MANAGEMENT CONTROL AND PORTFOLIO RISK MANAGEMENT IN AN ORGANISATION OF NATIONAL SIGNIFICANCE: THE CASE OF THE ROYAL NAVY

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Thesis Summary

Purpose- To enhance risk management practices within Navy Command whilst adding to academic knowledge on management control and risk management. An organisation of national significance through provision of Defence and security, the Royal Navy must not fail in its mission, thus enhancement of its risk management practices makes a vital contribution to a national imperative.

Approach- A reflexive qualitative methodology was chosen by a practitioner-researcher to obtain rich data from a green field area of research over an 18-month period; and so, give visibility of risk management practices at the most senior levels of Defence. Research methods of observation, document review and semi-structured interviews were employed, using themes drawn from literature reviews in the fields of management control and risk management. Findings were reflected back to practitioners and academics to test and refine interpretations of what the data was 'saying'.

Findings- The purpose of enhancing risk management practices was achieved through using case study evidence to create a model for designing an optimal risk management system for Navy Command; in doing so providing additional support for the need for complementarity between risk and other management control systems (MCS). Additionally, the different contributions possible from the risk function were highlighted and two context-specific risk tools were adopted by the organisation to assist the management of risk exposure over time; the details of which are provided. Finally, leadership is proposed as a fourth variable to Woods' (2009) contingency framework for public sector risk,

Contribution- There are both theoretical and methodological contributions:

- Benefit of complementarity in an organisation's management control systems; (Mundy (2010), Grabner and Moers (2013) and Kruis et al (2016)).
- Various roles the risk management function performs, and the importance of their contributing tools and understanding in order to be influential (Mikes, 2009; Hall et al, 2015).
- Role of leadership's mindset as a fourth contingent factor for public sector risk management as proposed by Woods (2009), as defined by Linsley and Kewell (2015).
- Contribution to knowledge using a qualitative interpretive case study (Walsham, 1995; De Loo and Lowe, 2017).

Key words: Management Control; Leadership; Risk Management System Design.

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Along my research journey I have had the very good fortune to interact with some extremely helpful people. I'm grateful to the many uniformed and civil servant personnel in Navy Command who gave freely and willingly of their time to help me understand their role and contribution to the organisation's risk management system. Furthermore there are four external individuals – in addition to my supervisory team – who helped move my research into a 'better place': Dr Andrey Pavlov of Cranfield University, who suggested the context of organisations of national significance; Mr Hans-Kristian Bryn, who suggested I conduct a midpoint review within Navy Command to obtain an early 'check' on my findings'; Dr Ruth Murray-Webster, for the many conversations but in particular the advice to use a risk management theory published in a 4* journal to underpin my findings; and Professor Anette Mikes, whose 4* risk work I have drawn on extensively, for the many intellectually thought-provoking conversations.

Of course, none of this, as with all the important things in my life, would have been possible without the love and support of my fantastic wife, Caren, and her forbearance with the "few hours of extra study" required to complete this piece of research.

List of Figures

List of Tables

1. Introduction

This chapter aims to orientate the reader to the content of this thesis; it is structured thus:

1.1. Purpose and justification

The purpose of this professional doctorate thesis is to enhance risk management practices within Navy Command whilst adding to the body of academic knowledge on management control and risk management. The justification for this research stems from the fact that the Royal Navy is of national significance for the nation in terms of its role for the government in provision of Defence and security; the Royal Navy cannot afford to fail in its mission, thus enhancement of its approach to risk management makes a vital contribution to a national imperative.

1.2. Context

1.2.1. Organisations of national significance

The thesis offers that organisations are of national significance when they contribute to government fulfilling its role of governing the nation. Dean (1999:18) suggests that governing involves the "direction and conduct of the governed"; and thus it can be referred to as the art of government "which requires craft, imagination, shrewd fashioning, the use of tacit skills and know-how, [and] the employment of intuition". Therefore, the study of governing is the study of "organised practices through which we are governed and through which we govern ourselves"; both the formal operating procedures and also the softer skills employed in their use. Those practices referred to previously are used to enable government to enact its responsibility for the "health, welfare and prosperity" (1999:20) of the population over which it enacts 'sovereignty'[1].

[1] Though sovereignty is usually associated with those heads of state who are monarchs, it is used in this context to denote the role of the government in 'running' the country on behalf of the head of state.

Central to this is the effectiveness of the apparatuses of security; apparatuses that include “use of standing armies [Armed Forces in the context of this research], police forces, diplomatic corps, intelligence services and spies…health, education and social welfare systems” (1999:20). These then are the organisations of national significance; for if they fail to deliver then government fails to deliver to the population on its’ responsibilities. In framing the research design for this case study the author reviewed what research had been conducted in the field of organisation-wide risk management at board-level in other nationally significant organisations. While expecting that little might be in the public domain about the diplomatic corps, intelligence services or spies, except for Belan’s (2015) study into the risk framework used with Slovak armed forces, there also appears to be a dearth of organisation-wide research into risk management within the armed forces – of any country. Diplomacy is another area of ‘national significance’ where the application of risk management has not been extensively studied; studies such as the European Union’s concern over the risk to gas security (Ritter, 2011) confirm that risk management is taking place in this realm of governing – but provides little insight into how it is enacted.

Police forces, albeit not in the UK, have in two instances been the subject of an organisation-wide research view of risk management. Archbold (2005) using telephone interviews revealed a “surprising” low use of risk management techniques across 354 law enforcement agencies in the “first national study of risk management in police agencies in the USA” (2005:30); the literature review revealed “there had been no systematic research done on the use of risk management by law enforcement agencies in the US” previously (2005:36). Archbold (2005) adopts a quantitative methodology to report a lack of presence of risk management, suggesting future research might look at the reasons for this; a very different approach to the one proposed in this thesis to look at how risk management is conducted within a significant organisation. A second study (Achim, 2014) looks at risk management across the Romanian police force, however this is from the single viewpoint of occupational health risks rather than the full panoply of risk managed by that organisation. Thus, from Dean’s (1999) areas of national significance just the organisations of health and social welfare remain for consideration. Alaszewski and Manthorpe (1991) reviewed the literature on risk in the field of social welfare. Post the National Health Service (NHS) and Community Act (1990) era they claim that NHS and Social Services have been expected to develop some features of commercial organisations – including “the ways risks are measured and managed” (1991: 278). Insights from their research, including the role of “professional judgement”

versus “check-lists and computers” (1991:281) (with parallels to the qualitative – quantitative debate in this thesis); “the importance of objectives…weighted against the possible degree of risk”(1991:283) (the theme of risk to objects of value is included in this thesis); “technology of risk assessment and management is at a rudimentary level”(1991:288) (tools to support decision making is another theme addressed here) reveal an organisational area that is grappling with many of the same themes of effective risk management to those faced by the Royal Navy. The final area of national significance, health, is the one where most research appears to have taken place into organisational-level risk management. The NHS seeks to provide a comprehensive health care system for the British population, just as the Royal Navy seeks to provide a comprehensive maritime defence for the country; both of which need to work with other stakeholders to deliver their outputs. Joyce (2001) claims that a governmentality mindset within the NHS (i.e. one where focus is on governing) has led to priority setting and resource ‘rationing’ becoming the dominant discourse. This is an interesting observation as it begs the question of what ‘mindset’ prevails in the Royal Navy and thus has influenced their own priority setting and resource ‘rationing’. Exworthy et al (2011) take their analysis one level down from the whole organisation as they address Foundation Trusts, which arose out of a decentralisation policy following the NHS reforms of 2004. Their paper argues that the Foundation Trusts were unable to act in an autonomous manner due to “continued centralisation, unclear policy and the financial regime” (2011:232); again these same external contexts will have played a contingent factor role in the Royal Navy’s approach to management, including that of risk. In much the same way that the MoD conducts assurance and audit visits on Navy Command, so too does the NHS on their Trusts. Reports such as NHS Quality Improvement Scotland (2010) on that Trust’s governance and risk management arrangements record that a holistic review of the risk framework was able to confirm that “The NHS board is monitoring the effectiveness of its risk management arrangement across the organisation” (2010:8). While NHS Highland’s report did confirm that the NHS was actively involved in assessing and assuring its own risk management arrangements, it did not get into the detail of how the whole framework was enacted. In contrast Card et al (2014) studied why the introduction of risk management tools did not translate into measurable improvements in patient safety (2014:1469); their findings showed a number of weaknesses in the use of risk tools, including inadequate guidance for their use. The use of risk management tools within the Royal Navy is considered in this thesis, again demonstrating parallels of interest between the two nationally significant organisations. One further study into organisation-wide risk assessment in the health sector is

Wreathall and Nemeth (2004) on probabilistic risk assessment; with weaknesses shown as a reductivist mindset, and unavailability of probability data requiring 'expert estimation' and thus a vulnerability to bias. Their caution with a belief in the numbers is also considered in the thesis on Navy Command's culture towards numbers. Each of the organisations of national significance, contributing to the "apparatus of security" (Dean, 1999:20), has to deal with a variety of types of risk: quantitative risks of insurance and morbidity probability calculations in health, and qualitative 'case-management' assessment risks (Dean, 1990:189); the latter increasingly prevalent throughout most spheres of government. These two differing calculative cultures towards risk are enacted within the context of a broader cultural rationality towards responsibility; termed by O'Malley (1992) as "new prudentialism", it entails the growing propensity for individuals, families, households and communities to take responsibility for their own risks (Dean, 1999:166). Coupled with this is the development of 'technologies of performance', with their potential for "restoring trust" (accountability, transparency and democratic control) in the 'experts' (Dean, 1999:169). These two facets of "new prudentialism" and "technologies of performance", Dean (1999) argues, are not sufficient in themselves for effective governing; rather they need to be enacted within a "reflexive government", namely one that considers how it should govern itself (1999:193).

This section has offered a definition for organisations of national significance and revealed a paucity of research into risk management at the organisational level. Given the significance of these organisations to the governing of the nation, this thesis is situated in an area of national importance. While health care was shown to an area where similar research into organisation-level risk management had been conducted, with similar themes emerging to those that will be shown in this thesis, literature reviews reveal that this thesis is making a greenfield[2] contribution as published research into risk management by senior leadership within the Defence. For whilst it maybe that similar studies have been conducted (within any country), if their classification due to sensitive information has precluded their entering the public domain then the opportunity to contribute to the wider body of knowledge has been forgone. The thesis will show later that, given the context of national significance, the research design was carefully crafted to permit exposure to the widest audience possible.

[2] In addition to the author's own extensive literature review for similar studies in the Defence sector, Dr Frances Miley confirmed this is ground-breaking research through her own literature review while acting as my discussant at Queen Mary's UL PhD conference held 19 June 2018.

1.2.2. Researcher as a participant-observer

The internal context for the thesis is that the researcher, as a senior employee within the Royal Navy, conducted a case study into risk management within the organisation with focus on board-level management and assurance with access to the most senior of meetings and information. Gathering data and initial analysis over the course of a financial year, before further analysis and writing up whilst still in the organisation, the author was able to interact with senior leadership and management to ensure the focus of the research remained aligned with the needs of the organisation particularly in the case of risk tool development.

1.3. Scope of research

The study was initiated by the Royal Navy to enhance its management of risk; where the 'problem' was perceived that while there was much reporting of risk the actual control of risk was not tied into other management practices. The Second Sea Lord wanted to "run the Navy using risk management" (Navy Command, 2015); the study then was to look at board-level decision making on risk in the context of other management decision making. It was agreed early in the design phase that the author would have observer access to senior board meetings and papers, and interview staff as required to augment those observations; the assumption being that all sensitive/classified information would be handled appropriately, and the identity of participants protected, in order to comply with security and ethical regulations. The study was bounded in duration to one year, in order that timely input to improvements in processes would be forthcoming, and geographically limited to interaction with staff on those risks held solely by Navy Command; in the main this comprised Navy Command employees, with some interaction with senior risk staff in the Ministry of Defence in Whitehall. Having secured access to the 'data' that would provide the insight required to address the purpose of the study, a robust research design was proposed; not least so as to be able to rebut any aspersions of bias due to pressure from line management or biased views held by the researcher. With the opportunity to gather rich data from participants in risk management processes, and it being the first holistic study of its kind, the author elected to conduct a case study while performing the role of participant-observer. Using a reflexive approach, and rigorous use of field notes, the author focused on the Navy Command Operating Board handling of risk and the managers that

provided the interface between them and the staff – the Portfolio Management Group[3]. The management control theories of Simons (1995) and Ferreira and Otley (2009) were used to guide the data collection on management control aspects of the organisation; while the risk system writings of Power (2004, 2007, 2009) and Mikes (2009, 2011) and Kaplan and Mikes (2016) guided the initial research focus into the various aspects of the risk management system in use; with further literature being drawn on as new themes emerged in particular the concept of balance and internal consistency (Mundy, 2010; Grabner and Moers, 2013; Kruis et al, 2016), and contingency theory (Chenhall, 20003; Woods, 2009) to study the interplay between the various elements. By this means insight was gained on both strategic and operational-level risks held by the navy; data was triangulated by means of semi-structured interviews with both Management Group members and wider risk staff to check the author's understanding. While this approach might hold concern for some that participants may have sought to temper unfavourable views; the benefit of gaining a closer understanding of participants' thinking was deemed to offset this potential weakness.

As part of the research design it was decided to assess the quality of the study's output using the criteria of authenticity, plausibility and criticality offered by Golden-Biddle and Lock (1993); plus, those of persuasiveness, correspondence, coherence and use by others, as suggested by Reissman (1993). To achieve this, the author sought a multitude of opportunities to write-present-discuss his works with academics and Navy Command risk participants; which in turn shaped his thinking and the findings presented here in this final version.

1.4. Research aims and objectives

The substantive aim of the research was to investigate how risk management is performed within Navy Command in order to use that enhanced understanding, along with knowledge gleaned from academia and other practitioners, to make recommendations for areas for improvement in an organisation of national significance. Accordingly, foremost as a professional doctorate, this study seeks to achieve the research objective of enhancing the effectiveness of risk management within Navy Command; and in doing so fulfil the secondary objective of adding to the body of knowledge on risk management practices within an organisation of national significance.

[3] A group of senior managers responsible for considering the risk recommendations going before the Navy Command Operating Board in the wider organisational context.

1.5. Research questions

To achieve those research objectives, the study examines the research questions below such that in answering questions 1 to 3, the thesis is able to offer an answer to question 4.

RQ1: How are management control systems used in portfolio risk management?

RQ2: How are strategic and operational risks controlled?

RQ3: How is the management of risk assured in the British Royal Navy?

RQ4: What should be the framework for portfolio risk management in Navy Command?

1.6. Contribution

My thesis is that in the Royal Navy, given its size, complexity and importance of its mission, the risk management system needs to be closely tied into other management practices so that a resource informed position on risk to objects of value can be judged. Generic risk management practices are largely drawn from the private sector, but a nuanced approach is required such that the framework of meetings, processes and tools is tailored to the needs of both public and private sector organisations; included in this is the blend of qualitative and quantitative calculative cultures that will naturally exist amongst stakeholders. It is a leadership function to set out the organisation's requirement of its risk management system such that the main board can make sense of the information and assure themselves and other stakeholders that a rigorous process in in place.

The thesis contributes to knowledge in four main ways. Firstly, it responds to Palermo's (2017) observation that management control systems theory has not been applied to risk management. In providing a rich insight into how risk is part of broader management controls, this study has provided evidence of the worth of the concept of complementarity (Kruis et al 2016; Grabner and Moers, 2013) in relation to risk management, which has not been explicitly denoted in any literature. Secondly the thesis provides evidence of the different role of the risk function and the associated tools and practices in use within the Royal Navy, including details of two new tools adopted because of action research conducted as part of this study. Thirdly the thesis offers a fourth variable of leadership to Woods' (2009) contingent framework for the public sector; noting that Chenhall (2003) has leadership as a sub-set of the structure contingent variable in his framework derived largely from the private sector. This thesis contends however, such is the influence of the leadership's mindset on the other aspects of the risk management system, this variable requires its own explicit reference. The fourth contribution is in the form of a 'practitioner's guide' model, which proposes 16 questions to help those with responsibility for risk

management oversight to determine what should be the model for portfolio risk management.

1.7. Structure of the thesis

To meet the research objective of adding to the body of knowledge on risk management practices within organisations of national significance, the thesis is structured into nine chapters. Following this introduction, chapter 2 reviews the literature on leading management controls systems theories, to be able to address research question one; chosen as a consequence of senior leadership wishing to understand how risk management should be optimised within the organisation's broader management practices. Simons (1995) Levers of Control theory is reviewed, as developed by Tessier and Otley (2012) for social and technical controls in addition to employee perspective; Widener (2007) for strategic risk and uncertainty on time constraint implications for use of control; plus, Grabner and Moers (2013) and Kruis et al (2016) for complementarity and internal consistency between management control systems. Three further theories are reviewed: Ferreira and Otley's (2009) extended framework for performance analysis, as developed by Broadbent and Laughlin (2009) for the underlying nature of the control; Malmi and Brown's (2008) management control systems as a package; and Adler's (2011) revised framework for performance management analysis that draws together the salient aspects of the previously reviewed frameworks into a package of dynamic control systems. Management control is often studied from a contingency perspective, thus the chapter reviews Chenhall's (2003) review of the contingency approach to MCS, draw largely from the private sector, and Woods' (2009) study into risk management in a public sector organisation. The chapter concludes by detailing the gaps in knowledge within the literature that this thesis seeks to address.

Chapter 3 reviews the literature on risk management from three perspectives in order to be able to answer research questions 2 and 3: the purpose of risk management; risk management system design; and contingency theory. Firstly, the chapter reviews literature on four potential purposes of risk management: Boholm and Corvellec (2011) on the relational theory of risk for managing risk to objects that are of value; Weick (1995) on sense making within organisations; Verhezen (2010) on moral imperative to manage risks; and Power (1996, 2003a, 2003b, 2004a, 2004b, 2005, 2007) on the need for demonstrable auditability by organisations. A second perspective of risk management system design includes reviews of: Mikes and Kaplan (2015): risk management package of processes, meetings and tools; Verhezen and Dequae's (2017:280) interplay between risk types, the role of the risk function and the prevailing mindset; Power (2007) and Mikes (2009, 2011)

on risk ‘calculative culture’; plus Mikes (2011), Hall et al (2015), Mikes and Kaplan (2015), Kaplan and Mikes (2016) on the potential roles of the risk function. The third perspective for the literature reviewed is contingency; Woods (2009) again, this time with a focus on risk aspects, and Linsley and Kewell (2015) on the role of the leadership’s mindset in risk management. The chapter concludes by detailing the gaps in knowledge within the literature that this thesis seeks to address.

Chapter 4 details the methodology adopted to address the gaps in the knowledge identified in the previous two chapters and thereby answer all four research questions. As methodology “is fundamentally dependent” on a researcher’s ontology (internal-realism constructivist; Walsham,1995:75), epistemology (‘non-positivist’; Archer, 1988), and axiology (normative; Lee and Lings, 2008) the chapter opens with an explanation of the philosophical underpinning of the chosen research design. The chapter then outlines the reflexive methodology (Cunliffe, 2003:999) that enabled a critical exploration of organisational life using an iterative process of data collection, analysis and sharing of findings with others (both academic and practitioner) to home in on the novel and important aspects of the study. Thereafter the chapter reports the qualitative research methods of observation, semi-structured interviews and document review which were chosen to answer the research questions; reported in enough detail on processes and templates used in data collection and analysis that they might be replicated. In doing so the chapter has two aims: (a) to demonstrate that these methods are appropriate way to answer those questions, (b) that the chosen methods did not exert an inappropriate influence on the results. Having detailed and provided justification for the choice of research methods, the chapter proceeds to detail ethical considerations, criteria for assessment research’s quality and methodological lessons learnt.

Chapter 5, the first of the findings chapters, provides answers to research question one on management control systems contribution to portfolio risk management. The chapter provides new evidence for two leading management control systems theories, firstly the applicability of Simons’ (1995) Levers of Control theory to risk management, with particular insights into: social and technical controls in addition to employee perspective, as documented by Tessier and Otley (2012); the need for complementarity and internal consistency between management control systems in order for effective overall control as first raised by Mundy (2010), Grabner and Moers (2013) and Kruis et al (2016); the utility in researching risk management of Ferreira and Otley’s (2009) extended framework for performance analysis; and empiric support for Broadbent and Laughlin (2009) development of the underlying nature of the control. It also provides case study insight into

the applicability of Adler (2011) revised framework for performance management analysis that portrays the complexity of management control through a package of dynamic control systems. The chapter also provides evidence in support for Woods' (2009) contingency perspective to risk management in a public sector organisation; with the proposal of a fourth variable of leadership that influences the design of the organisation's risk management system. In doing so the chapter provides insight into how leadership, a sub-set of the contingent variable of organisational structure reviewed in Chenhall (2003) applies to risk management control system; with the thesis that leadership mindset should be an explicit contingent variable in its own right. The chapter concludes with a summary of the gaps in the knowledge that have been filled by this study.

Chapter 6 provides answers to the second research question of managing strategic and operational risks. In doing so it provides evidence to fill gaps in the knowledge on the purpose of risk management, risk management system design and the applicability of contingency theory in an organisation of national significance. Firstly, for purpose of risk, the chapter shows that it is being used for: risk identification in relation to objects of value, Boholm and Corvellec (2011); sense making within organisations, Weick (1995); to fulfil a moral imperative to manage risks, Verhezen (2010); and to meet the requirement for demonstrable auditability by organisations, Power (1996, 2003a, 2003b, 2004a, 2004b, 2005, 2007). For risk management system design the chapter reveals case study insight into: risk management package of processes, meetings and tools detailed by Mikes and Kaplan (2015), including evidence of two new risk management tools adopted by the organisation as a consequence of action research by the author; an example of the interplay between risk types, the role of the risk function and the prevailing mindset as depicted by Verhezen and Dequae (2017:280); examples of risk 'calculative culture' from Power (2007), Mikes (2009, 2011) including evidence from the early stages of a pilot into operationalising 'risk appetite' into a useable concept to inform decision making; and examples of roles of the risk function of Mikes (2011), Hall et al (2015), Mikes and Kaplan (2015), Kaplan and Mikes (2016). Finally, it provides evidence to support a proposal of a fourth contingency variable for public sector risk management, adding to Woods (2009); a contingent variable role of the leadership's mindset in risk management, from Linsley and Kewell (2015). The chapter concludes with a summary of the gaps in the knowledge that have been filled by this study.

Chapter 7 provides answers to the third research question that covers assurance of risk management. In doing so it provides evidence to fill gaps in the knowledge on the purpose of risk management, risk management system design and the applicability of contingency

theory, as applied to assurance of risk in an organisation of national significance. The chapter concludes with a summary of the gaps in the knowledge that have been filled by this study.

Chapter 8 discusses the answer to research question four: What should be the risk management model be for Navy Command? In doing so it draws on findings that answer the previous three research questions to propose a new model developed by the author that provides a structured way of thinking by practitioners when synthesising the interdependence between (1) purpose of risk management; (2) the design of the risk management system determined by the leadership; (3) complementarity between management control systems; (4) people aspects of risk management including risk appetite; and (5) time considerations when using the risk management system. In offering the model the author records the preeminent role of leadership in fusing the various elements, in particular its influence on the culture, framework and role of the risk function; noting however that freedoms are constrained by the requirement to be demonstrably auditable (Power 2007).

Chapter 9 concludes the thesis by summarising the previous chapters, answering the four research questions, the gaps in the knowledge that were addressed and thereby the extent to which the research objective and aims were met. Theoretical and practical implications of the research contribution are detailed prior to concluding with the limitations of this research and recommendations for further research.

2. Literature Review of management control literature for understanding the model for portfolio risk management in Navy Command?

Key literature reviewed in this section

MCS Design

- Simons (1995): Levers of Control Theory, as developed by:
    - Tessier and Otley (2012) for social and technical controls in addition to employee perspective;
    - Widener (2007) for strategic risk and uncertainty on time constraint implications for use of control;
    - Grabner and Moers (2013) and Kruis et al (2016) for complementarity and internal consistency between management control systems.
- Ferreira and Otley (2009): extended framework for performance analysis, as developed by Broadbent and Laughlin (2009) for the underlying nature of the control.
- Malmi and Brown (2008): Management Control Systems as a package.
- Adler (2011): revised framework for performance management analysis that draws together the salient aspects of the previously reviewed frameworks into a package of dynamic control systems.

Contingent variables

- Chenhall (2003): a review of the contingency approach to MCS.
- Woods (2009): a contingency perspective to risk management in a public sector organisation.

2.1. Introduction

The literature reviewed in this chapter is that required for the reader to understand the findings reported and discussed in this thesis; that is not to say that all this literature had been reviewed prior to commencing data collection. Rather this is an inductive study where, using a reflexive methodology, the author returned to the literature as the case study progressed to investigate further aspects of interest that were revealed by the observations, discussions and review of the organisation's documents.

