential in risk practice as it was difficult to quantify showed a strong relationship with social and cultural influences are known to exist but cited by executives as unimportant	.760**
Executives see risk perception as not essential and difficult to quantify Executives display unwillingness to change	.695**
Risk perception understandings essential Role in amplification risk analysis	.687**
Risk perception part of decision making and Increased individual and corporate knowledge of RP	.679**
Formal and informal communications amplification of risk and Understanding risk perception accommodates cross org thinking	.678**
The future will demand universities understand risk and uncertainty shows a strong relationship with understanding risk perception is a critical factor in risk management practice	.646**
Risk perception, including decision theory, should be incorporated into risk management practice to ensure progressive risk thinking shows a moderate association with risk perception may be key to understanding how risk practice works	.552**
Risk perception understandings are essential to advocate for risk management as a pragmatic practice across the organisation shows a moderate association with psychological, social, institutional, and cultural influences should be taken into account in any risk management practice	.502**
<i>Risk communication</i>	
Formal and informal communication plays a significant role in amplifying or diminishing the impact and analysis of risk associates strongly with understanding risk perception can accommodate cross organisation thinking and understanding	.678**
Formal and informal communication plays a significant role in risk management shows a moderate relationship with executive sponsorship and leadership are the most critical areas for universities	.572**