This chapter then reviews the germane management control literature to the study of risk management within the Royal Navy. Palermo (2017:141) states that risk management is widely viewed as a central part of an organisation's strategic management: "a process that ensures that organisations address the risks linked to their activities with the goal of achieving sustained performance" across all areas. Thus, to explain how risk management is performed within the Royal Navy's organisation this chapter reviews literature on management control systems theory; in particular, with risk management being viewed as a sub-set of broader management practices, it includes management control systems theory from Simons (1995), Malmi and Brown (2008) and Ferreira and Otley (2009);

The thesis contends that there are interdependencies between the various influences on the research thus Figure 2-1 depicts four influences on the organisation (with the Navy Command Operating Board at the centre). Firstly, purpose, both to manage the risk to the object of value and, as Power (2004a; 2009) would hold, in doing so demonstrate the auditability of the organisation. Purpose can only be achieved, however, with the two supporting strands of management control and risk management practices, while the organisation seeks to make sense of the required responses. All of this is underpinned by a contingent approach which is tailored to the specific needs and context of that organisation.

The key literature reviewed in this chapter is depicted in the oval lozenges in Figure 2.1:

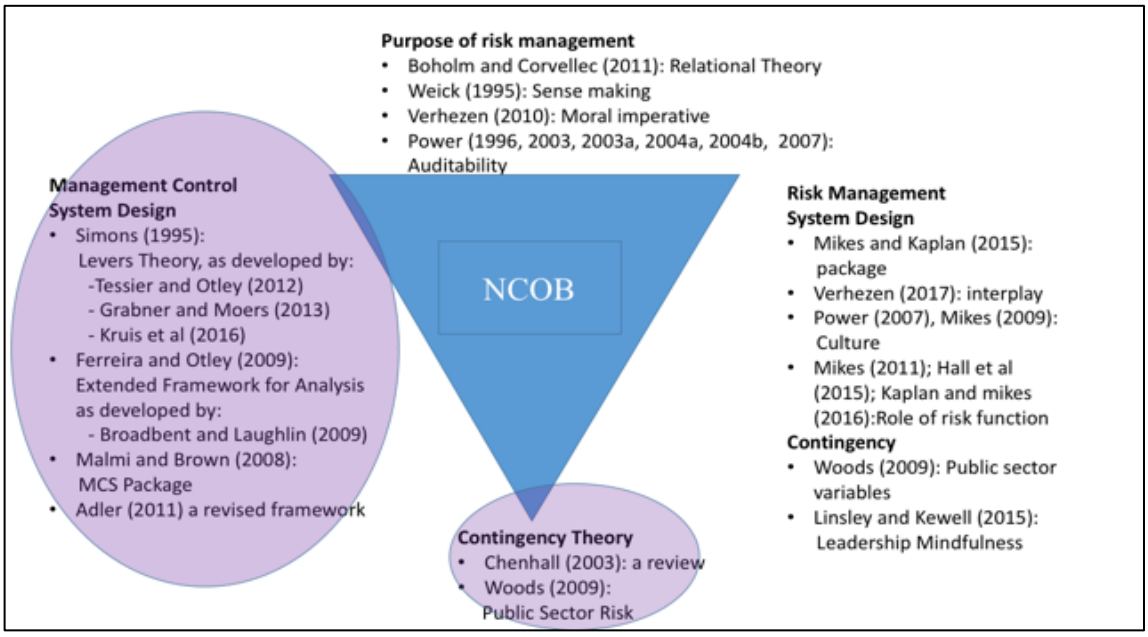

Figure 2-1 :A conceptual model of salient management control literature for the research into risk management within the Royal Navy (source: the author).

The chapter is structured thus:

2.2. The Context

The context for this thesis' study into an integrated organisation-wide risk management system is that organisational encounters with risk are a "routine and systematic part of daily organisational life" (Vaughan, 2005:33). "From this point of view, risk is not a thing or an independent object, rather the management of risk is a constitutive sense-making project for the organisation as a whole" (Hutter and Power, 2005:9). Sense-making from data that is often incomplete or incoherent, which is conveyed by limited representations that demand interpretation, and which challenges what can be imagined and what currently makes sense (2005:11). Risks in an organisational context, are those possibilities that a realised outcome will fall short of the desired level; thus risk is a sub-set of performance management and control (PMC). Performance management relates to the critical management practice that (usually) involves measurement of key indicators of the organisation's goals and achievements (Harris, 2018:1), so as to be able to determine realised achievement versus intended outcome. Management control, however, is more broadly defined and includes all the systems and procedures in place, and actions taken by managers, to ensure that organisational goals are met (Harris, 2018:1).Thus management control is thus concerned with the ways in which an organisation's managers encourage and motivate other people in the organisation to work towards common goals, as well as the way in which it is seen to perform by a range of internal and external stakeholders (Harris, 2018:2). In support of a management control perspective this chapter now considers the design of management control systems, outlining two main theories, before broadening to the concept of a package of systems and contingent variables that influence their employment. The chapter then considers behavioural aspects of

management control before linking MCS literature to risk literature and highlighting the gap in the literature.

2.3. Management Control Systems Design

Berry et al (2009:6) identifies "three models of integrated performance management systems [that] have emerged in the literature: strategic performance measurement systems (SPMS) like Kaplan and Norton's balanced scorecard; Simons' levers of control; and Ferreira and Otley's performance management and control framework". These, Dugdale (2018:13) observes, all share a common theme of a top-down approach to performance and control management. However, as Kaplan and Norton's balanced scorecard, is not utilised by the Royal Navy it is not considered further in this thesis; the remaining two are now outlined below.

2.3.1. Simons (1995) Levers of Control Theory

Whilst Simons (1999:92) claims that the Levers of Control can be used and adjusted to control risk, Palermo (2017:144) observes that "Levers of Control have never been explicitly tested in relation to ability of defined control systems to help organisations manage risks". This thesis looks at how MCS are used to manage risk in an integrated way (Palermo, 2017: 142); thus this section now: outlines Simons' (1995) theory; reviews the conceptual development of Tessier and Otley (2012) that tightened definitions, in addition to making explicit the social and technical aspects of controls as well as employee perspective; signposts the issues of time and processing capability by top teams as investigated by Widener (2007); and explains the importance of the concepts balance and internal consistency between systems (Grabner and Moers (2013) and Kruis et al (2016)), so as to be able to address Palermo's point with regard to MCS and helping an organisation manage risk. Based on a 10-year study of mainly US businesses, Simons (1995) concluded that successful organisations had achieved balance between four modes of control which he labelled: diagnostic, interactive, boundary and beliefs; these are briefly described. Simons (1995:59) holds that diagnostic systems have three characteristics that distinguish them: (1) the ability to measure the output of a process; (2) the existence of predetermined standards against which actual results can be compared; and (3) the ability to correct deviations from standards. In contrast (1995: 96) interactive systems "provide frameworks or agendas for debate and motivate information gathering outside of routine channels"; that said, Simons points out that other systems can be used interactively. Boundary systems "delineate acceptable domains of activity for the organisation's employees" (1995:39);

and thus, in defining the boundary between acceptable and non-acceptable behaviour, give some constraint to the limits of interactive debate in the pursuit of meeting diagnostic performance goals. Finally, beliefs provide the "values, purpose and direction for the organisation" (1995:34); which as a minimum can equate to an organisation's formal mission and vision statements.

Simons' (1995) theory has been criticised for ill-defined and ambiguous concepts for each of his levers. Tessier and Otley (2012), using concept analysis methods and using concepts from prior field studies, propose solutions for improved definition and a revised framework that develop Simons' theory through: (1) separating managerial intentions from employee perceptions; (2) characterising managerial intentions into (a) types of control (social and technical), and (b) one of four systems (strategic performance; operational performance; strategic boundary; operational boundary); and (c) suggesting that they can be used either diagnostically or interactively with an enabling or constraining purpose that results in either reward or punishment.

In Tessier and Otley's (2012) revised framework, shown in Figure 2-2 below, both social (in the broadest sense of social norms, culture and shared-values as well as top management vision/mission statements; Dugdale (2018:17)) and appropriate technical control systems are used both diagnostically and interactively by management to drive the desired performance, whilst demonstrating compliance within strategic and operational constraints. The model however explicitly notes that these managerial intentions will have both enabling and constraining effects on employees' behaviours and, subject to how they are presented, will instill positive/neutral/negative attitudes amongst the staff.

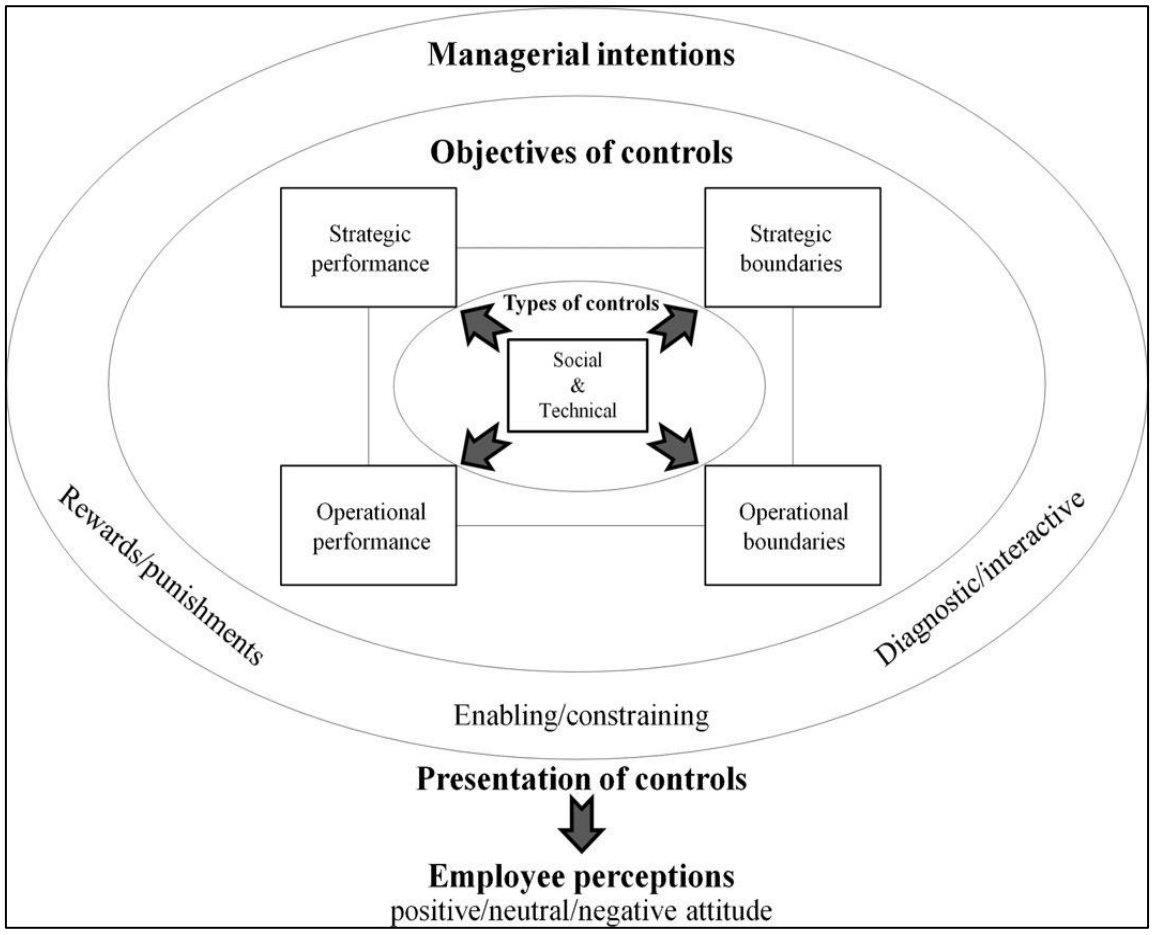

Figure 2-2: Figure illustrates the revised version of Simons' framework proposed in light of Tessier and Otley's 2012 paper's analysis.

The result is a framework in which its components are better defined and more tightly integrated (Tessier and Otley; 2012:172), and therefore more use for holistic empirical research on control packages than that proposed by Simons (1995).

A specific issue relating to the use of Simons' (1995) Levers of Control theory is that of time constraints faced by top managers and their effect on their processing capability. Schick et al (1990:215) state that "information overload occurs when the demands on an entity for information processing time exceed its supply of time". Monitoring multiple control systems can require tremendous managerial attention, thus top management has to choose where to focus their attention (Widener, 2007:776). Using data from a survey of 122 Chief Financial Officers Widener found that strategic risk and uncertainty drove the importance of interactive controls, and that while there was a cost of this control (management attention) there was a positive effect on performance.

A third area of conceptual development of Simons' (1995) theory is that of the Levers being in balance and internally consistent (Grabner and Moers, 2013; Kruis et al 2016).

Kruis et al (2016:40) argue that to be in balance all four levers should be internally consistent and, while not necessarily of equal importance, each should align with the strategy and context. Internally consistent in the context of management control is defined by Grabner and Moers (2013: 408) as having congruence between control systems, such that there is interdependence between them. Thus through achieving internal consistency between risk and these other control systems the organisation will achieve a fit (Milgrom and Roberts, 1995:180) between controls that will give a coherent system.

Limitations raised of Simons (1995) theory are that it does not address informal control processes such as group norms, socialisation and culture; this is important as "social or cultural elements are seen to subtly shift power and hence buffer and modify the influence of forms of control" (Collier 2005:324). Through using Tessier and Otley's (2012) conceptual development of Simons' (1995) theory this thesis will address the gap in the knowledge proposed by Palermo (2017) as to how the Levers of Control are used to manage risks in an organisation; using an approach that is alive to both social and technical control systems in play.

Other limitations include (Berry et al 2009: 6) the fact that Simons' Levers were developed at the senior management level, so the theory may only apply to that level. Whilst the focus of this research is senior board-level risk management, the study will provide insight into the effects on and inputs from other levels of the organisation and so can form a view on the applicability to organisational levels other than senior management.

In summary, this thesis will address the gap in this management control literature through providing case study insight knowledge on how Simons' (1995) Levers of Control apply to risk management (Palermo 2017:144); reporting through the lens of (internal consistency/balance between controls (Kruis et al, 2016; Grabner and Moers, 2013), while answering criticism that the theory as originally proposed didn't address social aspects (Collier, 2005) and might only apply to senior management (Berry et al, 2009) by being mindful of Tessier and Otley's (2012) framework in the research.

2.3.2. Ferreira and Otley (2009) Extended Framework

The second major stream of management control literature identified by Berry et al (2009) is Ferreira and Otley's (2009) extended framework for analysing performance management. In linking the two concepts of management control and performance management the thesis adopts the definition offered by Harris (2018:1) that

"performance management is … the design and implementation of management control systems in organisations to ensure that strategic objectives are met"[4]. In effect, Ferreira and Otley's (2009) framework is for an overarching performance management system (PMS), which can be used to study holistically how Simons' 1995 management control systems (MCS) theory is used within organisations. This 2009 framework has its origins in Otley's (1999) paper, the latter which was tested against three control systems: Budgeting, the Balanced Score Card and Economic Value Added (EVA). That those systems were found wanting, as comprehensive performance management systems, implies that Otley assumed that a control system should address all the issues of objectives, strategies, targets, feedback and rewards/penalties (Dugdale; 2018:17). The 2009 framework, shown here in Figure 2-3, was expanded to include 12 questions: 8 functional ones on ways and means, and an additional four that pertain to the characteristics of the control system itself (information flows; uses of the system; how it changes and the strength of the linkages between components).

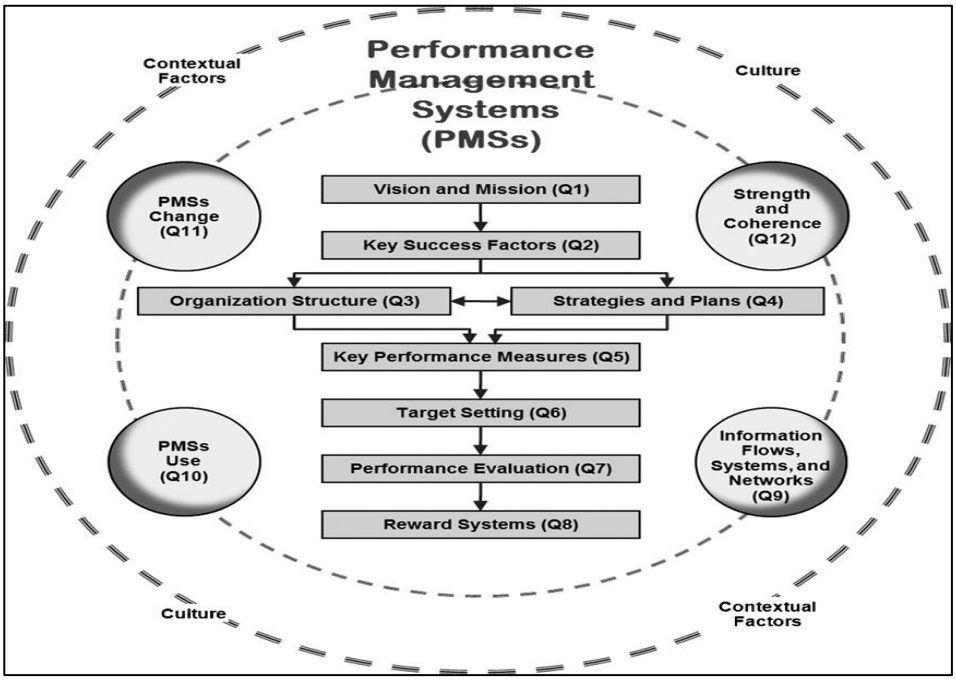

Figure 2-3 The performance management systems (PMSs) framework from Ferreira and Otley (2009:268)

[4] That is to say an organisation monitors progress towards declared strategic objectives through its' 'performance management' of key performance indicators; the systems, procedures, actions taken – either proactively or reactively to performance measures – in managing resources to desired outcomes, so that objectives will be met, are termed 'management control'.

Collier (2005;337), following his longitudinal study of entrepreneurs, criticises Otley's (1999) framework for paying "too little attention to belief system or, more precisely to socio-ideological (Dtillo, 2004) forms of control". Ferreira and Otley (2009) respond to this critique by highlighting that their model makes explicit reference to vision and mission, which at least in part influence belief systems; they do however acknowledge that their framework may give the impression that its focus is on diagnostic and interactive systems, rather than beliefs and boundary systems. Thus, while the framework can be used to uncover both formal and informal management controls, the Ferreira and Otley (2009) framework suggests a rational, administrative approach to control that links success factors through strategy and structure to performance targets, evaluation and reward/penalties (Dugdale, 2018:18).

Collier's (2005) criticism over the absence of focus on socio-ideological aspects of the extended framework is addressed, at least in part, by Broadbent and Laughlin's (2009) conceptual development of Ferreira and Otley's (2009) model; bringing into focus as they do, the underlying nature of a PMS. In doing so they suggest that each PMS will lay on a continuum from transactional at one end to relational at the other, subject to the underlying rationalities of those devising and implementing the systems (Broadbent and Laughlin, 2009:283). Their framework, shown in Figure 2-4, suggests that whenever a PMS is conceptually defined as transactional it is likely to have a high level of specificity about the ends to be achieved (for example through performance measurement targets) and often a clear specification of the means needed to achieve these defined ends (2009:289). In contrast when a PMS is categorised as relational the means are subject to agreement by stakeholder discourse; specificity is only possible if chosen by the stakeholders, hence the thesis' contention that this Broadbent and Laughlin's (2009) perspective is helpful in providing a more explicit focus on the social aspects of performance management.

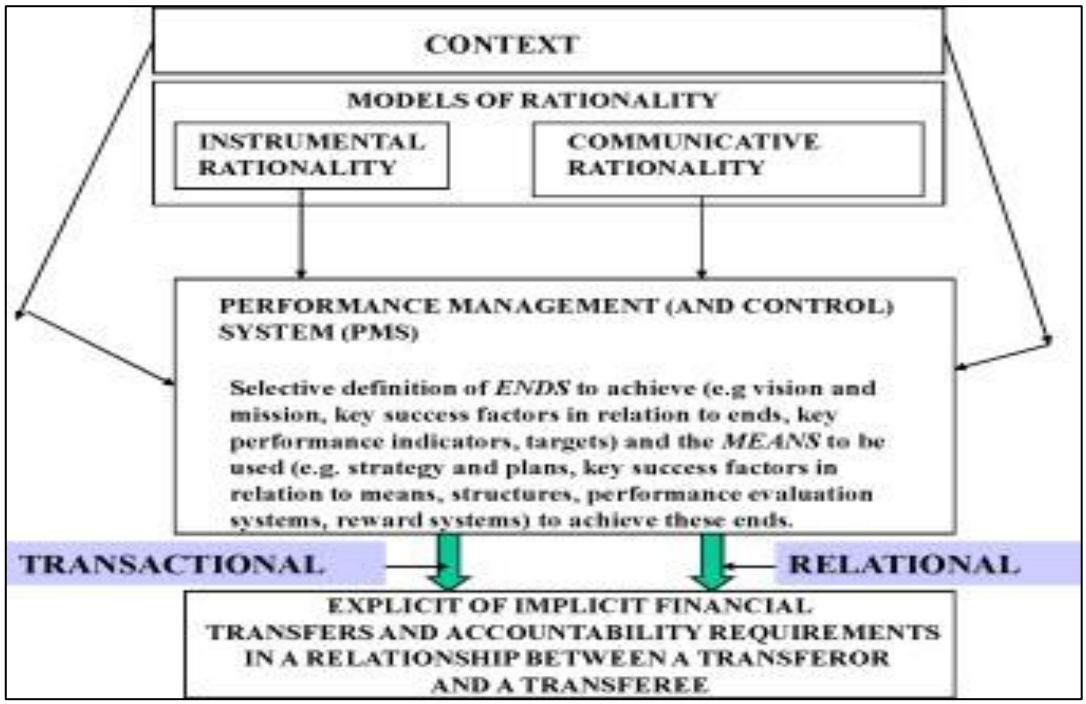

Figure 2-4: PMS a conceptual model taking account of models of rationality; from Broadbent and Laughlin, 2009:290.

More often relational PMS are concerned with long term survival and sustainability of the stakeholders' organisation, whereas transactional models require a certain level of behaviour that preclude less rigorous and precise practices (2009:290) that are normal for a relational approach. Hasslebladh and Kallinikos (2000:705) explain this divergence of approach from relational to transactional being due to "ideals giving way to techniques of control as discourse shifts from... oral language to formal codification". The issue being whether the increased formality still adequately reflects the desired end state that the stakeholders wish to convey.

Broadbent and Laughlin's (2009) conceptual development also makes explicit the influence of context; both in the upper part of the framework – the context of what it is that is being managed – and in the lower part where accountability intervenes in the organisation's stakeholder interactions. Roberts and Scapens (1985:447) define accountability as "the giving and demanding of reasons for conduct". Given the success of any PMS is based on knowing whether its current strategies are achieving the desired outcomes; an accurate understanding of each empowered individual's accountability is essential to allow this judgement to be made – be that in a transactional or relational level of detail.

The utility of a relational perspective, as developed in Broadbent and Laughlin (2014), has resonance in respect to complex situations. They assert that a relational approach

is more compatible with a reflexive process that must be present if lessons and improvements are to be incorporated into the systems used for controlling and monitoring outcomes. By this means a continuing reflexive cycle is established whereby PMC is enacted within an ongoing basis. (Broadbent, 2018:495).

In summary Ferreira and Otley's (2009) extended framework for analysis of performance management systems is held as a key line of academic literature in the research of how management control systems add to an organisation's output. It's basis is not without criticism, most notably from Collier (2005) on the lack of beliefs and socio-ideology influences, and Dugdale (2018) for the impression of administrative rationality; Broadbent and Laughlin's development of the extended framework goes someway to addressing the criticisms and usefully makes explicit the notions of context and individual accountability.

Whilst not addressing a gap in the academic literature on the extended framework per se, this thesis will add to the body of knowledge through providing case study insight into the applicability of Ferreira and Otley's (2009) extended framework for analysing an organisation of national importance – the Royal Navy. Additionally, by using Broadbent and Laughlin's (2009) development, insight can be reported on the transactional and relational aspects of the performance management along with any potential influences of context and accountability.

2.3.3. Behavioural aspects of MCS

Both Simons (1995) and Ferreira and Otley (2009) views of MCS/PMS might be termed a traditional top –down control and feedback approach, where strategies are fed down the organisation and translated into performance measures for individuals (Fitzgerald et al, 2018:259); with some of these controls potentially being softer and entailing a less direct approach. Controls which various theorists have termed interactive (Simons, 1995), cultural or personnel (Van der Stede, 2003), flexibility values (Henri, 2006), or clan mechanisms (Ouchi, 1979). Whatever the term used, all have in common the focus on managing through people and achieving control by securing employee commitment through alignment of goals. That is not to say alignment achieved solely through formal administrative controls, but rather the potential for the wider softer social norms, and informal power relationships to play their part in shaping the organisations outcomes. Thus in researching the processes and measures in place for an organisation's formal and informal controls, it is important to acknowledge their relationship with the people who are interacting with these systems – be that with transactional or relational

behaviours (Broadbent and Laughlin, 2009), either as a manager or employee. Everyone will each have their own perceptions of the organisation and their own personal goals and needs (which may or may not align with that of the organisation); thus, the interdependencies shown here in Figure 2-5 have a consequence for research undertaken.

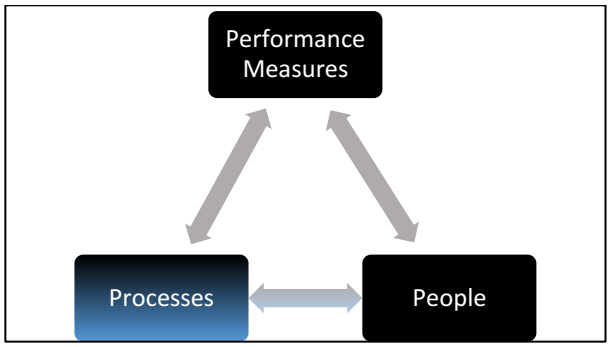

Figure 2-5:Performance management as a set of relationships between performance measures, people and processes. (After Fitzgerald et al 2018:267).

Manager and employee behaviours have been found to be critical to the success or failure of PMS implementation (Mai and Hoque, 2018:218). For managers notable behaviours contributing to success were: continuous and consistent support from the top (Bourne, 2005; Toulson and Dewe, 2004; Tung et al, 2011); balancing multiple conceptions of performance measurement and the interests of multi-constituents within the organisation (Yang and Modell, 2013). In, addition Umashev and Willett (2008) found that leadership style and employee empowerment too have an influence on implementation; weak leadership and inadequate training were found to lead to ineffective communication which led in turn to confusion about operation of the PMS. Further a lack of employee empowerment due to rigid management hierarchy was found to reduce employee involvement and participation, thus decreasing their sense of responsibility; all of which contributed to the failure of PMS implementation.

In summary, the contribution to the body of knowledge that this thesis will make is by providing case study insight into the behavioural aspects of management control (for example leadership, empowerment, top-level support) and its interdependence with the processes and control measures in place within a particular organisation, as they pertain to their approach to risk management.

2.3.4. MCS as a package or system

Previously, in section 2.3.1, this thesis referred to balance and internal consistency between Simons' (1995) levers of controls; which Tessier and Otley (2012) developed

to provide explicit reference to employees. Other authors with an employee focus are Malmi and Brown (2008) who hold that managers can use different MCS to ensure that the "behaviour and decisions of their employees are consistent with the organisation's objectives and strategies" (Malmi and Brown; 2008:290-91). For them the purpose of MCS illustrated in their framework, shown in Figure 2-6, is the influence exerted on human behaviour. In exerting their influence, the authors note that the more than one MCS is likely to be in use, therefore they introduce the concept of an organisation having a 'package' of MCS.

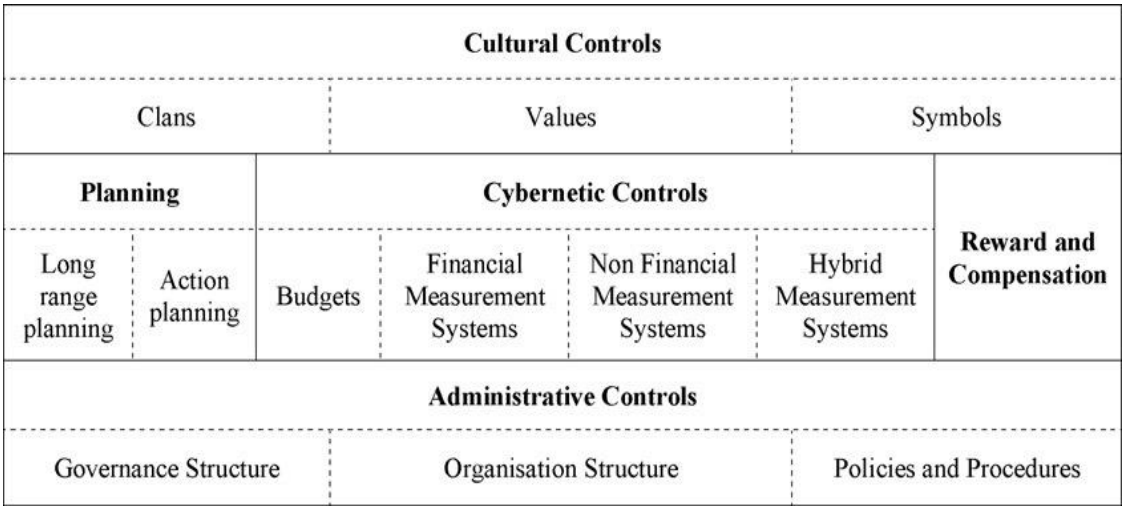

Figure 2-6 Management control systems package. (from Malmi and Brown, 2008:291)

Malmi and Brown (2008:291) use the term package because in most contemporary organisations there are several MCS. If all those were designed and coordinated intentionally, we might call the whole system a MCS. However, the concept of a package points to the fact that different systems are often introduced by different interest groups at different times, so the controls in their entirety should not be defined holistically as a single system but instead as a package of technical and social systems. Referring back again to section 2.3.1, and the language of Simons (1995), to be most effective this package of controls needs to be in balance and internally consistent. Through achieving internal consistency between risk and these other control systems the organisation will achieve a fit (Milgrom and Roberts, 1995:180) between controls that will give a coherent system. Finally, linking the purpose of strategy of the company to their PMS, Adler et al (2018:319) report that performance management literature recognises that successful companies usually have a good 'fit' between their strategy and their PMS design (Govindarajan and Gupta, 1985; Govindarajan,1988; Antony and Govindarajan, 2007; Ferreira and Otley, 2009, Adler,

2011).The notion of package from Malmi and Brown (2008) and a holistic approach to analysis by Ferreira and Otley (2009) suggests that one further performance management framework is worth consideration in this thesis; that offered by Adler (2011) as shown in Figure 2-7, which he believes shares many similarities with Ferreira and Otley's (2009) extended framework (use of descriptors recognised by practitioners and the influence of context; Adler, 2011:253). In this model the explicit reference to employees that Tessier and Otley (2012) develop from Simons' (1995) theory is retained and embellished; with arrows and +/- symbols conveying how employee behaviour is influenced by four key organisational aspects (operating systems; HR processes; organisational culture; and the organisation's structure) as strategy is implemented.

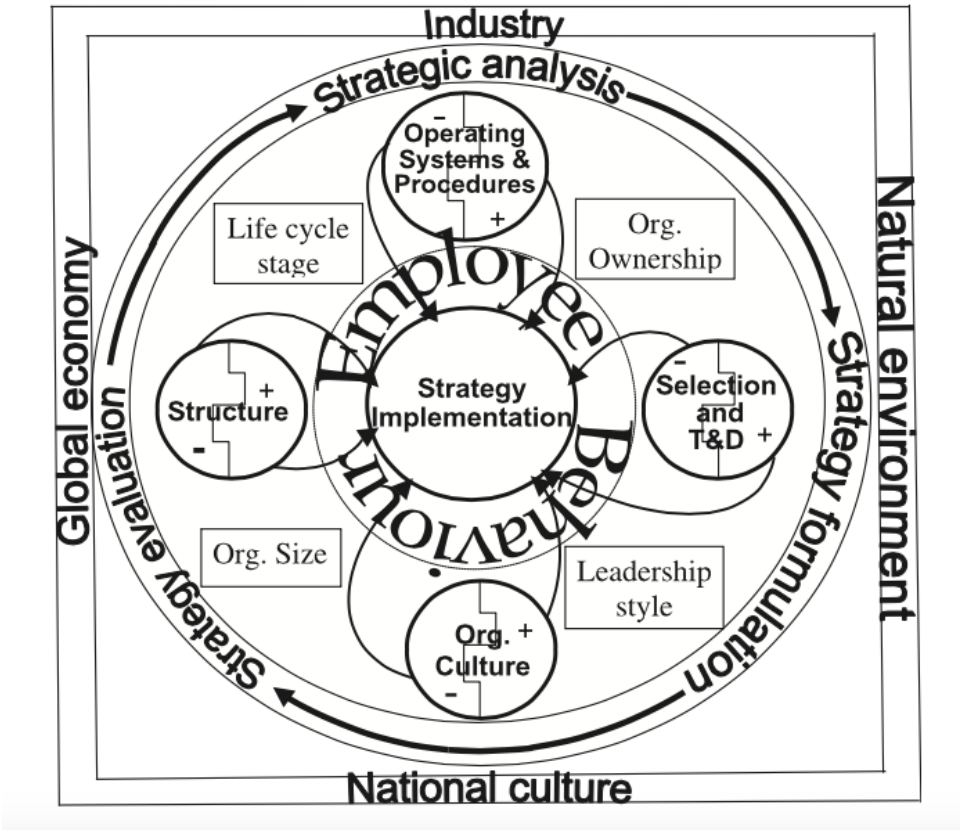

Figure 2-7 A revised framework of performance management. From Adler, 2011:253

Adler's (2011) framework also usefully makes explicit that contingent variables (depicted inside square boxes), both external and internal to the organisation, will have an influence on performance. The framework proposed by Adler (2011) in many respects fuses the important aspects of the models reviewed in this section to date; whilst staying true to delivering strategy (Simons, 1995) and the performance the organisation desires (Ferreira and Otley, 2009) this model also makes explicit: technical and social systems

working in parallel and the importance of employee perceptions (Tessier and Otley, 2012); importance of relational versus transactional perspectives and contextual influences (Broadbent and Laughlin, 2009); and the influences of contingent variables (culture, leadership, structure) (Chenhall, 2003; Woods, 2009). All of which is wrapped up in a framework that conveys a sense of a package of dynamic systems; metaphorically the organisation could be described as a living organism (Dirsmith, M. and Haskins, M., 1991) or maybe a crystal that evolves and conveys a different impression depending on the viewpoint you observe it from (Emirbayer and Johnson, 2008).

In summary there is a strand of management control literature covering MCS as a package of controls; Malmi and Brown (2008) and Adler (2011) are two particularly notable articles in the field. This thesis will add to MCS literature by conveying an authentic case study into MCS use within an organisation; one that captures the complexity present in the Adler 2011 framework.

Contingent variables and the broader aspect of contingency theory are covered in the next section of this thesis.

2.4. MCS: contingent perspectives

Ferreira and Otley (2009) and Broadbent and Laughlin (2009) both make explicit reference to the influence of context as an independent contingent variable for an organisation's performance; Adler (2011) elaborates on this, while differentiating between some of the internal and external contingencies. This section now reviews key contingency theory literature, starting with Otley (1980) before providing an alternative perspective from Dent (1986). Salient points are drawn out from Collier's (2003), albeit primarily private sector, review of contingency literature since 1980s before the section concludes with an overview of Woods' (2009) proposal for a public sector contingency framework.

Contingency theory holds that "there is no universally appropriate system which applies to all organisations in all circumstances" (Otley, 1980:413). Otley's 1980 contingency framework, shown in Figure 2-8, was crafted to consider contingent variables for an Accounting Information System (AIS); however, by replacing AIS with any other management control system of interest it is apparent that the framework has universal applicability for MCS research. Consistent with the thesis' previous section on a package perspective of MCS being required to achieve a holistic view and avoid under-specification (Chenhall, 2003:131). As Otley (1980:421) highlights:

"the folly of attempting to construct a contingency theory of the AIS [AIS can be replaced here with 'MCS aspect of interest'] outside the context of the overall organisational control package… as the AIS must be seen as a part of a wider management information system, itself part of a management planning and control system, all of which are part of an overall organisational control ['MCS' in current parlance] package."

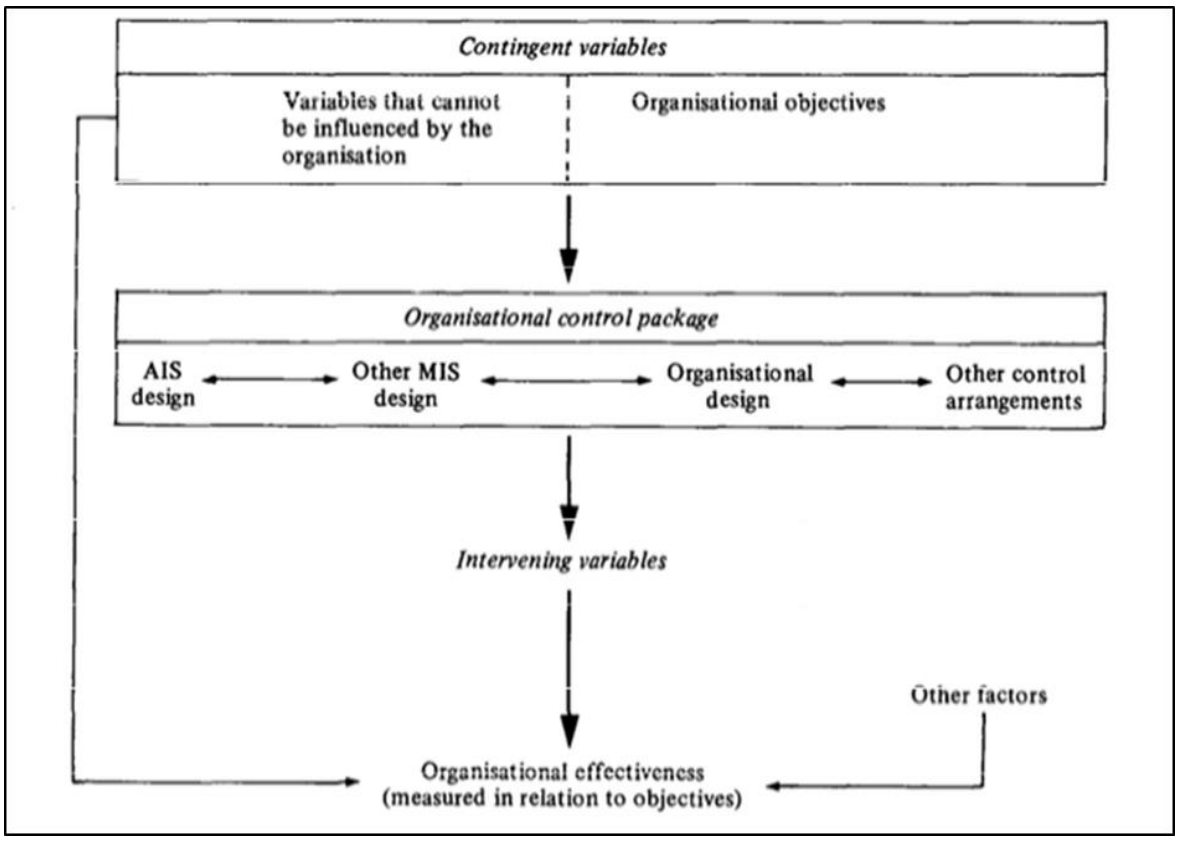

Figure 2-8:The minimum necessary contingency framework; from Otley, 1980:421.

Otley (1980:424) stresses that for the theory to be useful, it must provide insight into the impact the contingent variable has on aiding organisational performance – the dependent variable – through its' influence on management control design. The contingency model proposed by Otley (1980) in Figure 2-8 implies an objective rationality leading one through the analysis of organisational behaviour. An alternative perspective might be held by a social constructivist; one which seeks to understand how meaning is created for participants (Dent, 1986:148). From this perspective, rather than management control being seen as an objective analytical process of mustering resource, it is seen as a process of managing beliefs and meanings through imagery and symbolism (Weick, 1979; Pfeffer, 1981). Through interaction and socialisation, Dent (1986:151) argues, individuals develop shared meanings and explanations for events; using routines to establish common

assumptions to reduce complexity to manageable proportions. This suggests that managing performance in an organisation involves in part development of consensus around explanations and meanings. A constructivist perspective thus raises doubt about the direction of causality in Figure 2-9, where contingent variables and objectives impact on an organisational control package to deliver an effective outcome. Dent (1986) argues that adaptation to contingencies may be costly (both in financial and human resource terms) thus a degree of compromise may be sought with existing structures (Cyert and March, 1963; Thompson, 1967; Pfeffer and Salancik, 1978); and, with perceptions of effectiveness (Pfeffer and Salancik, 1978). Thus effectiveness might be an antecedent condition rather than a consequence of the contingent variable; managers may feel empowered to trial changes to their organisational control structures and information systems because of their confidence in their current effectiveness, rather than vice versa (Dent, 1986:157).

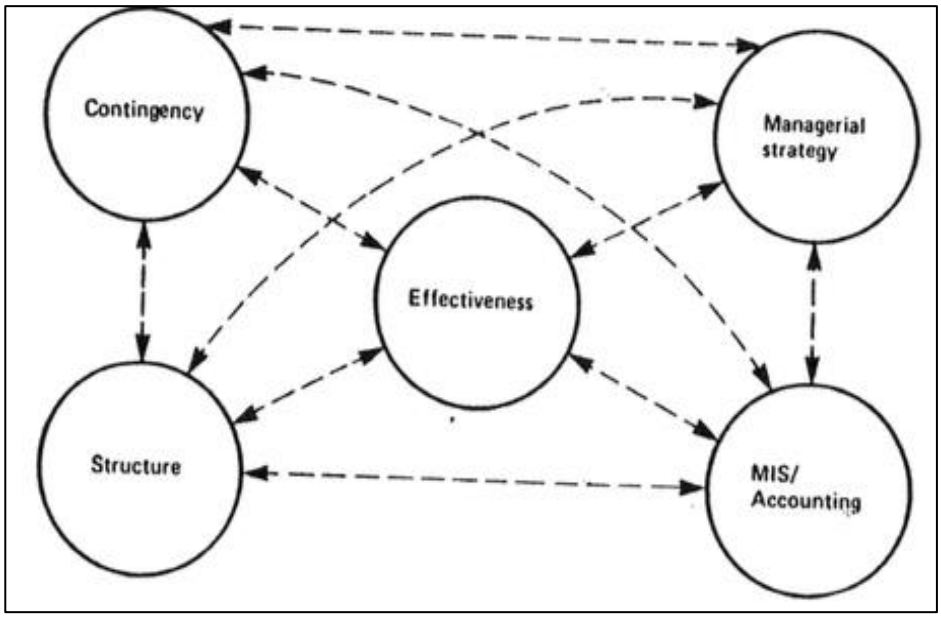

Figure 2-9: A more complete contingency model? After Dent and Ezzamel (1982), in Dent, (1986:157)

It is not this author's intent to provide support for either of the models for contingency theory, merely to offer them both up as valid perspectives on how contingent variables effect an organisation's control package (be that a one-way or two-way relationship), and thus indirectly the performance.

In his 2003 review of contingency-based research on MCS since Otley's paper, Chenhall draws out six contingent variables (environment, technology, size, structure, strategy and national culture) that influence the designs of the MCS adopted to assist desired

organisational goals or outcomes (2003:128). Chenhall points out, however, that while these studies "provide important insights into the extent of adoption of, use and usefulness of MCS...it should not be assumed that the models necessarily lead to enhanced organisational performance" (2003:135). The purpose of this thesis is consistent with those studies reported by Chenhall; namely the author's intent is to convey a rich description of the use of MCS, through the lens of risk MCS, within a particular public sector organisation without necessarily providing irrefutable evidence of the positive contribution made to the organisation's overall effectiveness.

The thesis now draws implications for this research from the six contextual variables identified by Chenhall (2003).

a. Firstly, external environment is a powerful context variable that is at the foundation of contingency research; with Chenhall proposing that the more uncertain the external environment is, the more open and externally focused will the MCS be (2003:158).
b. Technology, defined by Chenhall (2003:138) as how the organisation's work processes operate (included in this is hardware, material, people, software, and tools) has three generic types of importance to MCS: complexity, task uncertainty and interdependence; each of which again having an element of uncertainty associated with it. The theme however was deduced very much from a manufacturing perspective, hence Woods (2009) offers Information Communications Technology (ICT) as a new contingent variable for public sector organisations; though this author offers that the three generic types still have applicability to non-manufacturing industries.
c. Organisational structure is about the formal specification of different roles for members or groups to ensure that organisational activities are carried out (Chenhall 2003:144). As such the structural arrangements influence the efficiency of work and the future of the organisation through their influence on motivation of individuals, information flows and control systems (2003:145). They have been characterised variously as being either mechanistic or organic (Burns and Stalker, 1961); or on a continuum of bureaucratic – to – non-bureaucratic. Once structures are in place then discussions will be influenced by from the authority afforded to each of the managers involved (2003:145). Thus strategy might follow structure (Donaldson, 1987) or at very least structural arrangements will have an influence on information flows that may shape the future of the organisation (Bower, 1970). A sub-set of the organisation structure contingent variable worthy of note is that of leadership. Brownell (1983:319)

reports on the interplay between leadership style and participation of employees in budget processes; finding that employee participation could be either high or low

(though the former was associated with higher job satisfaction and performance) if it was balanced by an appropriate leadership style. This aspect of the organisational structure contingent variable thus speaks well to Tessier and Otley's conceptual development of Simons' (1995) theory, where they break out managerial intentions from employee perceptions.

d. As an organisation grows so managers are required to handle greater quantities of information, to the point where they have to institute formal controls through rules, documentation and specialisation of roles and functions (Child and Mansfield, 1972) to achieve the requisite administrative control (Bruns and Waterhouse, 1975).
e. In terms of strategy, MCS have the potential to aid managers in assessing the optimal combination of contingent variables to enhance performance through assisting in the formulation, implementation and monitoring of the required strategic choices; however, Chenhall (2003:152) reports few studies have researched these issues (exceptions being Simons, 1987, 1991, 1994).
f. Finally, culture. Though Chenhall (2003:152) restricts considerations to that of national culture, he does acknowledge that this aspect extends contingency research into a more sociological viewpoint. While the research he reports has produced mixed results on the effects of (national) culture (2003:153) he notes that the variable of organisational culture offers promise for research (Martin, 1992). Defining the latter has been the subject of considerable academic debate, with most definitions recognising the socially constructed nature as a phenomenon expressed in patterns of behaviour. Of the many definitions available, Schein's (1992) view of organisational culture as "a layered pattern of shared basic assumptions manifested in shared values and organisational artefacts" is both popular (Wankhade and Brinkman, 2014:4) and adopted as the lens through which to view organisational culture in this study.

Chenhall (2003:148) states that "much can be learned from linking MCS research agendas with work of human resource management researchers"; in the above review of Chenhall's authoritative 2003 paper on contingency research into MCS, this thesis has endeavoured to do so through the lens of the human angle: the influence of structure and leadership; the impact of size on formal authority; and the presence of an organisational culture or sub-cultures.

Contingency theory, as outlined above, was developed in a private manufacturing organisation context (Woods, 2009: 75). Private sector performance tends to be judged on their financial impact, whereas public sector organisations are monitored for impact on service provision and tend to approach risk management in an intuitive way (McPhee, 2005), therefore Woods (2009) proposed that the six original contingent variables may not be well suited to the public sector context. Her case study research of a large public sector service provider identified two new contingent variables of central government policy and ICT along with size – the latter being in common with the private sector, as reported in earlier contingency research findings (Merchant, 1981; Bruns and Waterhouse, 1975) A summary of the private-public sector variables identified to date is shown in Figure 2-10:

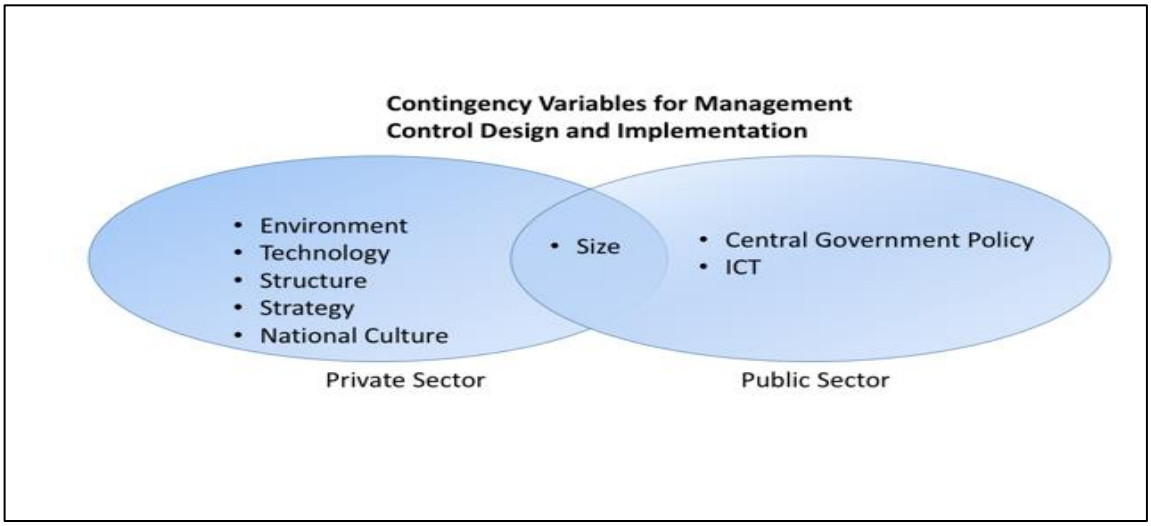

Figure 2-10: Contingency Variables for Management Control design and implementation in private and public sectors (after Woods, 2009:75)

The public sector organisation being researched in this thesis will monitor risk impact against 4 categories: capability (analogous to service provision in Woods' 2009 case study); finance (as credited to the private sector); reputation and health and safety. Following Woods' argument that because of managing different risks to objectives, the contingency variables for public and private sector may differ; this thesis contends that, whilst noting the basic structures are common in large organisations (Collier et al, 2006) the variables with influence in this exploratory case study may yet be different to those previously identified.

In summary the contribution to the body of knowledge on public sector contingency theory from this thesis will be to provide case study insight into the contingent variables influencing the management control in the organisation being studied - the Royal Navy.

2.5. Linking MCS literature themes to those from risk literature

The focus of this thesis is risk management; researched from the perspective of management control. In Levers of Control Simons (1999:92) explicitly states "The levers…are the mechanisms managers can adjust to control risk as a company pursues its strategy"; while his theory has been used extensively (Bisbee and Otley, 2004; Widener, 2007; Tessier and Otley, 2012; Mundy 2010) in the past decade the uses in risk management have not been explored so far, with limited exceptions (Palermo, 2017). With the premise that risk management is merely a component of an organisation's overall approach to managing the business, this thesis studies the notion of internal consistency, balance (Grabner and Moers, 2013; Kruis et al, 2016) and fit (Milgrom and Roberts, 1995) between risk control and an organisation's other management control systems.

This exploratory study takes a public sector contingency perspective (Woods, 2009) to look at the risk system within the overall organisational context; reporting on an organisation's calculative culture needing to be appropriate, or complementary, within the mix within an organisation's risk framework (Mikes, 2009, 2011).

The literature reviewed in section 2.3.1 of this chapter on the complementarity balance and internal consistency characteristics of MCS raised by Grabner and Moers (2013) and Kruis et al (2016), it will be shown next, links to the literature on framework and the complementary role of risk culture (Power et al, 2013) as influenced by the behavioural aspects of leadership and the influences on processes and measures (Fitzgerald, 2018). To date this is not explicitly denoted in any literature, hence the gap in the literature addressed by this thesis. The next chapter on risk literature draws attention to what the control is being exercised to achieve, using Boholm and Corvellec's (2011) relational risk theory; a parallel to the success factors that performance should be measured against in Ferreira and Otley (2009) covered above. These latter authors in their extended framework are implicitly referencing what is of value (to the object at risk).

Finally, the holistic approach, in the style of Adler (2011) as reviewed in this chapter, provides a perspective on the complexity of gaining an organisational-level view; which should be born in mind when reviewing the literature covered in the next chapter on the mix of elements that constitute a risk management control system.

2.6. Gap in the Knowledge

The literature reviewed in this chapter has been in support of research into risk management within a large hierarchical organisation, where the risk package is part of a broader system of management control. To that end two of the most respected theories of management control/performance management were reviewed – Simons (1995) and

Ferreira and Otley (2009) – along with the pertinent conceptual developments. In the case of Simons (1995) this was the concept of complementarity and the requirement for MCS to be in balance and internally consistent with each other (Grabner and Moers (2013) and Kruis et al (2016)). Whilst Ferreira and Otley (2009) theory was developed to make explicit the notion that alternative models of rationality may influence the way in which MCS are applied (Broadbent and Laughlin, 2009). Finally, Adler's (2011) revised framework was reviewed, with its' unification of many previous taxonomies and use of descriptors more likely to resonate with practicing managers. The gap in the knowledge is that these frameworks and theories have not previously been applied to researching how the Royal Navy approaches risk management; thus this thesis will provide unique case study insight into this organisation base on the literature outlined above.

In parallel to an MCS perspective for researching risk management, the author adopts a contingency stance. Chenhall (2003) offers six contingent variables that influence management control; Woods (2009) offers a further three in a proposed public sector contingent framework based on her case study of a local authority. This thesis reports the exploratory aspects of a case study into the Royal Navy, an organisation of national significance, that was mindful of the contingent variables present in that organisation – and whether they match those offered by Chenhall (2003) or Woods (2009) or perhaps were newly identified.

The literature review led to, and continued to support, the need for Research Question 1 (How are management control systems used in portfolio risk management?). Primarily derived from two sources:

> Simons (1999:92) "The levers…are the mechanisms managers can adjust to control risk as a company pursues its strategy"
>
> Palermo (2017:144) "Levers of Control have never been explicitly tested in relation to ability of defined control systems to help organisations manage risks"

The detail of the research design and focus for data collection was embellished by the conceptual developments of Simons' (1995) theory; the need for a holistic view of management from Ferreira and Otley (2009), with consideration of other models to help achieve that view; and the potential for a contingency perspective to provide insight into the nuances that influence the particular approach adopted by the Royal Navy.

A summary of the contribution in addressing the gaps in the knowledge from extant literature on management control theory is provided at Table 2-1:

Management Control theme	Literature Review Section	Gap in literature knowledge	Potential contribution from this thesis
MCS Design			
Levers of Control: applicability to risk	2.3.1	*Levers of Control* Simons (1999:92) explicitly states "*The levers…are the mechanisms managers can adjust to control risk as a company pursues its strategy*	Case study insight
Levers of Control: applicability to risk	2.3.1	Palermo (2017:144) "*Levers of Control have never been explicitly tested in relation to ability of defined control systems to help organisations manage risks"*	Case study insight
Levers of Control: - social and technical modes. - manager/ employee perceptions. - Time constraints	2.3.1	Tessier and Otley (2012:182) *"the revised framework…is mostly conceptual and based on prior literature. Therefore, it will need to be tested by using it in empirical studies"* Widener (2007:776): "*Time and processing capability are two constraints faced by top managers…monitoring multiple control systems can require tremendous managerial attention, thus top management has to choose where to focus their attention.*	Empiric case study 'test' of framework
Levers of Control/MCS complementarity	2.3.1	Kruis et al (2016:27) "*the power in the four levers …does not lie in how each is used individually, but rather how they work together, how they complement each other and how they achieve balance.*" Grabner and Moers (2013:418) *"complementarity theory…[MCS] internally consistent...interdependence…*	Empiric case study examples of balanced and internally consistent MCS; using holistic/system s approach

		the value of one [MCS] depends on the use of another" (2013:418) *"for contingency theory to develop further, a bridge between the reductionist [single MCS approach] and systems approach needs to be built"*	
Management Control theme Ferreira and Otley (2009) extended framework for analysis	**Literature Review Section** 2.3.2	**Gap in literature knowledge** Ferreira and Otley (2009:263) *"provides a useful research* *tool…[that]…allows a holistic overview to be taken"* (Dugdale, 2018:18). "*framework suggests rational, administrative control that links success factors through strategy and structure to performance targets, evaluation and reward/penalties"* Broadbent and Laughlin (2009:293) conceptual development of the extended framework with underpinning *"nature of a PMS…alternative models of rationality… transactional or relational." "while…primarily conceptual, its 'middle range' nature means that the empirical application and use of this conceptualisation is of paramount importance"*	**Potential contribution from this thesis** Empiric case study examples of rationality underpinning use of MCS; using holistic research approach.
MCS package/holistic research	2.3.3	Malmi and Brown (2008:291) use the term 'package' *"because in most contemporary organisations there are a number of MCS".* Ferreira and Otley (2009:275) *"strength and coherence of the links within a PMS is crucial to understand its operation".* Adler (2011:253) a revised framework *"unifying the previous taxonomies...[using] descriptors*	Case study insight into the holistic research approach to MCS

		more likely to resonate with practicing managers"	
Behavioural aspects of MCS	2.4	Fitzgerald et al (2018:267) *"Performance management as a set of relationships between performance measures, people and processes"*	Case study insight
Management Control theme	**Literature Review Section**	**Gap in literature knowledge**	**Potential contribution from this thesis**
Contingent Variables			
Contingency theory approach to MCS research	2.3.4	Chenhall (2003:127) *influence of environment, technology, size, structure, strategy and national culture on management control;* Woods (2009:75) *a contingency framework for the public sector with three variables: central government policies, information and communication technology and organisational size.*	Case study insight Case study insight

Table 2-1 Summary of gaps in the body of MCS knowledge to be address by this thesis; source the author.

3. Literature Review: salient literature on risk management for understanding the model for portfolio risk management in Navy Command

Risk management themes from the literature reviewed in this section:

Purpose of risk management

- Boholm and Corvellec (2011): the relational theory of risk.
- Weick (1995): sense making within organisations.
- Verhezen (2010): moral imperative to manage risks
- Power (1996, 2003a, 2003b, 2004a, 2004b, 2005, 2007): demonstrable auditability by organisations.

Risk Management system design

- Mikes and Kaplan (2015): risk management package of processes, meetings and tools.
- Verhezen and Dequae (2017:280): the interplay between risk types, the role of the risk function and the prevailing mindset;
- Power (2007), Mikes (2009, 2011): risk 'calculative culture';
- Mikes (2011), Hall et al (2015), Mikes and Kaplan (2015), Kaplan and Mikes (2016): roles of the risk function.

Contingency perspective

- Woods (2009): a contingency theory for public sector risk management.
- Linsley and Kewell (2015): role of the leadership's mindset in risk management.

3.1. Introduction

This chapter reviews prior risk management literature. Risk management is a very broad topic and potentially there is an extensive risk literature that might be drawn on. As the thesis is focused upon organisational risk management system design and the purpose(s) underpinning the design of risk management systems, this informed what prior work was most relevant to draw on. The literature reviewed in this chapter is that required for the reader to understand the findings reported and discussed in this thesis; that is not to say that all this literature had been reviewed prior to commencing data collection. Rather this is an inductive study where, using a reflexive methodology, the author returned to the literature as the case study progressed to investigate further aspects of interest that were revealed by his observations, discussions and review of the organisation's documents.

The previous literature review, in chapter 2, covered management control systems (MCS) theory, in order to inform how risk management connects with other management processes within an organisation. Major theories were reviewed, with discussion on themes of complementarity (balance and internal consistency), behavioural aspects of MCS, control as a package of systems, and how a contingency perspective might be appropriate for a holistic approach to researching MCS. The observations made in that chapter have a direct bearing on the review detailed in this chapter, as the thesis is that risk is but just one example of a management control, and – along with every other control – cannot be researched in isolation but rather needs to be studied within the context of the organisation as whole.

Palermo (2017:141) states that risk management is widely viewed as a central part of an organisation's strategic management: "a process that ensures that organisations address the risks linked to their activities with the goal of achieving sustained performance" across all areas. Noting that centrality the selection and review of relevant risk management literature to this research was shaped by the following influences:

- risk management should not be viewed as an end in itself, but rather a necessary management function to ensure desired performance/objectives are achieved, and thereby inform resource decision-making; relational theory of risk is thus of relevance (Boholm and Corvellec, 2011).
- the research is focused on board-level risk management; at an organisational level therefore there are many influences on the effectiveness of the approach: leadership style, processes, tools and role of the risk function; the writings of a few notable authors (Linsley and Kewell (2015) plus Mikes, Hall and Kaplan (writings various)) cover extant knowledge on these aspects.
- the contingent nature of an organisation's risk management approach, such that it is sympathetic to its' context; Chenhall's (2003) review of contingency theory, albeit primarily drawing on private sector inputs, and Woods' (2009) public sector risk framework are both germane to this thesis.

There are interdependencies between the various influences. Figure 3-1 below depicts the influences as sides of a triangle, where the purpose is to manage the risk to the object of value (and, as Power would hold, in doing so demonstrate the auditability of the organisation), which is achieved by the two supporting strands of management control and risk management practices as the organisation seeks to make sense of the required responses All of this is underpinned by a contingent approach which is tailored to the specific needs and context of that organisation:

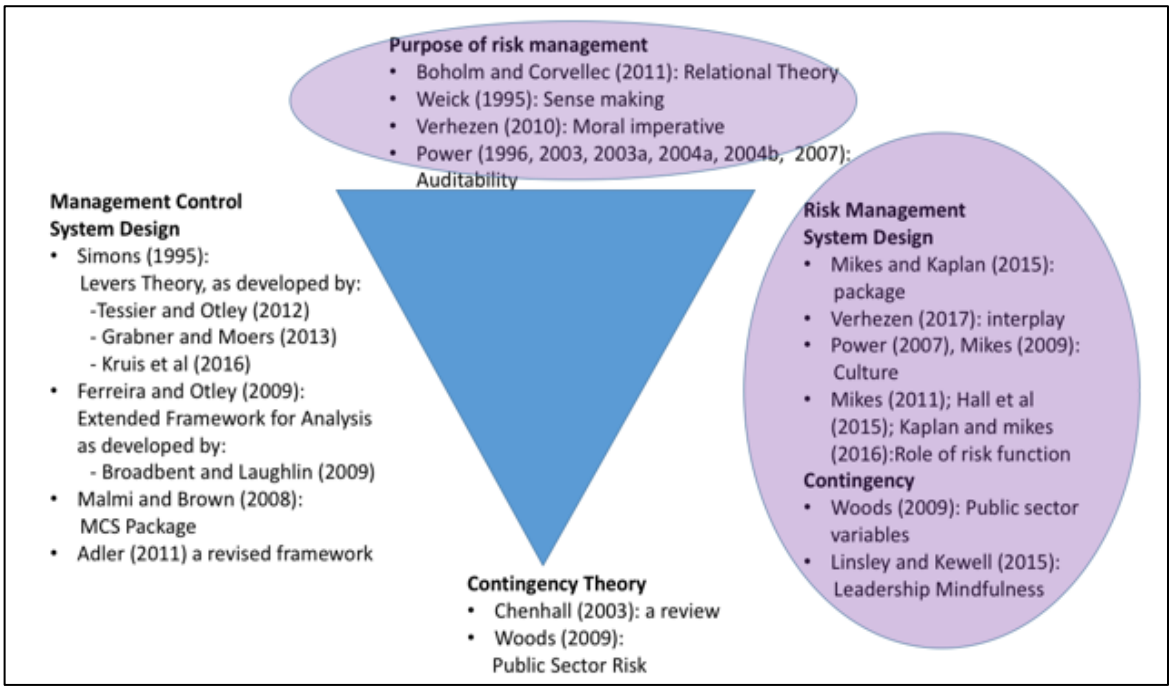

Figure 3-1Salient literature for the research into risk management within the Royal Navy (source: the author)

With management control literature having been covered in chapter 2, this chapter on risk management literature is structured to broadly mirror the same format: introduction to the research area; context; the purpose of risk management (managing risk to an object; being demonstrably auditable; a moral obligation to do so); risk management system design (framework; tools; culture; risk function role); a contingency perspective; linking to MCS literature; and finally a summary of the gap in the knowledge and the contribution that this thesis will make.

The chapter is structured thus:

3.2. The Context

3.3. Building on recent risk literature

3.4. Purpose of risk management

3.4.1. I: Managing the object at risk

3.4.2. II: A contribution to sense-making

3.4.3. III: A moral imperative to manage risk

3.4.4. IV: A requirement to be auditable

3.5. Risk Management System Design

3.5.1. Perspectives and Appetite

3.2. The Context

Organisational encounters with risk are a "routine and systematic part of daily organisational life" (Vaughan, 2005:33); as such this thesis is concerned with everyday processes and contributes a "back office study" (Power, 2016:3). It is a study of the evolution of a risk management model used by an organisation: the leadership, culture, framework and contribution of risk 'experts', over the course of a financial year. It is a 'how' and 'why' study of the risk management that took place within a public sector organisation of national significance. By adopting a work lens the thesis focuses on the "outcomes of action to the actors involved [at the group level] and the [management] action itself" (Phillips and Lawrence, 2012:227). Thus this study is less on the specifics of the risks held by the Royal Navy, and more on the way in which they were managed. This is not to suggest a presumption of coherent practice, rather the case study offers a narrative of "actions and routines through which organisational actors makes sense of risk, of themselves and their roles, and collectively try to enact institutional scripts" (Power, 2016:8). This is messier than business schools and text books would have us believe. Whilst it is true that risk management is moderated by individual risk perceptions, these are "embedded in collective processes of assembling risk objects for identification and action; processes which are contingent on values, technologies and devices, and on discourses for representing and talking about risks" (Power, 2016:15).

Those discourses, according to Beck's risk society thesis (Beck, 1992 translation), take place with each individual taking responsibility for their own actions in the face of risk; and with a cultural plurality of risk perceptions where we are all our own risk managers. In effect everyone has a view on risk. Encounters with risk are as much about an organisation's

nature and limitation of ability to organise, as it is about the uncertain environment (Hutter and Power, 2005:2). Ontologically organisations, and the processes they employ, are often perceived as separate to the risks they seek to manage; yet framing theory (Kahneman and Tversky, 1979) suggests a number of elements – context, sequence, attention capacity – where the two are inextricably linked. Risk management takes place in organisations that are internally heterogeneous, with structures that are temporal and boundaries between what's inside and outside of the organisation that are blurred (Hutter and Power, 2005:7). Thus everyone is touched by risk and everyone involved in a risk decision is influenced by their current and previous experiences; as a consequence, there are different cultures of risk understanding within an organisation and occupational sub-groups will have different mental models of the organisation and its significant risks (Hutter and Power, 2005:8).

Within that heterogeneous context, this thesis' focus is on the leadership, managerial and administrative practices that have the explicit purpose of representing and making decisions about risks; practices that depend critically on management systems of representation and on instruments for framing objects for the purpose of action and intervention (Power, 2007:7); the action and intervention that require decisions about the future, and the corresponding allocation of responsibility for those decisions. It is about an organisation operating in an uncertain environment. In this respect uncertainties become risks when they enter management systems for their identification, assessment and treatment; while the expectation is that the risks are to be treated within management systems (2007:5), "when uncertainty is organised it [too] becomes a risk to be managed" (2007:6). For that management to occur, attention must be triggered, information must be interpreted, and response actions coordinated (Hutter and Power, 2005); all of which can be (adversely) affected by "rigidities of core beliefs, managerial distractions, disregard for the views of outsiders, lack of regulatory compliance, and difficulties in assembling critical information" (Power, 2007:10).

This then is the context for this thesis study into an integrated organisation-wide risk management system, where the internal commitment of sub-cultures to a common 'mission' need to co-produce and manage the risks to that mission. "From this point of view, risk is not a thing or an independent object, rather the management of risk is a constitutive sense-making project for the organisation as a whole" (Hutter and Power, 2005:9). Sense-making from data that is often incomplete or incoherent, that is conveyed by limited representations that demand interpretation, and which challenges what can be imagined and what currently makes sense (2005:11).

3.3. Building on recent risk literature

Palermo (2017) reports that risk management today is viewed from a broad performance perspective (Spira and Page, 2003; Holt, 2004; Woods, 2007) focusing on control over strategy (Dickinson, 2001; DeLoach, 2004; Nocco and Stulz, 2006; Woods, 2007), aiming to cover all threats and opportunities (Beasley et al, 2006) with an emphasis on an integrated approach that improves managers' ability to oversee the portfolio (Sobel and Reding, 2004); an approach that cascades down throughout the whole organisation via line management (Beasley et al, 2006; Woods, 2007). Palermo (2017:141) notes three themes that show how risk management is viewed as a central part of an organisation's strategic management: "a process that ensures that organisations address the risks linked to their activities with the goal of achieving sustained performance"; these themes are: (1) Simons' (1995) levers of control (LOC) theory; (2) the internal control perspective; and (3) the risk management framework.

In addition to the three strands of risk management identified by Palermo (2017), there is an enduring strand of research into organisations that uses a contingency perspective. The reader will recall from MCS literature reviewed (in chapter 3) that contingency theory holds that "there is no universally appropriate system which applies to all organisations in all circumstances" (Otley, 1980:413). Thus, the contingency strand of studies, the present thesis included, seek to "provide important insights into the extent of adoption of, use and usefulness of MCS" (Chenhall, 2003:135)".

Of the three strands identified by Palermo (2017), with the levers having been covered previously in chapter 2, this section now outlines the contribution of the literature within the latter two streams and contingency considerations, ahead of more detailed coverage in section 3.4 for internal control considerations along with alternative views on the purpose of risk management; on frameworks and risk management system design covered in section 3.5; on contingency variables of leadership's mindset in section 3.6.

Firstly, the internal control stream of literature reported by Palermo (2017) concerns corporate governance. Organisations studied by Collier et al (2006) revealed two insights of relevance: risk management tended to arise from institutional and internal processes rather than increases in risk in the environment; and heuristic methods of risk management were used more than procedural and systems-based approaches, especially subjective judgements based on experience. The latter, Corvellec (2009:286) states, being contrary to the "unspoken assumption" in much risk management research of the central role of formal processes and instruments. This strand of literature raises two important issues:

that of established management control systems being subject to internal control and audit; and the requirement for senior leadership to gain assurance for the integrity of the risk management information provided to them - information that is created through a blend of heuristics and formal processes. Thus, the challenges of enterprise governance (Van der Stede, 2009) and the provision of reliable scrutiny through the use of existing controls to assess risk (Collier and Berry, 2002) is particularly pertinent to the extensive literature on auditability (Power, 2004, 2007, 2009, 2016) and its influence on the purpose of risk management. The literature review in section 3.4 offers two contrasting views on the purpose of risk management: one, championed by Power (2004, 2007, 2009, 2016), holds that the genesis of risk management is an obligation to be demonstrably auditable; the second, that risk management provides a more purposeful output for an organisation involving management of objects at risk and a contribution to sense-making within an organisation, whilst fulfilling an organisation's moral imperative to manage its risks. The two views of course are not mutually exclusive, and it maybe that the purpose of an organisation's risk management system is a combination of demonstrable auditability of their management of objects at risk.

Palermo's (2017) second stream of literature (Mikes, 2009, 2011; Woods, 2009; Arena et al 2010; Tekathen and Decow, 2013; Palermo, 2014) looks at the frameworks used by organisations to manage their risks across the entirety of the business. The literature review in section 3.5 considers frameworks along with the broader theme of risk management system design. The thesis looks in detail at the sub-set of work by Mikes and others (Mikes, 2009, 2011; Hall et al 2015, Mikes and Kaplan 2015; Kaplan and Mikes,2016; Power 2007) into the various elements of a risk management system: culture, framework and the role(s) of the risk function.

The final major theme in this literature review is that of a contingency perspective to risk management. The previous chapter reviewed literature on a public sector contingency perspective (Woods, 2009) for management control (as pertaining to risk). This chapter, in section 3.6, builds on that review, by looking at the influence of the leadership's mind-set (Linsley and Kewell, 2015) over the risk system through determining the mix within an organisation's risk framework (Mikes, 2009, 2011); and on the interactions between risk and other management and information control systems (Mikes, 2009; Arena et al, 2010). These interactions speak to the concept of complementarity (Grabner and Moers, 2013; Kruis et al, 2016) covered previously in chapter 2. In respect to risk management systems' theory, a holistic view of these constituent aspects of risk management needs to be taken

in order to understand their interconnections and thus contributions to the package of risk management system in play.

3.4. Purpose of risk management

This section now reviews two opposing views of the purpose of risk management. Firstly, the purposeful management of objects at risk, and assisting sense making, while subscribing to a moral imperative to manage risks effectively; secondly, performing risk management in order to demonstrate the auditability of this aspect of being a 'good' organisation.

3.4.1. I: Managing the object at risk

The thesis has at its' heart the study of risk as a social phenomenon and the challenges of effective communication. Central to this is the Relational Theory of Risk (Boholm and Corvellec, 2011; 2016); a theory with three conceptual elements: (1) a risk object deemed to pose a risk; (2) an object at risk, that is something held to be of worth; and (3) a relationship of risk, established by an observer between an object and an object at risk. The authors argue that risk objects resemble hazards, in that they are identified as dangerous through a creative act in the social space according to the cultural norms, beliefs and values (Douglas 1992); a hazard that will evolve as new dangers are identified and new objects considered of worth. Indeed, Shaw (2000) holds that assessments of the relationship of risk reflect an observer's perceptions and relative priorities that influence their 'knowledge' and understanding of the risk object and object at risk.

Risk then is socially constructed, where a relationship of risk describes a hypothetical account that might occur if certain causal conditions are met. Historically the notion of risk has been linked to gambling, trade and maritime insurance and the mathematics of hazard and chance (Boholm and Corvellec, 2011:181); where knowledge was required to inform decisions and actions under conditions of uncertainty. Boholm and Corvellec's (2011) theory thus is relevant for this thesis, as the depiction of risk in the Royal Navy is through statements constructed with clauses for Cause – Effect – Impact; that give rise to assessments of "there is a risk that [Cause] will have an [Effect] resulting in [Impact]". Where 'Cause' is the risk object; 'Impact' more fully can be read as impact on the object at risk; and 'Effect' is the causal relationship between the two objects. In this way risk is "an epistemic construct that serves to categorise external objects in relation to other objects depending on what we know and believe regarding the contingent character of the potentially harmful causal relationship involved" (2011:182).

The central tenet of the relational theory of risk is that, “for the world to make sense, people need to differentiate and categorise events, objects and beings in time and in space” (2011:185); classification expresses historical views, moral judgements, political priorities and practical needs. Thus, how participants frame and understand what they observe depends of a combination of their personal histories, functional positions and surrounding circumstances (Goffman, 1974). This thesis will contribute to the theory by examining how “the social actor in action in the lived-in world” (Lave, 1988:13) derives a collective understanding of risk priorities. In the next section, the literature will show how ‘sense-making’ contributes to that collective understanding.

3.4.2. II: A contribution to sense-making

In order to blend the science of preventable risks with the art of addressing strategic ones, requires an organisation to make sense of the risks to the objects held at value. Sense-making occurs when individuals put stimuli into some kind of framework that enables them to “comprehend, understand, explain, attribute, extrapolate and predict” (Starbuck and Millliken,1988:510); they do this in order to “structure the unknown” (Waterman, 1990:41) through “the reciprocal interaction of information seeking, meaning ascription, and action” (Thomas, Clark, and Goia, 1993:240). Indeed, March (1984:18) argues “organisational life is as much about interpretation, intellect, metaphors of theory, and fitting our history into understanding of life as it is about decisions and coping with the environment”. Sense-making is then about the ways and processes people use generate what they interpret (Weick, 1995:13;17) and Weick offers seven characteristics for it:

1. Grounded in identity construction;
2. Retrospective;
3. Enactive of sensible environments;
4. Social;
5. Ongoing;
6. Focused on and extracted by cues;
7. Driven by plausibility rather than accuracy.

These characteristics touch on the work of some of the theorists covered in other sections of this thesis: Ferreira and Otley’s (2009) extended framework (1 and 3);

Simons' (1995) Levers of Control (4); Hall et al's (2015) risk tools (6); and Mikes' (2011) risk calculative cultures (7).

The seventh characteristic, plausibility, speaks to a pragmatic calculative culture; this is covered in more detail in the review of research system design literature on the uses of appropriate management information tools or cues (characteristic 6) that are interpreted heuristically using previous – retrospective – experience (characteristic 2); all in culture of continuous improvement (characteristic 5). This seventh characteristic of sense making is explicit in Isenberg's (1986) studies into managerial thinking, which showed the importance of plausible reasoning; he describes it thus:

> "Plausible reasoning involves going beyond the directly observable or at least consensual information to form ideas or understandings that provide enough certainty… There are several ways that this process departs from a logical-deductive process. First the reasoning is not necessarily correct, but it fits the facts, albeit imperfectly at times. Second, the reasoning is based on incomplete information."
>
> (1986:242-243)

The incomplete information is particularly germane to the management of risk, and the provision of 'enough certainty' is a leadership function. Sense-making, as a perspective, is about "plausibility, pragmatics, coherence, reasonableness, creation and invention" (Weick 1995:57). People need to filter, if they are not to be overwhelmed with data (Miller 1978); this thesis provides cases study insight into one organisation's sense making over the course of a financial year.

In the next section, however, the literature will show that sense-making management of risks is not sufficient for an organisation, instead there is a moral aspect to the function.

3.4.3. III: A moral imperative to manage risk

The previous section alluded to the role of culture and trust in effective risk management approaches; approaches that the first section noted had to address objects at risk. This section now looks at the work of Verhezen, and Verhezen and Dequae, on the influence of an organisation's moral imperative to enact risk management.

Verhezen (2010) draws a distinction between formal and informal governance arrangements. Whereas the more formal processes promote compliance-driven behaviour, informal governance tries to (a) build relationship networks that enhance the reputation of the individual and or organisation, and (b) rely on resource-building

capabilities of board members, management and employees (2010:188). Verhezen contends therefore that formal internal governance promotes a culture of monitoring and controlling, whereas informal governance contributes to enhancing coaching, learning and development of trusting relationships. Figure 3-2 (adapted from Verhezen, 2010:189) represents how governance practices currently straddle the

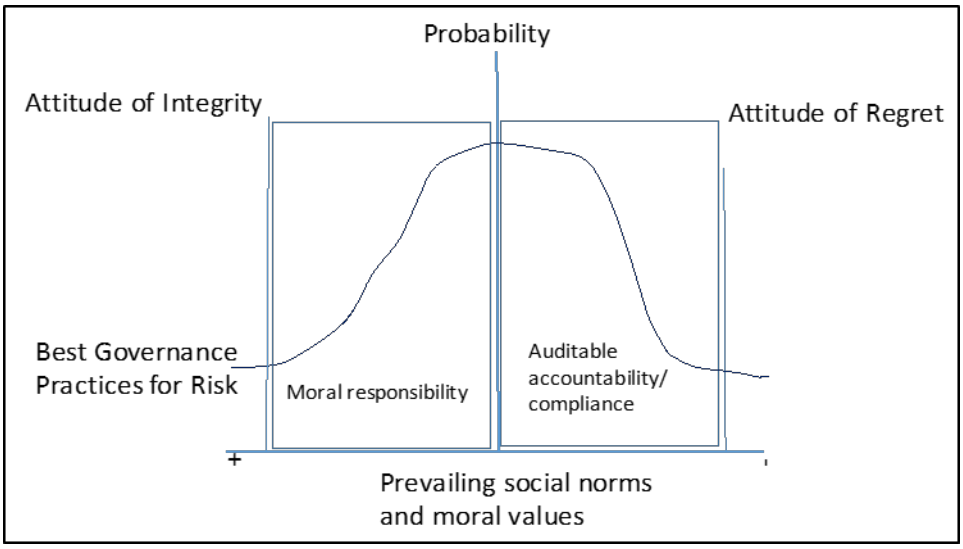

Figure 3-2:Continuum of moral responsibility and legal compliance (after Verhezen, 2010:189)

mindsets of needing to comply and holding moral responsibility, due to the prevailing social norms and values. The implication from the figure is that there is an opportunity for leadership to make more use of informal governance controls to move the organisation's overall mindset 'further to the left' on the x-axis in Figure 3-2, towards best practice of managing with integrity.

The thesis now builds on the notion of managing with integrity, by considering Verhezen and Dequae's (2017:280) model for risk, risk culture and risk appetite for creating and preserving value is represented; shown here in Figure 3-3. The figure shows how preventable risks, are treated by the risk management function identifying tolerable exposure positions, often with the mindset of an adherence to internal control governance; in contrast strategic risks can be viewed within the context of the organisation's overall appetite for risk, with the leadership artfully considering choices to deliver the best value. Building on the 'integrity' imperative of the previous paragraph, the figure can be interpreted as revealing a need for complementarity between management of preventable risks and those risks that more directly affect strategic choices; as all have, to greater or lesser extent, an influence on value creation and thus a moral responsibility to manage as best as resources and priorities allow.

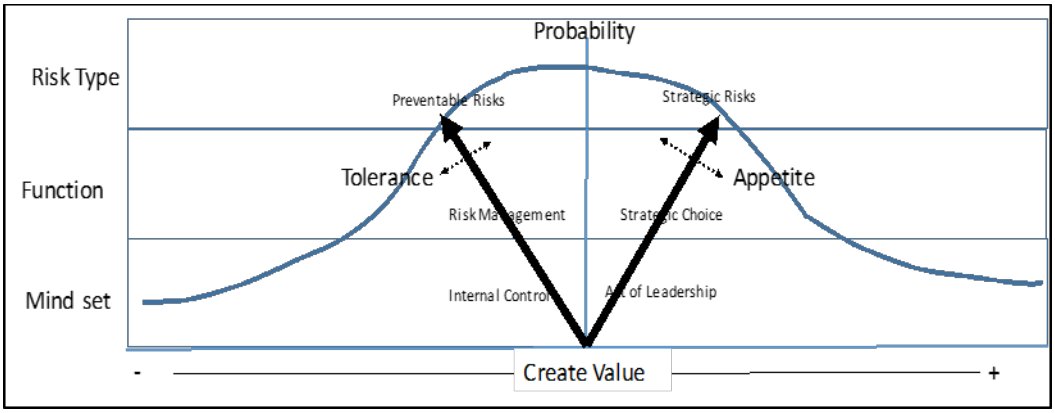

Figure 3-3:Interrelationship between risk types, function and mindset (after Verhezen and Dequae, 2017:280)

Thus while a compliance mindset might be associated with a reduced moral code to act with integrity (from Figure 3-2), and the underpinning of preventable (operational) risk management (from Figure 3-3), Verhezen (2010: 187) holds that "moving beyond a compliance-orientated organisational culture... is part of good corporate governance… [as it is] …informal mechanisms based on relationship building [that] are more likely to achieve moral excellence". The implication from this viewpoint is that in managing their preventable risks organisations need to adhere to compliance standards in order to maintain their legitimacy; but that this reductive approach is perhaps not sufficiently intelligent to meet the needs of an organisation. Instead more of the expansive 'art' approach is required, so that the implications that the decision has for the for the objects of 'value' for the organisation is considered; and more use of 'informal governance' so that learning and trust are enhanced (Verhezen, 2010:188-9).

This thesis will contribute to the body of knowledge in two aspects: (1) through contributing case study evidence of the implications of the interplay between risk types, the role of the risk function and the prevailing mindset of 'compliance' versus 'artfulness' on risk management system design (see section 4.5 below) (Verhezen, 2017:280); (2) by potentially providing insight into where the organisation's governance of risk lies on the continuum of moral responsibility and legal compliance (Verhezen, 2010:189), with implications for the purpose of an organisation's portfolio risk management.

In the next section, however, the literature will show that a moral management of risks is not sufficient for an organisation, instead there needs to be a demonstrable – or auditable- system in place.

3.4.4. IV: A requirement to be auditable

Power (2003a) refers to the trend of increased "responsibilisation of organisations" in the 1990s, by which he means an enhanced capacity for self-observing and self-regulating, with systems able to respond to external pressures in order to meet the demands to demonstrate responsibility and responsiveness (2003a:160). He credits auditing as a self-regulating system; a function whose form is constantly evolving, but importantly where a consistent constituent part is to represent problems and solutions that can generally be regarded as legitimate (2003b:392).

The subject matter appropriate for auditing also has evolved. In addition to what is termed as first-order measurements – namely those relating to economic events – Power (2004a:773) identifies a world of second-order measurement which includes, amongst others, risk management. Second-order measurement "consists in extensive and dense systems of circulating statistical objects in a hyper-reality of calculation" (Vollmer, 2003). The world of second-order measurement is not solely the preserve of experts; instead many routine or lay measures of performance are employed throughout every aspect of our lives, thus generating an expectation that these too can be employed in the work place. "These measures have a commonsense appeal and could said to be popular or democratic. Embodied in charters for public service, the intention is to empower citizens by making the performance of public services more transparent" (Power, 2004a:773). While it has become readily accepted that "there is more to managing than measuring, at the same time the latter retains its grip" (2004a:779), and in many instances the role of the narrative has been lost. Power's assessment is that "we probably measure more things in more detail than is functionally necessary and we do so for reasons that are often cultural and psychological, rather than technical" (2004a:780).

Power (2004b:21) suggests that rise of internal control and audit cultures has taken the unfortunate direction of being used for defensive purposes; endeavouring to risk manage everything in an attempt to manage an organisation's reputation. This shift in focus from risk analysis/calculation to oversight and accountability, Power (2007:153) contends, is as a consequence of organisations being judged as materially weak and failing in their legitimacy should their internal control regime be found to be wanting. Risk cannot simply be managed, it requires articulation in a system which is auditable and inspectable (2007: 162). The unintended consequence of this new direction is a 'tick box' approach which signals, through the virtues of self-discipline, a legitimate account with an absence of vice (2007:168); but one that has a defensive mindset that spawns

the “use of needlessly detailed standard check lists and pursued without regard to weighing costs against benefit” (2007:153).

Power (2004b:27) offers a warning of failure in purpose from the audit focused risk management approach outlined above; and calls for it to be replaced by an ‘intelligent’ one; one with the capacity to challenge the ideals of the models and assumptions inherent in extant risk management standards. He suggests (2005:148) a role for the risk function of “reflexive governance”; very much in keeping with the trend for self-regulation and responsibility, but where risk is merely aligned with internal control rather than being driven by it. Through this means an expansive risk culture and mindset might be achieved, in contrast to the reductive nature of audit (2007:177). Power (2007:180) holds that “risks only have reality within social systems which have expectations of decisions and actions, expectations which crystallise in demands for management systems for risk”. Furthermore, authors (Weick, 1993; Linsley and Kewell, 2015) have suggested however that an organisation needs a range of styles in order to provide an analytic focus that addresses both probabilities and also feelings and social constructions of risk. Thus, while auditability of an organisation requires its practices to be made legible as a whole (Scott, 1998) in the case of risk aspects, particularly those intangible assets, auditability is manufactured by placing trust in the oral and written representations from internal and external experts (Power, 1996). Perforce then auditability is a social construction which uses belief in the precision of evidence presented along with trust in the presenter (Power, 2007:164).

This section reviewed a strand of literature which held that effective risk management needed to be demonstrably transparent on the rigour of the system that underpinned decision making in order to conform to the need for auditability. It highlighted that an expansive mindset, associated with meaningful cultural approach, is at odds with the reductive remit of audit and internal control. Thus, this research into the risk management organisation in place within the Royal Navy will contribute to the body of knowledge through insight into the impact of governance arrangements, and the requirement to demonstrate auditability, on the risk management system design.

3.5. Risk Management System Design

The review so far has covered the need for organisations to demonstrably manage risk to objects of value, in a way that is coherent with making sense for the organisation as a whole, and such that it is auditable. In the following sub-sections, the thesis reviews the relevant literature on the salient constituent parts of a risk management system: the

perspective or attitude towards the risk management and the use of a risk appetite statement; the framework required for an effective system; risk management tools; calculative cultures; and the role of the risk function. Kaplan and Mikes (2016: 15) suggest that, as a whole, these constituent parts should contribute to a risk management system that:

- Has the organisation's beliefs, objectives, priorities and values at its' heart;
- Uses a 'risk appetite' to understand how much and what kinds of risk can be tolerated;
- Monitors risk-taking behaviour against its espoused appetite.

3.5.1. Perspectives and Appetite

Hall, Mikes and Millo (2015) in their study of two banks look at how the risk function exerts influence in executive decision-making processes; this thesis contends that the influence gained by the risk function can be taken as a proxy for the organisation's perspective on the relative importance of risk management, thus how the risk function exerts influence is of relevance to the study of the wider system. Where risk 'experts' compile and generate information for managers, whose attention is a sought-after resource, the former need to guide the attention of the latter (Howard-Grenville, 2007). Hall et al (2015) find that successful interaction revolves around the ability of risk managers to use tools to represent and transfer knowledge (2015:6); with most influence being exerted by engaged toolmakers whose tools effectively communicate whilst they themselves remain necessary for a full understanding within the executive (2015:18). In an earlier paper (Mikes, Hall, Milo, 2013) the authors highlight that in order to achieve maximum impact, the risk managers' effective tools and their own translation role needs to be supplemented by a teamwork ethos, such that the relevance of their own and others expertise is made explicit, as well as trailblazing new opportunities to employ risk tools (rather than remaining complacent with that which is in place) (2013:74). These four characteristics, and their relative contribution, of an influential risk manager are depicted in Figure 3-4, showing that the risk function in Saxton Bank exerted more influence than their counterparts in Anglo Bank, through exhibiting higher competencies in all four of the contributing characteristics This thesis will provide evidence of a risk management function's ability to influence, and by proxy the perspective of the organisation towards the risk system; this time in the context of an organisation of national significance.

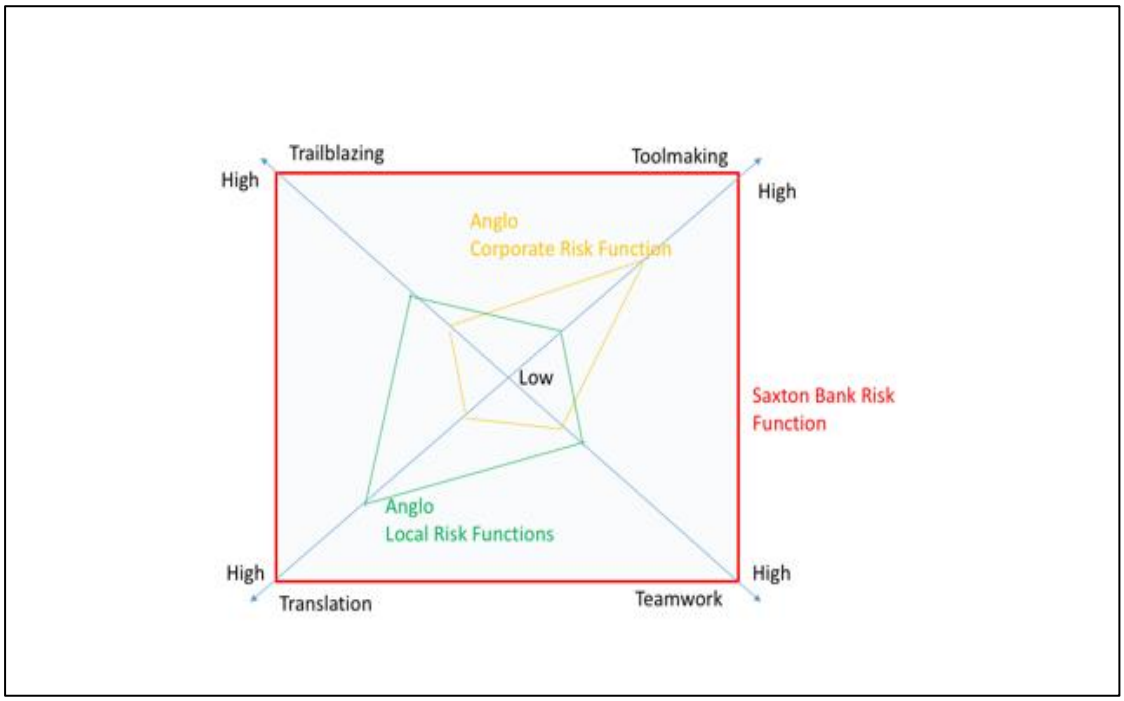

Figure 3-4: Competencies for influence of risk function (after Mikes et al, 2013:74)

A second theme that complements an organisation's perspective on the contribution that can be made by a risk management system, is that of an organisation's risk appetite statement. Much guidance is available on what an appetite is; but less so on how to 'operationalise' it. In 2009, the National Association of Corporate Directors (NACD, 2009) published a report that said, "a risk appetite statement resides at the heart of an effective risk management program and is linked to the organisation's overall risk management philosophy and strategic ambition." Similarly, the Basel Committee on Banking Supervision (Bank for International Settlements, 2011:5) advised that boards "should approve and review a risk appetite and tolerance statement for operational risk that articulates the nature, types, and levels of operational risk that the bank is willing to assume." Whilst COSO's ERM framework (COSO, 2012:1) defines risk appetite as "the degree of risk, on a broad-based level, that a company or other entity is willing to accept in pursuit of its goals." But how to determine and articulate the level which an organisation is willing to accept as being within its' appetite? Kaplan and Mikes (2016:16) hold that "firms reveal their actual risk appetite not when making boiler plate statements, but when they have to act on their underlying value priorities … in circumstances that force them to make trade-offs". Quail (2012), through his practitioner experience at a Canadian hydro-electric power industry, offers a conceptual model and methodology for how actual behaviours might be monitored with risk management tools such as the radar diagram shown in Figure 3-5.

Figure 3-5: Declared versus Realised Risk Appetite (after Quail, 2012)

The concept has five levels of risk appetite ratings – labeled from 0 to 4 – each with an associated philosophy defined and a propensity to accept or trade detailed. Thus, through knowing what is important ('Object of value'; reported previously in section 3.4.1) can the amount of risk held against priorities be determined and assessments made on whether appetite thresholds are likely to be exceeded. Subsequently, actual behaviour be measured and adherence to espoused values monitored. In terms of wider research into risk appetite operationalisation, the literature seems sparse with the exception of Slagmulder (2017:179). Her report on the benefits of integrated risk reporting showed that receipt of an integrated risk report was generally preferred amongst respondents the formalisation of a risk appetite remains a fairly rare practice (Slagmulder, 2017:180). Without this expression of 'appetite' it is hard to see how an organisation expresses how close it is to reaching or breaching its tolerance for the total amount of risk exposure.

This thesis will contribute to the body of knowledge on the influence of a risk function, as a proxy for the organisation's perspective on the risk system and provide insight on how risk appetite is being addressed through case study evidence from an organisation of national significance.

3.5.2. The (relative) importance of a Framework

Mikes and Kaplan (2015) confirm that risk management "has become a crucial component of contemporary corporate governance…[though] risk management approaches are largely unproven and still emerging." (2015:37). Their longitudinal study, albeit based in the private sector, asserts that "the effectiveness of risk management ultimately depends less on the guiding framework than on the people who set up,

coordinate, and contribute to risk management processes" (2015:38). Mikes and Kaplan's (2015) paper usefully discusses three aspects of risk management: the role of the risk management function within an organisation; the constituent parts of a risk management framework and the types of risk to be managed. With the role of the risk function being addressed subsequently in sub-section 4.5.5, the other two aspects are summarised and interpreted for use in this case study here:

Risk Types

The types of risk that can be managed are:

- **Preventable.** These are routine operational breakdowns or from employees' actions. Mikes and Kaplan (2015) definition compares closely with the Basel 2 definition of operational risk as "direct or indirect loss resulting from inadequate or failed internal processes, people and systems or from external events" (Bank for International Settlements, 2011:2). Given that external risks are covered below, this thesis suggests that preventable and operational risks are one and the same; given that the latter is more familiar for those in Navy Command it will be used in preference here on in.
- **Strategic**. These are associated with the execution of the organisation's strategy, which in this case study is the Maritime Strategy to 2035. Kaplan and Mikes argue that external risks (see next point) are managed using 'envisionment'. This thesis suggests that as strategy is dependent on external factors, so can 'envisionment' be applied to the management of strategic risks.
- **External.** This final category comes from events that the organisation cannot influence, though some may be closely entwined with the strategy execution; envisionment plays a role in their management – with managers being able to contemplate how the organisation can best respond once the vision has been articulated.

The risk management framework

The risk management framework comprises the following components:

- **Processes.** Risk identification, assessing and prioritising can take place interactively or through self-assessments using data-bases and/or risk registers.
- **Controls.** Many companies are reported to link their risk management process to major resource allocation and performance measurement processes.

- **Meetings**. Some organisations conduct formal risk reviews annually or biannually, whilst others hold risk reviews throughout the year or even continuous risk monitoring; with logic dictating that the frequency of the process needing to match the nature of the risks being monitored. Mikes and Kaplan suggest however that this common-sense approach can be lost in a one-size-fits-all rules – based compliance culture.
- **Tools.** Most organisations use multidimensional visualisations to quantify their risks; Mikes and Kaplan (2015) conclude that the choice of tool utilised will be contingent on (1) availability of the data and knowledge about a particular risk and (2) how relevant and reliable the available tools are in the opinion of those using them. This theme is further elaborated in Hall (2015) where "accuracy of risk information per se was not critical to the process becoming influential – it was the relevance and communicability of the tools that the risk managers had developed that was of central concern" (2015:19).

This thesis will contribute to the body of knowledge on the effectiveness of a risk framework utilised in an organisation of national significance for varying types of risk.

3.5.3. Risk Map Tools

Knowledge codification is the process of making experience explicit (Suddaby and Greenwood, 2001:938); knowledge commodification develops this by making that knowledge abstract such that it assumes a more "universal and portable form" (2001:939). Knowledge is exchanged within a framework the purpose of which is to "coordinate various functions and sources of information to improve consistency and precision in addressing risks across an organisations" (Demortain, 2016:46). Central to the effectiveness of the framework are the 'tools' that are used to represent the risks being considered.

Risk maps are not formal models, rather they seek to tap the 'folk risk intelligence' in an organisation; as such their contribution comes from facilitating consensus through a process of challenge (Power, 2007:80). Risk maps provide visual calibrations using colour coding to capture management attention and prompt plans for risks with the highest impact and/or likelihood or combination thereof; they help create a conversation where none had existed before (2007:81). Organisations however, find it difficult to articulate and implement those action plans, with action columns in risk spreadsheets often being cosmetic (Sharman 2006). The challenge then is to represent the risks that the board needs to consider, without conveying too much of a hyper-rational sense of

orderliness, such that they both facilitate board members articulating their concepts of risk and support governance monitoring of the agreed response plans.

Kewell and Linsley (2017:15) states that the "ability to assess risk, instill trust and foster reassurance represent timeless, quintessentially human properties"; Kydd (2000) claims that few social processes can take place without recourse to these interrelated considerations. Processes, including those for risk identification and communication, that make use of the ability to tacitly identify, and then emote, responses to danger (Adams, 2004); where the term Umwelt is used as an overarching descriptor (Partan and Marler, 2002). For humans umwelt involves acting more on a collective basis, necessitating group interaction, reciprocity and trust (Partan and Marler, 2002; Adams, 2004). Increasingly in organisations these interactions are facilitated by software solutions that promise enhanced interoperability and custom-built decision support facilities. There is however a premium for their adoption into new ways of working: more human capital is involved, and knowledge is re-categorised in ways that increase rather than decrease risk opacity; thus an appropriate change effort is required along with the software introduction, including adoption of an appropriate organisational culture (Scott and Perry, 2006:4-9; Wagner et al, 2006; Bamberger, 2010). Without these enablers technological innovations become overburdened with a weight of innovation they can't meet, becoming scapegoats – along with the associated 'experts' – for failure (Higgs et al, 2000).

In summary, technology and software systems have a place in enhancing collaborative working in decision-making regarding risk, but the increased efficiency is only truly worthwhile if the appropriate focus on the cultural element of trust and reassurance is engendered through the use of appropriate tools. This thesis will contribute to the body of knowledge on the role and influence of risk tools, and the potential for their contribution to the influence of the risk function, through case study insight from an organisation of national significance.

3.5.4. Calculative cultures

Slagmulder (2017:180-1) reports interview findings from five multi-national companies in Europe; board-level respondents confirmed the importance of the 'tone at the top' for enhancing the information flow between different levels of the organisation, with the board being "instrumental in creating a risk culture at all levels…that encourages open communication and constructive challenging of assumptions". The findings have documented the debate over the extent of, and requirement for, 'trust in numbers'

(Porter, 1995); as with Power (2007:120), on “deeper inspection this trust is more complex and varied”. Power (2007:120) details two communities: calculative idealists and calculative pragmatists. The former typically regard numbers as aiming to represent ‘truth’, and who seek robust risk analysis. Pragmatists, in contrast, “are more tolerant about risk and control scoring systems” and can accept “crude approximations” believing them to “steer behaviour and action in the right direction” (2007:121). Certainly in the case of managing operational risk, calculative pragmatists regard it as “more akin to a craft than science” where a soft approach “makes sense in environments where it is critical to identify and catalogue risks which lie at the limits of formal knowledge” (2007:121). In this way an approach that is consultative and inclusive, and thereby harnesses the knowledge and wisdom base within the organisation, can provide powerful feedback to inform risk mapping (Cagan, 2001).

Power (2007) offered alternative logics of calculation, which Mikes (2009:20) conceptualised into calculative cultures of either quantitative sceptics or quantitative enthusiasts using her field work in two private sector banks; the latter striving for robust and accurate analysis, whilst the former – having less trust in numbers (Porter, 1995) use figures as trend indicators which they seek to complement and often overwrite with senior manager discretion experience and judgement (Mikes, 2009:22). Senior officers develop their own personal philosophies based on their institutional and professional backgrounds (Power, 2007); should however the leadership be supportive, then Mikes (2011:240) suggests that through liberation from seeking the holy grail of accurate numbers, sceptics are freed to search for critical uncertain data, that will inform the organisation’s forward looking agenda. Interestingly Mikes also suggests the two calculative cultures are not mutually exclusive, thus opening the potential for the two to co-exist within one organisation – though she notes that different expertise is required to deliver each of them (2011:242). In this way the most appropriate approach might be employed at different layers of the organisation, or perhaps for different types of risk.

This thesis will contribute to the body of knowledge on risk calculative cultures, and the potential for one or more cultures to exist, through case study insight from an organisation of national significance.

3.5.5. The risk function

Those within the risk function operate within the organisation’s calculative and organisational culture as the organisation’s risk ‘specialists’. The creation of roles within an organisation is part of the politics of ‘doing something’ in response to an

organisational problem; creating a dedicated role is "part of problem definition and its subsequent management" (Power, 2005:139). In terms of risk, Lee (2000:3) suggests that what is required is:

> "someone who can coordinate the company's risk management efforts…it is more synthetic rather than an analytic task…a leader, facilitator and integrator. In this role, the [risk function] serves as a coordinator, more than a manager, of risks".

Through being attuned to the professional language that is important to an organisation, risk management becomes a critical organisational storyline (Hajer, 1997) or conversation (Black, 2002) through which existing practices can be re-expressed and validated, and controlled through an organisational discourse (Power, 2005:145). In any organisation however, there are expectation gaps between what a role achieves and what is required of them; similarly, with perceptions of what can be legitimately claimed as in scope for their area of responsibility. Thus constant work is required to maintain the legitimacy and functionality of the risk function role. Power (2005:145) offers a model of collibration (Dunsire, 1993), where the risk function is the pessimistic conscience of the organisation as it seeks to reach agreement for a period of time.

What then does the literature say about what an organisation needs from its risk experts and the risk management system in place? Kaplan and Mikes (2016) offer the view that an organisation needs a "revealing hand" of risk management; one that promotes careful thinking about risk through intrusive, interactive and inquisitive processes that:

- Challenge assumptions about the organisation's internal and external world;
- Communicate risk information aided by tools that 'work' for the decision makers;
- Draw attention to, and help close gaps, that other control functions leave unaddressed; thereby complementing without displacing – existing management control practices. (2016:11)

Noting Mikes' previous observation that two calculative cultures might co-exist, Kaplan and Mikes (2016:12-13) offer, from their studies of a number of organisations, three potential roles for the risk management function: (1) an independent overseer, such as might fulfil the role of audit/internal control; (2) a business partner with domain experience, possibly located within a central support function, that can help with resource allocation and business case approvals; and (3) an independent facilitator that helps set the risk agenda and communication of risk up, down and across the

organisation. One might therefore envisage an independent overseer having a quantitative preference, as they conduct their audit and internal control checks; a business partner perhaps spanning the two persuasions: a head for numbers to ensure that the business case 'stacks up' whilst understanding the strategic narrative; and a facilitator, whilst requiring sufficient grasp on the management information to ensure it supports the agenda, might have a natural tendency towards creating a narrative and shared understanding of what the information is conveying.

This thesis will contribute to the body of knowledge on the role of the risk function through case study insight from an organisation of national significance.

3.6. Risk Management System Design: the need for a model

Drawing together the management control system literature with the above literature on risk system design the author suggests there is a need to develop a model to provide structure when designing a bespoke risk management system for an organisation, one that is integrated to other facets of organisational life rather than just the off-the-shelf risk management methodology offered in much practitioner literature (in the case of MoD/Royal Navy that is OGC, 2007 and later editions).

The thesis showed previously, in chapter 1 on the public sector context, that formal risk management processes, techniques and roles have become increasingly diffused in the public sector (Fone and Young, 2000); where private-sector-derived approaches constitute a "new world of generic risk management" (Hood and Miller, 2009:3) that are considered to be an aspect of good governance (Palermo, 2014). 'New' risk management has two features to emphasise: (1) it is generic and abstracted from specific circumstances in order to convey ideas of formal procedure and order (Power, 2007) and comprises "go anywhere frameworks that aim to standardise and formalise organisational processes" (Hood and Miller, 2009:3); and (2) it is "integrated and holistic" with an implication of achieving a shared corporate approach to identifying and managing risk across the organisation (Palermo, 2014:324).

'New' risk management is not without its challenges, which the model proposed in this thesis seeks to address. Firstly, Mikes (2012:19) argues risk management guidelines "talk to the high ground but fail to address the complexity, incongruity, context-dependency, and politicised nature of real organisations". The model proposed in this thesis acknowledges those failures and addresses them by incorporating the complexity from the models of Ferreira and Otley (2009) and Alder (2011), as well as the contingency perspective of Chenhall (2003) and Woods (2009).

Secondly, (Palermo, 2014:325), states that in the public sector "regulatory initiatives formalise generic processes to be adopted…but public sector organisations need specific risk management tools that address the organisational complexity of public service delivery"; he suggests "there is a need to examine the organisational context in which risk management is enacted". The model in this thesis was derived from taking a management control perspective for the research into one public sector organisation of national significance, thus very much situated in organisational life and with the actors – the management and other employees - brought into focus from drawing on Tessier and Otley's (2012) management control framework. Having examined, and developed new, risk management tools for use within that organisation the model also makes explicit the need for the specificity Palermo (2014) mentions.

The model was developed with the purpose of assisting the dissemination of understanding of the knowledge gleaned throughout the case study. "A model is an implicit metaphorical description of how some part of the world is thought to be arranged" (Gilbert, 1976:282); they are not therefore purported to be 'verified theories', rather they act as artefacts to help impart shared knowledge.

3.7. Risk Management: a contingent perspective

This section reviews the differences and similarities between contingency approaches within public and private sectors. Contingency was selected for this thesis "on the premise that there is no universally appropriate (in this case risk) system which applies to all organisations in all circumstances" (Otley, 1980:413). Contingency theory, developed in a private manufacturing organisation context, identified five variables that influenced management control design and implementation: environment, technology, structure, size and strategy (Woods, 2009: 75). Given that private sector risks tend to be judged on their financial impact, whereas public sector risks are monitored for impact on service provision, Woods (2009) proposed that the 5 original contingent variables may not be well suited to the public sector context. Her case study research of a large public sector service provider identified two new contingent variables of central government policy and ICT along with size – the latter being in common with the private sector. A summary of the private-public sector variables identified to date was shown in Figure 2-10 (p.40).

The public sector organisation being researched in this thesis monitors risk impact against four categories: Capability (analogous to service provision in Woods' 2009 case study); Finance (as credited to the private sector); Reputation and Health and Safety.; being empowered since Lord Levene's 2011 Defence Reform; a form of New Public Management

reform (Cordery, 2017) aimed at increasing decision-makers' accountability. Following Woods' argument that as a consequence of managing different risks to objectives, the contingency variables for public and private sector may differ; this thesis contends that, whilst noting the basic structures are common in large organisations (Collier et al, 2006) the variables with influence in this exploratory case study may yet be different to those previously identified; in which case the thesis may be able to develop Woods' (2009) public sector contingency theory through proposing additional variable(s).

3.7.1. A potential contingent factor – leadership's mindfulness

The understanding of risk and responsibility within organisational settings is influenced by the differing concepts of organisations: externally it might appear homogeneous, whereas the internal reality is one of heterogeneity and differentiation. The practical task of management requires organisations to take account of the different ways employees see risk, and to recognise the situated nature of their understanding of risk (Hutter, 2005:90). That recognition involves comprehending that the various groups, that the organisation comprises of, may encounter a risk with differing perspectives. Taking responsibility for risk management then, needs to include taking responsibility for recognising the differences (2005:91); an approach that Linsley and Kewell (2015) term 'mindfulness'. Linsley and Kewell (2015) offer 'mindfulness' and 'leading on risk' (rather than 'leading risk') as potential approaches for managing multifaceted 'wicked' risks successfully. The mindful approach is where managers have sufficient self-assurance to create their own approach to risk management to fit their organisation, rather than following the prescriptions of risk management standards on a rote basis. Acknowledging that a perfect system is unachievable they actively encourage debate as a way of navigating through the contradictions inherent in any approach (2015:6). The goal then of senior leadership is not for everyone to think of risk in the same way, but rather for them to acknowledge that: (1) risk is a nuanced topic, and hence is worthy of reflection; (2) the reflection should lead an appreciation that risk can be understood in different ways and viewed from alternative perspectives – thus promoting 'better' formal and informal exchange of views; (3) the end result is that discussions about risks become normalised and risk management is not viewed as supplementary activity (2015:9-10).

This thesis will contribute to the body of knowledge on the role and influence of the leadership's mindset, through case study insight from an organisation of national significance.

3.8. Linking risk to MCS literature: the contribution to risk oversight

In this section the thesis draws out the contribution to a particular responsibility held by boards – that of risk oversight – from management control systems. Bhimani (2009) finds that management accounting, corporate governance and risk management are inextricably interdependent. This suggests that the structures present for risk management ought to complement those in place for the other aspects of the organisation's business; a line of thought that relates back to 'complementarity' within management control system reported in the first findings section.

Corporate governance, in terms of risk management, is termed risk oversight. The role of the board in the risk oversight process is defined as "ensuring that management has identified and brought the major risks faced by the enterprise to the board's attention and has plans to deal with such risks [as well as having its] own mechanisms for analysing and monitoring risk and risk policy" (Ingley and Van der Walt, 2008). In order that boards can fulfil their responsibility for risk oversight three elements are required from the management control systems in use: (1) risk reports submitted to the board; (2) an organisational structure to support risk management; and (3) a culture of risk awareness throughout the organisation (Lundquist, 2015). Taking structure first, while there may be subordinate boards and committees in order for the main board to gain appropriate insight into the risk actions taken by management, its members should retain responsibility for organisation-level strategic risks, receive regular updates on the risk register and review the internal risk analysis process and outcomes (Long, 2007). The quality of the oversight by a board is determined by: the size of the organisation and CEO's influence on the board (Lundqvist, 2015); the presence of strong board structures such as high proportions of non-executive directors and board expertise in risk (Yatim, 2010); and formal allocation of roles and responsibilities for board risk oversight (Ittner and Keusch, 2016). There is also evidence of the positive influence from an organisation having a Chief Risk Officer (CRO) (Aebi et al, 2012), as well as for a strong risk function (Ellul and Yerramilli, 2013) to facilitate board-level discussions and decision-making.

The risk oversight process is "the means by which a board determines that the company has in place a rigorous process for identifying, prioritising, sourcing, managing and monitoring its critical risks" (Protiviti, 2010:4); it is therefore a subset of what management does in order to meet performance goals and risk tolerances (Protiviti, 2010). In the global financial crisis, which began in 2008, inadequacies of risk oversight were traced to two factors: (a) the limited time boards spent focused on risk and (b) the lack of relevant expertise on the part of the board members involved; an increased presence of non-

executive directors (NEDs) sought to address the latter of these two deficiencies. The role of NEDs are to encourage the "development of a transparent inner space for self-regulatory capacity" (Power, 1999, 2001:1), and thereby contribute to the self-governance of the organisation (Spira and Page, 2003:655). Reporting their findings from interviews with senior NEDs, Zhivitskaya and Power (2016) emphasise "the importance of face-to-face interaction in fulfilling" that role; with NEDs having to "work hard to overcome the information asymmetry between themselves and management". In fulfilling the board's collective responsibility for governance the role of the NED is to challenge; in practice this includes involvement in the negotiation that happens between board meetings, otherwise "it would not be a mature board" (Zhivitskaya and Power, 2016:100). In terms of the risk agenda they report a NED's view of being a "chief coach and chief challenger" for the risk function; enabling the latter to be the "eyes and ears" of the NEDs within the company. In this way, through being seen as performing a useful role of motivating and encouraging the risk function, "the NED legitimised their own position" in relation to other board members and the wider executive (2016:103). Most importantly through insight gained by interacting with the risk function, the NED enhanced their ability to "support executives and their leadership of the business and to monitor and control their conduct (Roberts et al, 2005: S6).

Research on actual board processes can help improve our understanding of board behaviour and open the 'black box' of what happens inside the boardroom (Huse, 2005; Van Ees et al, 2009); research which is scarce because access is restricted (Pye and Pettigrew, 2005). The findings reported in this thesis will provide qualitative insight into the 'black box' through description of board members' use of the management control systems at their disposal. As Slagmulder (2017:184) states "effective risk oversight requires boards to be actively engaged with the strategy of the business"; this thesis' findings will draw attention to the contribution management control systems offer a board's management of risk – particularly the aspect of risk oversight.

This thesis will contribute to the body of knowledge on risk oversight and governance, through case study insight from an organisation of national significance.

3.9. Gap in the Knowledge

Mikes (2015) concludes by saying:

> "given the evolving nature of risk control, it is unclear which of the tools and practices now in use will ultimately make up a 'common body of knowledge... in-depth, small sample... field studies should elicit a fascinating and revealing

variety of context-specific practices and should, in due course, help us understand the causes and value of such variety".

In closing this literature review chapter, the author records that the literature led to, and continued to support, the need for research question 2 (How are strategic and operational risks controlled?) and research question 3 (How is risk management assured within Navy Command?). Primarily, for question 2 from Mikes and Kaplan (2015:39-40) concepts and questions on elements of a framework mix and types of risks definitions; and for question 3 from Verhezen (2017:280) concept of the interplay between risk types, the role of the risk function and the prevailing mindset of compliance versus artfulness. Both questions were then embellished by the writings of Hall et al (2015) on the tools used; by Kaplan and Mikes (2016) on the different roles of the risk function; and by Mikes (2009; 2011) on the calculative culture. A contingency perspective was taken, thus the writing of Chenhall (2003) and Woods (2009) on a contingency theory approach to risk management in both private and public sectors influenced how the research questions were addressed; as did both Linsley and Kewell (2015) and Verhezen and Dequae (2017) for the specific variable of mindset.

This case study thus contributes to the body of risk management knowledge by providing insight from an in-depth context–specific study. It seeks to answer whether the risk management framework within Navy Command is controlling 'everything' or 'nothing' using the 'mindfulness' of, and risk function culture set by, the senior leadership within Navy Command; are they providing "critical imagination of an alternative future", or merely following "due process" (Power, 2009:852)? In particular, this study will explore whether is the 'tone from the top' acts as a contingent variable, setting the conditions for the enactment of the framework of processes, meetings and people, and along with them, the culture of risk.

A summary of the contribution that can be made by this thesis in addressing the gaps in the knowledge from extant literature on risk management theory is provided at Table 3-1:

Risk management theme	**Literature Review Section**	**Extant literature knowledge**	**Potential contribution from this thesis**
Purpose			
Risk Identification	3.4.1	Boholm and Corvellec (2011:186) *risk definitions are situated expressions of*	Case study insight

		individual and collective understanding of hazards to objects of value.	
Sense-making	3.4.2	Weick (1995:57) *Sense-making, as a perspective, is about "plausibility, pragmatics, coherence, reasonableness, creation and invention"*	Case study insight into an organisation's sense-making with incomplete information
Moral obligation	3.4.3	Verhezen (2010:189). Concept of an organisation's *governance of risk laying on a continuum of moral responsibility and legal compliance*	Case study insight
Auditability	3.4.4	Power (1996, 2003a, 2003b, 2004a, 2004b, 2005, 2007) *the need for auditability and the influence on risk management.*	Case study insight
Risk management theme	**Literature Review Section**	**Extant literature knowledge**	**Potential contribution from this thesis**
System Design			
Framework	3.5.2	Mikes and Kaplan (2015:39-40) *elements of a framework 'mix' and types of risks definitions.* Verhezen and Dequae (2017:280): the *interplay between risk types, the role of the risk function and the prevailing mindset of 'compliance' versus 'artfulness'*	Empiric case study examples Empiric case study examples
Tools	3.5.3	Hall et al (2015:4) *central role of tools for risk function interaction with decision makers; 'engaged toolmakers' that adjust and reconfigure tools to meet the needs of the executive.*	Empiric evidence from two examples of tool making

Risk Function role	3.5.5	Kaplan and Mikes (2016:13) *different roles of overseer, business partner and independent facilitator.* Hall et al (2015:18) *gaining influence with decision makers through tool making and interpretation.* Mikes et al (2013:74) *four competencies of an influential risk function*.	Empiric evidence of three roles in one organisation Empiric evidence from two examples of tool making Case study insight
Calculative Culture	4.5.4	Mikes (2009:20) *quantitative sceptics or enthusiasts*; Mikes (2011:242) *potential for two calculative cultures to exist side-by-side within one organisation*.	Empiric case study examples Case study insight
Risk management theme	**Literature Review Section**	**Extant literature knowledge**	**Potential contribution from this thesis**
Contingency perspective			
Contingency variables	3.6	Chenhall (2003:127) *influence of environment, technology, size, structure, strategy and national culture on management control;* Woods (2009) *a contingency framework for the public sector with three variables: central government policies, information and communication technology and organisational size.*	Insight into organisational culture within public sector Development of a fourth variable: leadership
Mindfulness	3.6.1	Linsley and Kewell (2015) *setting the tone from the top for a nuanced approach;* Verhezen and Dequae (2017:280) *interrelationship between risk types, role of the risk management function and mindset.*	Case study insight Case study insight

Table 3-1: Summary of the potential contribution to the body of knowledge on risk management. Source: the author.

4. Research Design and Methodology

Key points outlined in this chapter:

- Ontological and epistemological perspectives of the research paradigm;
- The meaning of data;
- Intersubjective sense-making/Interpretive representation of experience;
- Criteria for assessing quality of interpretive research;
- Reflexive methodological approach.

4.1. Introduction

This chapter reports the research methods chosen to answer the research questions, in sufficient detail that they might be replicated. In doing so the chapter has two aims: (a) to demonstrate that these methods are appropriate way to answer those questions, (b) that the chosen methods did not exert an inappropriate influence on the results. In order to demonstrate applicability, the chapter opens by explaining the philosophical considerations that underpin the chosen research design and methods. The design of this research began with selection of a topic - risk management in the Royal Navy - and a paradigm. Paradigms (Kuhn, 1970), in the research context, help the understanding of phenomena, through advancing assumptions about the social world, how science should be conducted, and what constitutes legitimate problems, solutions and criteria of proof; as such they encompass both theories and methods (Cresswell, 1994:1). In this chapter the thesis records the rigour and appropriateness of the chosen research methods in addressing the research topic and providing answers to the research questions; it is structured thus:

4.2 Assumptions about knowledge

4.3 Research strategy

4.4 Research site

4.5 Research design

4.6 Data

4.7 Criteria for assessing quality of research

4.8 Overcoming research shortcomings

4.9 Methodological lessons learnt

4.2. Assumptions about knowledge

This section explains the philosophical assumptions that shaped the design of the research: ontology, epistemology, theories selected, researcher's own values and practical considerations.

4.2.1. Ontology.

My ontological perspective of reality is that of an internal-realism (Walsham,1995:75) constructionists view that an organisation's events (policy management decisions, meetings etc.), as social phenomena, are given meaning by the shared understanding by their human protagonists; indeed, myself as the researcher will naturally construct my own account of the organisation's reality workings, which I will need to share with the research's participants in order to give them meaning. The implication of this ontological perspective is that the author holds that multiple realities exist for any given situation: each of the protagonists, the researcher, all the readers of the research output. Thus in reporting 'the facts' the author believes it is beholden on the researcher to compare their construction of events, with those by practitioners who were involved, and seek the views of other researchers in the problem area so as to reach a common, most plausible, view.

4.2.2. Epistemology.

Epistemological considerations concern the nature (Walsham,1995:75) and acceptability (Bryman and Bell 2007:17) of the knowledge being obtained. The author would describe himself as 'non-positivist' which Archer (1988) defines as holding a view that facts and values are intertwined and hard to disentangle, with both involved in knowledge. Furthermore, my research paradigm, given an interpretivist approach to my non-positivist epistemology, and an internal-realism ontology, is that whereas "an objective reality is assumed to exist", the only useful knowledge of that reality is "constructed through interactions and the sharing of meanings" (De Loo and Lowe, 2017:1799). Merging their work with Llewellyn (1993,241) while "every observation and interpretation would be valuable in its own right…the construction through debate…offers accounts of events which transcend the understandings of agents themselves" What then is being constructed? I believe there "is a mind-independent reality out there which cannot be fully comprehended" (De Loo and Lowe, 2017:1814); and as full comprehension isn't possible humans "infer the best explanation they can think of based on the understandings he/she has distilled at a moment in time" (Lukka

and Modell, 2010:467). Thus we all have our own perspectives, and hence "multiple interpretations of a single mind-independent reality can and are likely to co-exist at the same time" (Healy and Perry, 2000). This is because, I believe, events happen in the world (not just in our heads) but due to our processing limitations we only gain an impression of what we have witnessed/participated in; our mind then constructs an interpretation that orders and makes sense of what we have experienced so that we can share it with others. In doing so this modifies our own knowledge, thus we reach a shared understanding with others. A final point of epistemology is the author's interpretivist belief is that the study of people requires an approach to research that provides an understanding of the subjective meaning of social action. Thus in considering how best to design the study, the researcher was cogniscent of the need for methods that would give access to detailed information on groups of individuals and their interactions, plus allow time for reflection in order to be able to understand the evidence that was being gathered, so as to be able to shape the focus for subsequent phases of the data collection.

Alternative paradigms would have required the author to hold a positivist or normativist epistemology and/or an ontological belief in external-realism or purely subjective realism; Table 4-1 contrasts these beliefs with those held by the author:

Epistemology	**Ontology**
Positivism: Facts and values are distinct and scientific knowledge consists only of facts	**External realism**: Reality exists independently of our construction of it
Non-positivism: Facts and values are intertwined; both are involved in scientific knowledge	**Internal realism**: Reality-for-us is an intersubjective construction of the shared human cognitive apparatus
Normativism: Scientific knowledge is ideological and inevitably conductive to particular sets of social ends	**Subjective idealism**: Each person constructs his or her own reality

Table 4-1: Alternative stances on knowledge and reality (Walsham, 1995:76)

Given that paradigm, the data I seek to collect is "really our own constructions of other people's constructions of what they and their compatriots are up to" (Geertz, 1973:9);

as such, the ‘evidence’ I seek is that which allows me to make my interpretations available in ‘consultable record’ that is seen as quality research (see section 5.7 below for quality criteria).

4.2.3. Use of Theories

In designing the research, the author was keen to understand the relevant extant theories and knowledge. His perspective was that attention of senior leadership was focused on the delivery of the performance required of the navy, but that it needed to manage the risks that would impact on that performance; thus risk management needed to be researched in the context of performance management. Management control systems theory was identified early on in the literature review as appropriate to frame the research design; though other theories cited in comprehensive literature reviews (Stringer, 2007) of top journals have been considered, management control systems theory has been the main lens through which to analyse the linkages between the forms of management experienced. That said, cultural aspects of informal control feature quite prominently in the findings sections, and contingency theory is used in the analysis sections.

As the author’s understanding developed, and new experiences prompted new thinking, further literature reviews for theoretical insights on the subjects of management control, risk management, and qualitative research were sought for three reasons: (a) to underpin the study with latest and best thinking on the subjects of risk and management control; (b) to be able to avoid replicating previous work that had since been discredited; (c) to ensure the research was viewed as professionally competent. Researching how to research is but one example of the reflexive approach adopted by the author. Luhmann (1982: 95) defines reflexivity as “the application of a process to the process itself” and gives the example of making decisions about making decisions; in my case it is researching about research. The advantage offered by reflexivity he believes, is that it “enables an entity to handle the complexity of its environment”.

The author offers Figure 4-1 (based on Lee and Lings 2008) to illustrate how the use of theories interfaced with the author’s philosophical perspective, guided and influenced the collection of empirical evidence.

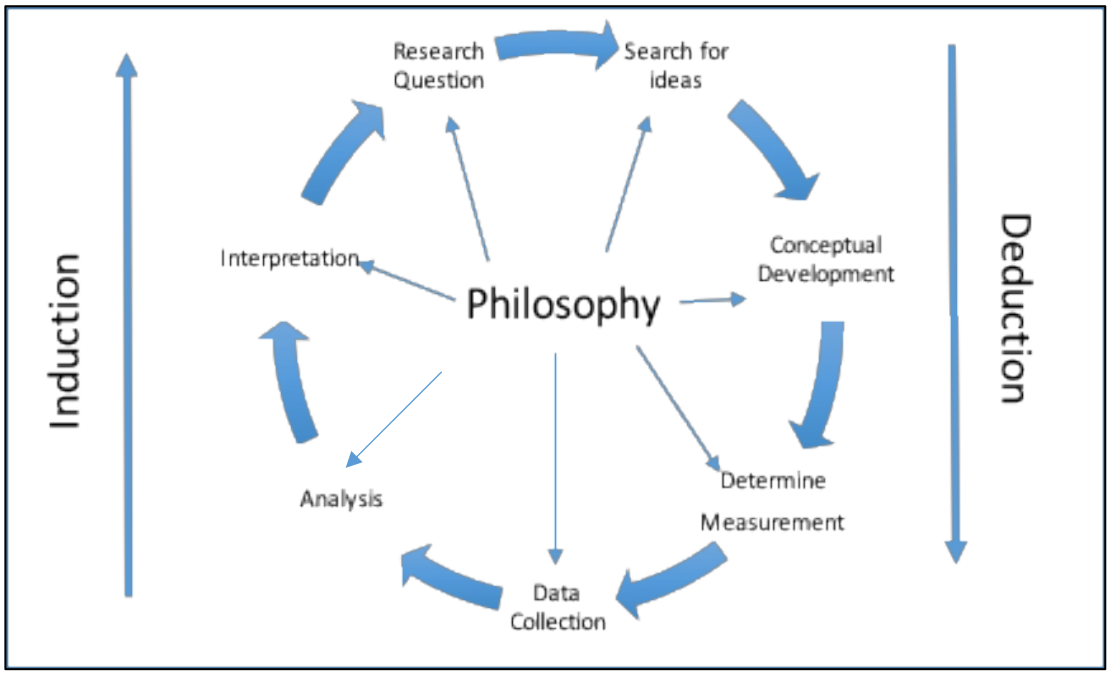

Figure 4-1: Role of Theory and Philosophy in Research Design; a hypothetical-deductive method (based on Lee and Lings, 2008:41).

Figure 4-1 shows how, having identified the research topic of 'how risk management is executed in the Royal Navy', ideas were searched for using a literature review and discussions with more experienced researchers; the concept of using Management Control Systems theory was hatched and candidate research questions refined. Given the potential to gain rich insight from relatively senior and small numbers of the sample population it was determined to measure risk management practices through interview, observation and review of documents. Having gained ethical approval data was collected then initially analaysed using the themes drawn from the literature review. These interpretations were replayed to the practitioners on which they were formed as well as elsewhere in academia; which resulted in the researcher's own views being modified, leading to research questions refined and the spawning of new ideas leading to the search for other applicable theories. Lee and Lings (2008:41) term this approach hypothetical-deduction where it is deduced from the ideas and concepts which data should be collected, which in turn induces new ideas from the analysis and interpretations thereof.

4.2.4. Intersubjective sense-making – the representation of experience

The shared interpretation, required from an epistemological perspective and referred to above, both within academia and the work place is perhaps better represented in Figure 4-2 here:

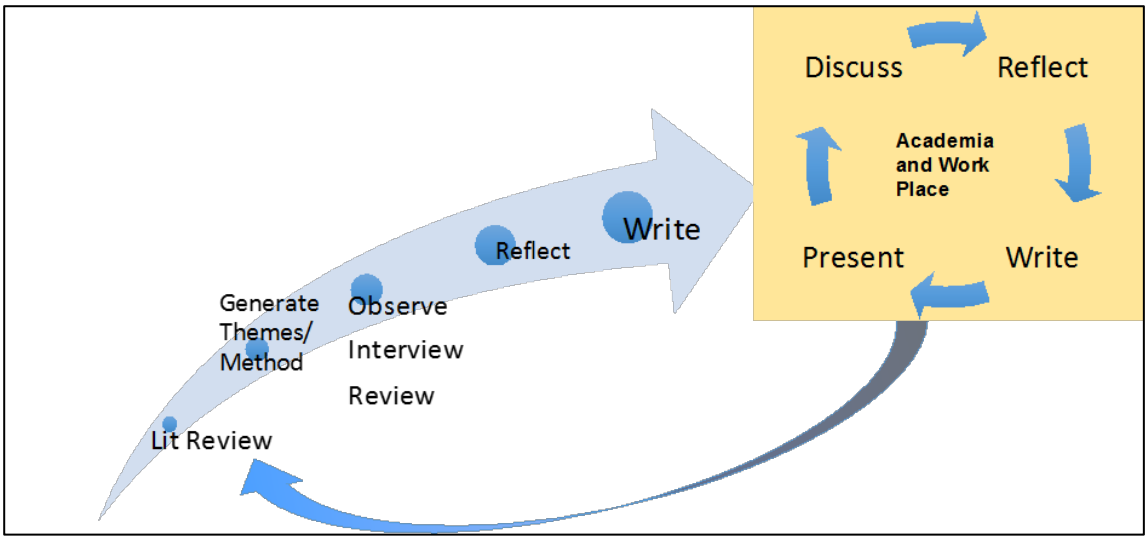

Figure 4-2: Generating a shared understanding of the data (from the author at MARG Conference Nov 2017)

Figure 4-2 is consistent with Ahrens (2008:296) view of interpretive research into a "social reality that is emergent and subjectively created yet (successively) objectified in social intercourse". The figure shows the author's approach to gaining a shared understanding, and thereby enhancement of a plausible explanation. In essence the interpretation phase in the sequence shown in Figure 4-1 is expanded and shown as the 'Write-Present-Discuss-Reflect' box; which informs a new ideas search for themes and methods. The approach can be likened to that of rhetoric used by the Greeks and perhaps most famously codified by Aristotle (384- 322 BC); an approach where reason was put forward in persuasive argument and the issue debated. Myers' (1985:595) view is that rhetoricians as authors invent by trial and error the arguments by which they could persuade their audience to assent to their claims; thus writing is a social process. In the case of academics, the editorial and peer–review revision process has an important consensus building function that shapes research output (1985:627); and for practitioners, testing what will gain leadership buy-in and affect practices in the work place. Social communication is seldom an impartial process of information sharing, instead it reflects "an asymmetrical relationship between social agents who manoeuvre" (Shenkin and Coulson, 2007).

The above cycle of exchanges is based on data obtained by a single researcher; however, researchers do not have direct access to another's experience, rather we deal with ambiguous representations of it – talk, text, interaction and interpretation (Reissman, 1993:8). Noting the lived world "is already there before reflection begins" (Merleau-Ponty, 1989: vii) Reissman offers five levels of representation in the research process that influence intersubjective sense-making:

- Attending to experience: where certain features of events are made discrete in your consciousness, which you reflect on, remember and recollect into observations. By attending you make certain phenomena more meaningful than those not selected from the totality of the primary experience.
- Transcribing the experience: Reissman (1993:12) refers mainly to transcription of interviews, which I would like to broaden to transcribing data/evidence of 'what happens' in observation sessions. There may be a perception that capturing the spoken word in interviews through audio recording, leads to a more 'accurate' account; certainly there is more primary data to refer back to. It does though still need to be edited and selectively used in the account of the case study. Similarly, in preparing to make written notes in an observation, before the meeting I thought carefully about the themes I would be attending to, while remaining alert to the need to capture new themes that emerged. Both forms of interpretive transcription posed their own influences on my representation and sense-making.
- Analysing the experience: In analysing the data/evidence the researcher creates meta-story about what the multitude of pages of records signify. Interview narratives, records of meeting and reviews of documents are edited and shaped and turned in to a hybrid story (Reissman, 1993:13). A story which is influenced by the author's values, and experiences, as much as who they are writing for and the anticipated response it will receive.
- Telling about experience: I represent the events to others, describing the setting, characters and unfolding plot in a combination that makes my interpretation of the events clear; influenced as it is by all my past experiences. My audience listen and question, prompting me to think more about particular aspects of my experience; and I, in turn, refashion my portrayal in response to their cues. Though I retain responsibility for the research, by interacting through conveying a message and listening to the responses we to some extent produce an interpretation together. In creating my interpretation, I am also creating a 'self' – how I want to be perceived as a researcher; like all social actors, I seek to persuade myself and others that 'I am good'.
- Reading about experience: As alluded to in 'telling of experience', "every text is plurivocal, open to several readings and to several constructions" (Rabinow and Sullivan, 1987:12). Thus the meaning of a text is always a meaning to someone; the contents "are meaningful to specific interpretive communities in limiting historical circumstances" (Clifford, 1988:112). This means that my thesis can be read by the current participants in Navy Command today and interpreted in one

way; with their successors taking a very different view should they read it in years to come.

The conclusion I make from the above considerations of intersubjective meaning making is that "all forms of representation of experience are limited portrayals…meaning is ambiguous because it arises out of a process of interaction between people: self, recorder, analyst, teller, listener, reader" (Reissman, 1993:15). I can strive to 'tell the whole truth', but my interpretation and others' understanding of it will in reality be partial, selective and imperfect; I hereby acknowledge the 'subjectivity inherent in the research act' (De Loo et al, 2015:48). In section 5.7 I offer a number of criteria against which to assess this imperfect rendition.

4.2.5. Researcher's Values.

Values reflect the personal beliefs or feeling of an individual; there are, therefore, numerous points in the conduct of the research where intrusion of values can and will occur and thus introduce bias. Thus the prior knowledge, experience (De Loo and Lowe, 2017:1802) and attitudes of those involved will influence their interpretation, and in the case of the researcher will influence not only how they see things, but also what they see (Bryman and Bell 2007:30) . At the November 2017 MARG Conference I used the metaphor of a crystal to describe this effect; shown here in Figure 4-3.

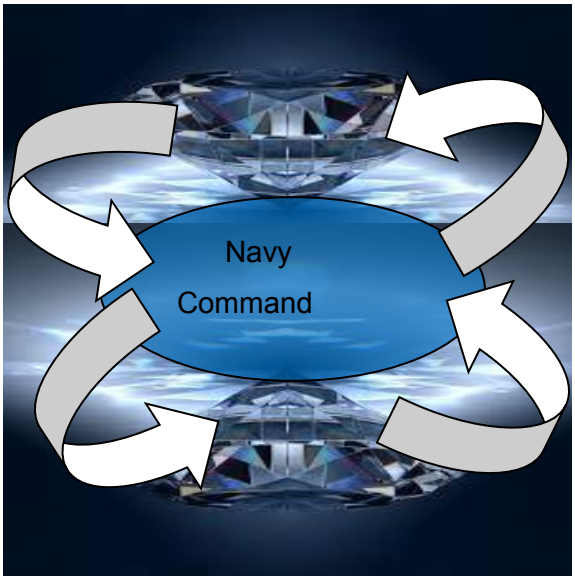

Figure 4-3: Metaphor of a crystal to describe differing perspectives on an organisation (from the author)

In Figure 4-3 the Navy Command Operating Board is depicted as being surrounded by an organisation that is represented by two crystals. Individuals viewing the organisation will recognise the structure but depending on their viewpoint – as influenced by their values developed from previous experiences – they will have a different perspective

from others involved. Indeed, as the organisation changes over time, the developments refracted through the prism (Emirbayer and Johnson, 2008) will be seen differently by different individuals

All of the values I hold and previous experiences of literature I have read, relationship with my supervisors and place in the organisational setting, will have influenced this research to a greater of lesser extent (Mauthner and Doucet, 2003:422); use of reflection has helped me understand my own biases and I have endeavoured to acknowledge and incorporate them into the thesis, thereby enhancing transparency of their effect (Mantzoukas, 2005:279). In revealing the tension between interpreting, reflecting and describing the experiential world of the case, I have aimed to enhance the trustworthiness of the findings offered in this thesis (Binder et al, 2012). This came quite naturally to me, as by nature I consider myself a reflexive social scientist, acutely aware of the interplay between philosophical positions and research practice (Alvesson and Skoldberg, 2000) and enjoying the construct of meaning and social realities as I interact and talk about my experiences (Cunliffe, 2003). That is not meant to convey the impression that I am content with 'just talk'; I aspire for my research to be 'useful'. Cunliffe (2003:990) cites Gabriel (2002) when suggesting that "knowledge is actionable (useful) based on its use value not its claims to truth, and that its users (practitioners and academics) are bricoleurs employing whatever is available". In this sense as a researcher I am a "spokesperson for that which I believe needs to be spoken for" (Pels, 2000:17); in designing my research I need to be sensitive to it being received, interpreted and understood by other humans, which lends itself to a story making metaphor where all participants construct our understanding of social reality- with the agreement from others giving it 'authority'. As the holder of the pen I appreciate my impact on that story, thus in some respects this research design and methods section fulfils a self-reflexive role of documenting my field-work experience (Cunliffe, 2003:995).

4.2.6. Practical Considerations

Practical considerations are an important aspect of deciding how to research an organisation (Bryman and Bell, 2007:33), as there needs to be an alignment between what would be an ideal approach and what is feasible. I was very fortunate in being able to conduct research in an organisation where I was an employee, and where the senior leadership had endorsed the research programme being conducted. Fortunate in that the senior sponsorship enabled my access to some highly privileged material, and also that my familiarity with the personalities and broad ways of working mean I could devise a programme of activity without requiring the overhead of a staff member shepherding my activity. Being a researcher who was an employee, with a contract to

the sponsor of the study, also had practical considerations. In devising the research strategy I was aware that participants would know of my employment status and thus be influenced in their interactions with me (De Loo and Lowe, 2017:1806); that readers of my work would know of my contracted status and thus potentially view it as biased. Taken together these practical considerations influenced me to make the very best use of the privileged access I had been granted, while making every effort to not unduly influence those who I was gathering data from and being rigorous in recording my decision making throughout the study so as to demonstrate how I reached my interpretations.

4.3. Research Strategy

Mindful of the influences on research detailed in the previous section a research strategy (Silverman (2014:391) to study board-level risk management within the Royal Navy was framed to permit interaction and develop shared meanings (De Loo and Lowe, 2017:1799). Given there will be multiple understandings and interpretations (Ahrens, 2008:296) the author was keen to ensure that the research was received as a robust piece of research - by the academic community – and the findings viewed by the Navy as both helpful and accepted. Thus a single case study was selected – the Royal Navy – and qualitative methods (of observation, semi-structured interviews and internal document reviews) employed to gather data on the most pertinent (in the opinion of the researcher) themes from relevant literature. Initial analysis was tested through reflecting the findings back to the employees who were observed and interviewed, in order to check their recognition of the account conveyed, as well as through a series of presentations in academic fora.

The author accepts that the research design, while constructed to support a case study that describes risk management in the Royal Navy in order to convey understanding provides “highly context- and time-specific analysis of how people communicate and act in particular social settings” (Lukka and Modell, 2010:464). Those of a positivist stance may not favour the research methods chosen, while those with a differing epistemology may believe the ‘findings’ could be conveyed more as ‘hard facts’. These perceived weaknesses however, it is argued, are merely due to the reader’s personal point of view. The author offers that the strength of this thesis is the consistency between social constructivist epistemology, interpretive methodology, qualitative methods and reflexive analysis; he trusts that the written thesis conveys this. Furthermore, the thesis is underpinned by a strong theoretical basis; initial research being influenced by Management Control Systems theory – in particular Simon’s (1995) Levers of Control – before getting into the nuances of Risk Management theory – notably the role of frameworks, risk functions and calculative

cultures as espoused by Mikes (2009; 2011). In constructing the strategy, the author consulted widely on qualitative research methods and interpretive analysis methodology.

4.4. Research Site

The research site for data collection was Navy Command's Head Office in Portsmouth during the financial year for 2016/17; an outline description for which is at the next paragraph. Of equal note though, given the constructivist and interpretivist stances, are the research sites for data analysis and data interpretation namely Aston and York Business Schools' campuses, where fora for peer review and debate of the emerging findings were hosted, in addition to feedback sessions with practitioners in Portsmouth. For completeness and accuracy, the communication channels of skype and email should perhaps also be included as they too hosted information exchanges with supervisors and the wider academic and practitioner community who shaped my thinking. In that vein, while data collection was conducted over the course of a financial year, the idea gathering, theme and method construction took place over the previous year at those sites; and the analysis and interpretation continued for the next 12 months whilst still being influenced by all of the above through ongoing interfaces.

Navy Command is the 'Royal Navy' element of the Ministry of Defence (MoD); a full description of senior leadership responsibilities and a line management organisation chart is detailed at appendix 11-1. An overview of the organisation can be summarised as the Navy Command Head Office in Portsmouth is led by one of two 3* admirals in Navy Command - Deputy Chief of Naval Staff/Second Sea Lord (DCNS/2SL) while the Chief of the Naval Staff/First Sea Lord – the CEO – is based in MoD Head Office in Whitehall. The Navy contributes four functions to Defence: develop, deliver generate and operate naval service units (be that ships, submarines, aircraft or Royal Marines). The first two functions are overseen by 2SL with a head office staff of 900 personnel, some of who also oversee 'generation' of units under the leadership of the second 3* admiral – the Fleet Commander – who also resides in Portsmouth. The operate function on a daily basis is controlled from north London, with units being based at a variety of locations throughout the UK and operating globally. The research was based in the Navy Command Head Office though covered the full gambit of risks held by the Command.

In March 2015 the Second Sea Lord directed that Navy Command was to "manage the business by risk" (Navy Command 2015). Analysis by the Portfolio Office revealed over 1500 'bottom up' risks recorded in the risk register, with varying degrees of inconsistent and unchecked risk information. Of note 26% were unapproved, 57% had no defined strategy to address the risk (Tolerate/Treat/Transfer/Terminate) and 24% had no response plans for mitigation. Following six months of activity to improve the understanding of risks

held, the overall number of risks held had increased, though the number held by Flag Officer rank had reduced from 500 to 300. As of March 2016 the number of risks held by Flag Officers has further reduced to 150 “though it is difficult to determine how many of these have been identified, assessed and actively controlled at this level” (Navy Command 2016:3).

4.5. Design

Research design decisions are important because of their influence on analysis though the ruling out of certain variables and attending to others, thereby “prefiguring the analysis” (Miles et al, 2014:18). This research programme was commissioned in to order to better understand how risk management was conducted within the Royal Navy, in order that areas for improvement could be identified and recommendations suggested for better ways of working. I needed therefore, to devise my research questions that would enable me to explore that topic, and then ensure that my research was designed so that it would best obtain the data from the real world that would answer those theoretical questions (Lee and Lings, 2008:184). In defining the scope of the research ‘problem’ the employer referred to the quality of the interactions concerning risk management: “much good work on risk reporting but less so on actual management”. Alvesson and Deetz (2000:30) hold that central to shaping a research study “is the situated nature of the research enterprise. Problem statements, the researcher’s attention, and descriptions are worked out as a play”. The author then was initially focused on understanding how risk was reported, and how this interfaced with how it was managed. Conceptually therefore the design was for an exploratory case study, aimed at understanding the research topic of how risk management was performed within the organisation; towards the latter phases this evolved to include Innovation Action Research (Kaplan, 1998) in order to deliver real time improvements in the organisation’s management of risks. The Research Protocol contained four Research Questions designed to address the topic:

RQ1: How are management control systems used in portfolio risk management?

RQ2: How are strategic and operational risks controlled?

RQ3: How is the management of risk assured in the Royal Navy?

RQ4: What should be the framework for portfolio risk management in Navy Command?

The following rationale was used to select the research questions: firstly, risk management was perceived to be just another aspect of management that an organisation needed to perform therefore, the logic went, it would be appropriate to use the wealth of quality empirical research into management control theory to research how this particular function was performed; this spawned the first research question (RQ1). The broad management

perspective helped situate the performance of risk management within the other business processes conducted within the organisation, but nevertheless the detail of how risk was specifically conducted needed to be understood. This led to research into the processes and tools, the meetings, and the role of the risk management function within the organisation - as in commissioning the research the employer wanted to focus on board-level oversight of risk management (hence RQ2). Board-level risk work also has an assurance responsibility; hence to complete the understanding of how risk management is performed in the Royal Navy, it was proposed that RQ3 was required. Finally, as the research was part of a DBA programme, and thus with the remit of enhancing working practices, RQ4 was devised in order to provide an answer on what a risk management system should comprise of – given the findings from this research.

Having determined the research questions that required answering in order to examine the research topic and confirmed that the focus was to be board-level risk management, the author considered which research methods would be most appropriate. Given the seniority of the board members and the nuance of discussion concerning their most significant risks, it was determined that a qualitative approach would be most suited; in particular observation of key meetings, semi-structured interviews of stakeholders where access could be gained, and review of relevant internal documents would be used.

Alternative approaches were considered, and for a time a mixed-method approach was potentially going to be employed; one using quantitative analysis of previous risk management agenda items to provide insight in to decision-making over a longer period of time. This approach was discounted due to the challenge of tracking decisions through to implementation while having to rely almost exclusively on internal documents without access to previous generations of decision makers to corroborate the interpretations. By keeping the case bounded by decisions made in the timeframe where the researcher was on-site it was felt there would be higher internal consistency for the reported interpretations.

The research design acknowledged that an ‘explore and understand’ phase was initially required into an organisation that was conducting risk management. However, the research being sponsored by the employer, there was an expectation from within the leadership that there would be feedback on areas where potential improvements could be made, as the researcher’s competency and insight developed. The design of reflecting back the researcher’s interpretations to the leadership also had the additional benefit of enabling a conversation to reveal those aspects that were perceived to be most beneficial to the organisation, and therefore provided focus for subsequent phases of research.

In closing this section on how the research was designed I refer to Rudestam and Newton’s (2001:91) considerations for reporting a “naturalistic’ study”, in order to draw attention to

the privileged access research position I was able to capitalise on. This research topic focuses on board-level risk management within an organisation of national significance; to do so it needed to have access to senior leaders, the information they were receiving as well as the other levels of the organisation that they interfaced with. Being a senior employee within the organisation myself, with an awareness of how 'things worked', the author was able to devise a research programme to gain access to pertinent events, and through being known by the participants was able to follow up with points of clarification; whereas an external researcher would have needed more shepherding to know what they needed to witness, and may have had more difficulty getting into busy diaries. As it was, the Royal Navy had an employee who was employed in the same work space; an employee who had the back-ground knowledge and experience to embark on a programme of post graduate research, the interest to research further the theoretical literature on the subject and the drive to seek to apply it to the case of the Royal Navy. Of course, It was not a perfect research environment: some participants I would have wished to interview were too busy; and some were more 'junior' to me (in terms of overall rank held), though a point to note is no participants I researched were in any of my line management chains, so I believe the rank differential had minimal effect on their contributions. It is I believe, however, potentially the closest approach to a naturalistic study possible; through following the ethics procedures of maintaining anonymity of individuals, and demonstrating an aim to improve the contribution to business, the researcher was accepted into the field of risk management.

4.6. Data

In considering what data would be required to answer the above research questions the author made the following underlying assumptions. Drawing on Merriam (1988) I considered that the data: (1) needed to provide insight into process as much as outcome of products, as well as to the meaning of the structures and experiences; (2) could be collected by my physically going to the people and meetings that were involved; in doing so I would be the primary instrument for data collection, and thus mediate the collection; (3) would need to inform a description of the processes and support an interpretation conveyed through words.

4.6.1. Data Themes

On entering the data collection phase of my research I wanted to have a reasonably tightly structured framework to direct my collection, yet one that could evolve as observations inspired me to change my view (Dubois and Gadde, 2002). I therefore constructed an observer's record template, that facilitated free text record taking - yet prompted my thinking by key themes from the literature to look out for. The first edition

is shown here in Figure 4-4; the themes are coloured in order to assist analysis. Having completed the notes of the session I subsequently reviewed them for these key themes, highlighting the text with the appropriate colour for that theme; this assisted me in retrieving examples of evidence for a particular theme when going back through my researcher's records.

Figure 4-4:Footnoted Themes on Data Record Templates (from the author)

The exhibit in Figure 4-4 was created before the first data collection opportunity, and whilst additional themes emerged, the 11 original themes drawn from the literature review have stood the test of time.

Management Control System Theory themes. Management Control Systems theory reading had focused on Simons' (1995) Levers of Control theory; as my attention had been drawn to the perceived imbalance between recording (diagnostic system) and 'actual management' (a proxy for interactive system) it seemed appropriate to use this framework to record initial data to answer RQ 1 (how are MCS used in risk management?). The themes included the four systems identified by Simons' plus the themes of attention and learning, which were highlighted by reading Widener (2007). Subsequently the theme of culture emerged in the meetings I was observing; I sought insight from the literature and was drawn to the work of Malmi and Brown (2008). Having realised that culture needed to be added to the template I wondered what other themes might be of relevance; using the framework of Ferreira and Otley (2009) prompted a theme of 'strength and coherence. This in turn took me back to Malmi and Brown (2008) for package of systems and thus to system of systems and the notion of interdependence and complementarity. (Mundy, 2010; Grabner and Moers, 2013; Kruis et al, 2016).

In summary the themes for MCS which influenced my data collection were: Beliefs; Diagnostic systems; Boundary systems; Interactive systems; management attention; management learning; culture; package of systems; systems of systems including interdependence and complementarity between systems

Initial Risk Management Theory themes. As with MCS themes, the themes for risk management evolved as the case study progressed. While I had the practitioner guidance (MOD, 2017; Navy Command 2016) I was keen to understand better the

academic work on actual management of risk, as this had been highlighted as a weakness in the original commissioning the research. I was drawn to the work of Hillson and Murray-Webster (2012) and Murray-Webster and Hillson (2008), which revealed the key themes associated with actively managing a risk to a tolerable level of exposure, namely: risk owner; residual risk position; risk perception; risk actions; and target risk position. The MOD practitioner literature provided a risk management framework; however, as an author I found it hard to translate this into a useful format to shape the study and report the interim findings. Approximately half way through the data collection phase I came across the works of Mikes (2009, 2011, 2016), Mikes and Kaplan (2015), and Kaplan and Mikes (2016) with their framework that seemed more useful for analysing how risk management was being conducted in Navy Command (meetings, processes, controls, tools); in doing so I also discovered useful themes of role of risk function and calculative culture – the latter which had read-across to MCS literature on culture. As well as Mikes' (2009) calculative culture I read the work of Linsley and Kewell (2015) which presented the theme of a nuanced risk culture set by the leadership within an organisation.

In summary at the outset of the data collection phase I was alerted to a number of risk management themes from my literature review; I thus sought to collect data on these themes, whilst remaining alive to new themes emerging. The themes identified from the literature review were: risk owner; residual risk position; risk perception; risk actions; target risk position, risk tolerance; risk appetite; framework (meetings, processes, controls, tools); role of risk function; calculative culture; nuanced risk culture.

Emerging (organisational) themes. As the data collection phase progressed initial analysis of the data revealed various themes emerging. It was apparent that in managing risk the objective need to be identified – the risk 'to what'? At the highest strategic levels, there was a narrative that described the strategy to be enacted; at the operational level there was the portfolio. How were both of these understood within the organisation and how were the risks managed? The Command Plan emerged as a key boundary system, but what was its' full role? Another theme was complexity; both in transitioning from current to future organisational constructs, and in understanding the interdependencies between strategic and operational risks. Finally, a prevalent theme at many of the meetings was the assurance of the information presented to inform decision making. Towards the latter stages of data collection, as the conversations increased in their maturity two final themes emerged of risk tolerance and risk appetite.

In summary themes that emerged from observation and review throughout the data collection phase were: narrative and portfolio as objects at risk; Command Plan; complexity; interdependencies; assurance; risk tolerance; and risk appetite.

4.6.2. Data Sources

Data was obtained from observing meetings and reviewing the support documents as well as from the conduct of semi-structured interviews.

Meetings. The data I wished to collect to answer my research questions centred on the discussions that took place over the risk agenda items of the Navy Command Operating Board (NCOB) meetings; I therefore purposefully sought, and obtained, the Chair's permission to observe these meetings over the course of a financial year, and to have access to the papers that informed the agenda items. Having read what was written and heard the debate I was able to make unclassified written observation notes using a protocol I had devised (Cresswell, 1994:152) to record the main themes I was looking for from the literature, as well as any emerging new insights; these were written up within 48 hours, which provided the opportunity for 'first look' reflection and early analysis.

The NCOB meetings were though just the centre of a web of information flow relating to risk and other management control systems. I therefore used the same approach to observe meetings that interfaced with the NCOB; I purposefully observed all of the subordinate Portfolio Management Group meetings including their strategy work, as well as all of the RN Audit Committee meetings. These two fora were chosen as the former provides the content of the risk debate and the latter assures the system that provides the information. Having purposefully attended all of the meetings of the above fora, I selectively observed a meeting held by the NCOB chair with an NCOB member holding them to account for performance and risk in their business area; and selectively witnessed two NCOB members chair their own meetings on risks in their areas. Permission to observe these selective insights was requested in order to be able understand how NCOB members interfaced on risk with other aspects of the organisation; they were not intended to be representative of all members, rather to illustrate how information can be used 'at that level' of the organisation. Thus having considered previously how I was going to use the meetings to provide data to answer my research questions I was able to purposefully observe all the key meetings I needed to see, having previously sought permission from the chair; a protocol also devised prior to commencing observations enabled real time notes to be recorded and reviewed in a

timely manner. By this means the data could support findings from a single case study that purported to be representative of how risk management occurred in Navy Command over that period.

It is worth recording that I was granted permission to observe every meeting I wished to attend, and access to every document I wanted to review.

Semi-Structured Interviews. Noaks and Wincup (2004) offer three different interview formats, replicated here along with requisite skills and observations for this study:

Type of Interview	Required Skills	Implications for this study
Structured	Neutrality, no prompting, no improvisation	Discounted - No ability to probe emerging areas of interest
Semi-structured	Some probing, rapport with interviewee, understanding the study's aims	Intended – Most likely to offer full coverage of themes of interest
Open-ended	Flexibility, rapport with interviewee, active listening	Anticipated – subject to the interviewee's engagement/own agenda an interview that is intended to be semi-structured may evolve into Open-ended

Figure 4-5: Types of Interview format (after Noaks and Wincup, 2004).

From Figure 4-5 above, semi-structured interviews appeared to be the most appropriate approach given the research questions to be addressed; integral to success was assuaging any participants' concerns over being 'exposed' or their responses being identified in any subsequent reporting. The author holds a constructionist viewpoint; thus the interview data is perceived as two participants constructing a version of the world, and attributing their meanings to events; which begs, albeit refuted, criticism from positivists that the data obtained is valid only as an exchange between those two individuals. I chose to conduct interviews as part of my qualitative design in order to enhance the reliability and validity of my findings (Kvale, 1996:229); as such they were seen as augmenting the primary sources of observation and document review. 'Reliable and valid' in that they were used "in the process of trying to explain the past and present" (Alvesson and Deetz, 2000:44), rather than in the positivist sense of reporting an absolute 'truth'; in the main for the internal interviews this was focused on management control and risk management theoretical aspects. I therefore purposefully chose to

interview all the individuals with specialist risk responsibilities (Head of Portfolio Office; Chief risk Officer, Risk Manager and Risk Subject Mater Expert) as well as a selection of risk practitioners from the Portfolio Management Group (three 1* level[5] officers). External interviews were also conducted in order to enhance the reliability of interpretation regarding risk management processes, but also to provide a bench mark against which to make the judgements on Navy Command. Here a selection of risk specialists and practitioners from across government, Defence and maritime industries were selected as opportunities presented themselves.

In adhering to Aston's code of practice for research degrees and research integrity code of conduct (Aston, 2014, 2016) a signed interviewee consent form was obtained at the start of every interview session having explained the purpose and how the information obtained would be handled and utilised; the template is shown at appendix 11-6. In every case where I requested an interview permission was granted.

Sources of data, from interview and observation are summarised here:

Title	**Date**
Interviews within Navy Command by date	
Chief Risk Officer	24 Oct 2016
Risk Manager	26 Oct 2016
Assistant Chief of Staff (Integrated Change)	2 Nov 2016
Centre of Excellence Risk Specialist	3 Nov 2016
Assistant Chief of Staff (Ships)	7 Nov 2017
Head of Portfolio Office	12 Jan 2017
Assistant Chief of Staff (Carrier Strike Aviation)	19 Jan 2017
External Interviews by date	
BP Shipping Risk Manager	8 Nov 2016
BAe Land MD	30 Dec 2016
Rolls Royce Risk Head ERM	15 Mar 2017
Department of Transport Risk Analyst	12 Apr 2017

[5] See appendix 11-1 for an explanation of senior positions in Navy Command.

HMRC Risk Specialist	13 Apr 2017
Associated British Ports CEO	19 Apr 2017
Formal Meetings observed	
Second Sea Lord's Holding-to-Account	10 Oct 2016
Royal Navy Audit Committee	27 Sept 2016
	7 Dec 2016
	16 Mar 2017
Navy Command Operating Board	13 July 2016
	11 Oct 2016
	12 Jan 2017
	6 Feb 2017 (BOI)
	27-28 Mar 2017 (BOI)
2* Sub-Portfolio Governance Boards	
Operations	9 Sep 2016
People	8 Dec 2016
Portfolio Management Group	14 Jul 2016
	6 Sep 2016
	6 Nov 2016
	5 Jan 2017
	1 Feb 2017
	3 Apr 2017
Balance of Investment Workshops	
Prioritisation	14-15 Nov 2017
Next Steps	21 Nov 2016
Continuous At Sea Deterrence	2 Dec 2016
Carrier Strike options	9 Dec 2016
PMG Update	15 Dec 2016

4.6.3. Data Collection Timeline

Mindful of the imperative for the organisation to improve its management of risk a research design of a case study over the period of a financial year (FY 16/17 from April 2016 to April 2107) was chosen; with a single researcher who was also a member of staff within Navy Command: a participant-as-observer (Bryman and Bell, 2007:454; members of the social setting were aware of the researcher's status as a researcher, and there were regular interactions as the researcher participates in their daily lives). Though without formal responsibility for risk management the researcher would be feeding in observations and recommendations to those in the Portfolio Office with risk roles – in effect introducing aspects of action research into the case study. The writing up phase of the research extended past April 2017 and thus, as the author was still employed within the research site, there was an opportunity to remain abreast of developments within risk management and future intentions; the author acknowledges that this knowledge would have influenced, probably both consciously and sub-consciously, the final analysis and writing up of the research thesis through his awareness of how the organisation continued to evolve.

With the aim of gaining an understanding of how the organisation's risk management system worked in practice and given the senior nature of the management board of focus, a methodology was devised to permit triangulation of data obtained from document review, participant observations and semi-structured interviews; a summary of which was provided in the previous section. The 12 semi-structured interviews conducted focused on gaining an understanding of the overall context and approach to risk management within Navy Command; they typically had a duration of one hour, were recorded and transcribed. Internal documents reviewed consisted of risk management policy and strategy documents, risk reports to Head Office as well as internal audit reports of the organisation as a whole. Observations were primarily focused on understanding the interactions within, and information flow into and out of, two fora of senior leadership: the portfolio management group, The RN Audit Committee, and Navy Command Operating Board; their relative position in the governance of Navy Command business is depicted in Figure 4-6.

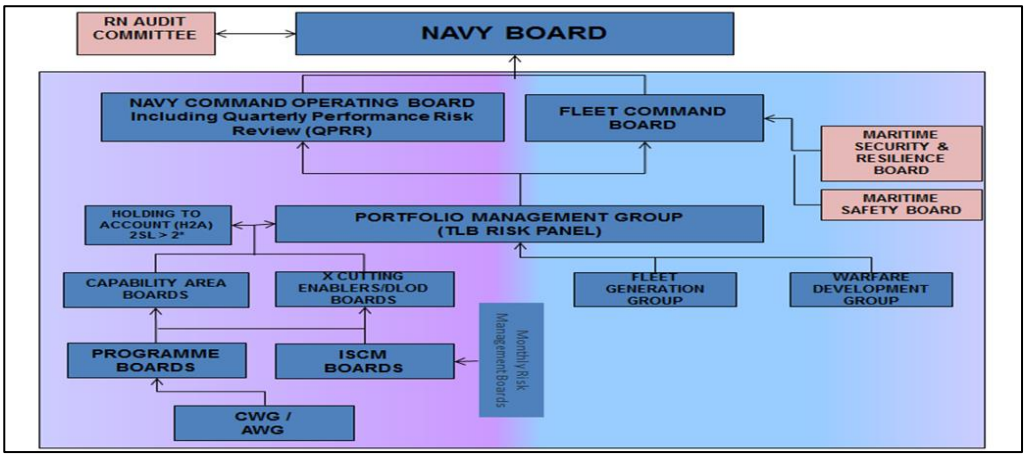

Figure 4-6: Portfolio governance within Navy Command

Phase 1 of Data Collection: Jul – Dec 2016

An initial six months was spent understanding the overall approach to risk management, including the discrete work strand underway to manage the risks to strategy. Observation field notes (Cresswell, (1994:152) and returned interview transcripts were reviewed (Kvale, 1996:188) and an initial analysis performed against the main themes that had been noted during the first literature review period. An analytical narrative of the overall risk management approach produced at the mid-way point of the case study was used to test emerging major-themes with some of the senior leadership and contributed to a conference paper presented to the academic and practitioner community in June 2017. In this way themes drawn from literature were brought into focus through reflexive discussions in the work place; discussions which assisted in identifying areas of business improvement and a specific lens through which to contribute knowledge to the wider academic and practitioner audience.

Initial analysis of the findings was conducted using the theory of management control systems; to understand the contribution it can make to risk management in respect to the organisation's outputs. This contribution is reported in chapter 5: findings on the role of management control systems; in doing so it answers RQ1.

Phase 2 of Data Collection: Dec 2016 – April 2017

With now a broad understanding of how risk management was performed in the organisation, there was an opportunity to observe and understand how management of risks to their strategy was undertaken. Data for this was obtained through observation of senior meetings and review of supporting internal papers, along with conversations with the facilitators to clarify the Balance of Investment process and decision making. The findings are reported in chapters 6 and 7, and answer research questions 2 and 3 respectively.

Phase 3 of Data Collection: April – July 2017

This third phase of data collection allowed the author to consolidate his understanding of the first two research questions, again through observation and document review.

Data Collection Postscript: Action Research in Sept – Dec 2017

Shortly after the conclusion of the formal case study period, an opportunity emerged for yet more insight into senior level handling of risk when the author was asked to assist with the formal acceptance ownership of new candidate risks by Navy Board members. In this role the researcher rather than just observing meetings was an active participant involved in developing new management information and processes for agendas to discuss the proposed risks; a constructive research approach (Malmi and Granlund, 2009: 18) that would inform theory in addition to practical problem solving in a DBA. The insight provided during this phase, being coincident with the analysis and writing up, greatly assisted in reflecting on what the risk model being used by Navy Command was, and indeed what it could be; thereby answering research question 4 as discussed in chapter 8.

4.6.4. Data collection method and recording

"Qualitative studies, especially those done by the lone researcher or the novice graduate student, can be notorious for their vulnerability to poor study management" (Miles et al, 2014:46); in setting out to conduct this research the author was adamant that he would not fall into this category, thus went to great lengths to read and consult widely on how best to manage the data that would be collected. The main issues my devised approach intended to address can be summarised as (a) recording high quality data; (b) documenting the analyses that have been carried out; (c) subsequent retrieval of the data and analyses; (d) recording my personal growth and evolution of the research programme; (e) recording and retrieving my analysis of literature reviewed (issues amplified from Miles et al 2014:50).

One development of the approach to data collection is worth highlighting as an example of the reflexive approach. Whilst, it had been proposed to track the management of two 'significant' risks in order to provide insight into the detail of their handling, once data collection got underway the researcher realised that this was not going to provide the volume of evidence that had been anticipated, so modified the case study construct to study a single holistic case – in effect changing from a Type 2 to a Type 1 design (Yin, 2014:50).

In determining how best to gather and record the pertinent data, the author was conscious of the vast volume of information that was going to be encountered, and the need to be able to recall the relevant events as the analysis phase commenced. A database was constructed using Microsoft excel software, that enabled a summary of key facts of an event to be recorded; thereby allowing the functionality within the software to allow the data to be filtered to reveal just the items of interest – be that a particular membership group meeting, or themes identified during literature or observations. An extract is shown in appendix 11-1.

All told 151 entries were collated into the database; these were devised based on an idea from Richardson (2003:529) and either a (1) Data Note (written up within 48 hours of an event taken place) to record the 'facts' of the event; (2) Memo (on a Data Note or collection of Data Notes) – which gave more interpretation of the implications for that event for the overall research programme; (3) Field Notes – that recorded personal thoughts on how the research was progressing. Templates of these three forms of data recording are shown in appendices 11-2 to 11-4.

4.6.5. Obtaining Consent

Written consent was obtained for all formal meetings observed, and from those participating as interviewees; templates used to obtain consent are shown in appendices 11-5 and 11-6

4.6.6. Ethics

The above research design and methods was implemented with full adherence to Ministry of Defence regulations (MOD, 2014) and those of Aston University (Aston, 2014 and 2016). Of note are the following key principles:

- Anonymity and Confidentiality (it will not be possible to identify respondents from research outputs).
- All data have and will be handled correctly.
- Informed Consent: all participants were informed of purpose of the study and how the data will be used.
- Participants were protected from harm, in that the researcher was sensitive to signs of discomfort when discussing sensitive information.
- Protecting Researcher from harm, in this case his own reputation.

Over and above those guidelines I strived for the highest ethical standards while doing my research in order that I might be considered a 'good' case study researcher; for Yin (2014:76) this entails a responsibility to scholarship (avoiding plagiarism; not falsifying information and accepting responsibility for one's own work) and developing a strong

professional competence (keeping up with research; ensuring accuracy; striving for credibility) while divulging the qualifiers to my methods and limitations of my work.

4.6.7. Data analysis procedures

Creative Analytic Practices ethnography (Richardson 2003:511) holds that the writing process and the writing product are deeply intertwined; "the product cannot be separated from the producer or the mode of production or the method of knowing". I would amplify this by making explicit the contribution of 'discussion' to "mode of production". In this way, for me, analysing in order to produce findings involves the sequence of: observing 'data'- recording it - thinking about it - reading some more - writing down thoughts - discussing thoughts (verbally) – refining the writing. The next sub-sections convey how this approach worked in practice for analysis of the four phases of data collection. Whilst it had been intended to analyse using OGC's Management of Risk methodology (OGC, 2007) once it came to analysing the data gathered it was perceived that this was not a useful, nor current, way of considering the ways of working for risk management. Instead, the literature review knowledge was utilised to shape the analysis using Mike's (2009, 2011) risk management framework; this better facilitated reporting on current research themes of mindfulness, risk frameworks, culture and role of the risk function within an organisation.

Phase 1: Management control and operational risk management

Findings for Research Question 1 (Management Control) were based on data drawn from observations, internal document review and semi-structured interviews, collected and recorded as described previously. For each individual event, data relating to themes of interest were recorded. Rudestam and Newton (2001:157) suggest beginning with analysing own experience then for each source of data analyse the data obtained. In that spirit I record that on entering the data collection phase I felt well prepared and competent to record salient aspects of events that were taking place within the organisation. Reading widely over the previous year about the relevant theories of management control and risk management had given me an adequate baseline from which to start collecting and considering the data I was obtaining; and, of equal importance I had studied extensively and planned in depth how to collect and record my data. Thus, when faced with conducting my initial analysis I had confidence in my data material, I just needed to understand how I would use it to describe and explain how management control applied to risk management within this context.

Six months into the case study period I conducted an analytical review of the data collected to date, in order to: (a) gain confidence that the quality of the data collected would support a doctoral thesis; (b) understand if there were macro themes emerging;

and (c) provide early insights[6] that could be reflected back to the risk management community, to check how it compared with their understanding and priorities. This was achieved by the 49 event records, memos and field notes being reviewed for what they revealed about the themes. A paper was written that summarised findings to 7 January 2017, and the 12 key observations discussed with the Head of Portfolio Office and Chief Risk Officer on 12 Jan 177. The conversation confirmed that the researcher's version of how risk management was conducted in Navy Command was recognised by the participants and the priorities for future work understood. The meeting also confirmed that the organisation would welcome the researcher to undertake a more involved role, which opened the opportunity for Action Research later in the year.

Thereafter these findings were refined through ongoing dialogue within the work place and at the various academic fora the researcher had the opportunity to present his findings; MCS findings are reported in chapter 5; control of operational risks in chapter 6; and the assurance of risk in chapter 7.

Phase 2: Control of risks to strategy

An opportunity presented itself during the data collection phase to observe the senior leadership determine the balance of investment required to support their proposal for a maritime strategy out to 2035. Observation data (Denzin and Lincoln, 2003) elicited during this phase frequently contained reference to providing a narrative, so spawned an emergent theme of 'narrative'. This in turn required broader reading to understand the theoretical underpinning of what was being observed, in particular the works of Weick (1995) on 'sense-making' and Mikes and Kaplan (2015) for 'envisionment'. I submitted, and was accepted to present, a working paper on my research at the European Network for Research into Organisational and Accounting Change (ENROAC) conference in June 2017; where Professor Mikes was the Key Note speaker. My paper and presentation benefitted from her feedback along with that from Professor Bob Scapens (Manchester Business School) and Professor Katarina Kaarboe (Norwegian School of Economics). The analysis on the risk to strategy research question have been influenced by the feedback from ENROAC[8] and my subsequent literature review over that summer; they are reported in chapter 6.

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[6] I'm grateful to Hans-Kristian Bryn, a risk management partner at Deloitte, for suggesting the benefit of sharing my understanding with the work place.

[7] Author's memo 64 and transcript refers.

[8] Recorded in field note dated 20170630 (Reflections on ENROAC)

Phase 3: Risk management model

Perhaps most importantly the ENROAC 2017 conference conversations prompted my analysis to consider what was the model in use for risk management within the Royal Navy. Acknowledging that a 'narrative' was perceived as useful for telling the risk to strategy, but how was the narrative constructed, such that it was consistent with the risk management throughout the organisation's entire portfolio? Again the writing of Professor Mikes (2009, 2011, 2016) seemed to provide a theoretical basis to explain what was observed within the Royal Navy; interesting in itself as her 'calculative cultures' (2009) work was derived from research in the banking sector yet appeared to me to have relevance for organisations of national significance too. The model evolved as the case study analysis progressed; an initial form appears in the literature of chapters 2 and 3 – a structure that assists in thinking about how the various strands of influence on a risk management system interrelate. Finally, in answering RQ 4 of what a risk management model should look like, the initial model developed into the model depicted in chapter 9 containing questions and a future perspective.

Phase 4: Action Research

The ENROAC conference coincided with the formal end of the 'year in the life' case study; however, as the researcher remained employed within the research site as he wrote up his findings, naturally conversations around risk continued. During this period, he was asked to assist with gaining acceptance of 15 candidate risks for ownership by Navy Board members. This gave further insight into senior-level conversations on risk management, which the author was able to assist on; in support of this new management information was developed by the author and presented to the Board to assist their decision-making.

With being set a specific deliverable (that of gaining acceptance of 15 risks for ownership by Navy Board members) the researcher shifted from using a qualitative research method of exploratory case study to one of action research. This latter method is "a participative, experiential, and action-oriented approach to research" which brings together "action and reflection, theory and practice, in participation with others, in the pursuit of practical solutions to issues of pressing concern to people" (Reason and Bradbury, 2001). In action research "the researcher's role can be viewed as a cross between an 'importer' of new knowledge to organisational members and a medium through which individuals can express the way they view the organisation or change" (Easterby-Smith, Thorpe and Lowe, 2002:94). This, in some respects, is a subtle nuance with the purpose of case study research in pursuit of a professional doctorate (DBA). The latter has a requirement to address 'problems' in the workplace, though the

proposed solutions may not be implemented – if ever – until after the case study completes. In contrast, in Phase 4 the researcher was explicitly asked to develop a practical solution to a pressing concern of the senior leadership by drawing on his learnings from theory and observations of practice to date to 'import' new knowledge into Navy Command. So while both case study and action research methods employed in this professional doctorate share change as an objective, and action as an outcome of the research, the latter differs in respect of the timeliness of the actionable results and that the researcher is more of a participant in the work being conducted rather than merely an independent observer – an independence the achievability of which Scholl (2004) calls into question in social settings.

The model of action research adopted was after Karlsen (1991), as depicted in Figure 4-7 below. Here, a relatively straight forward task of new risk ownership by board members was set in the context of the broader management of risk within Navy Command. Hence steps 1 – 4 for this task were informed by the data and reflections assimilated throughout the previous case study phases, allowing step 5 to produce an approach to risk ownership that was accepted on first pass to the board members – thus producing both a new tool for the organisation and new knowledge (on what a nationally significant organisation finds useful).

The researcher offers the view that while both case study and action research methods require reflexivity on the part of the researcher, it is perhaps more apparent in the case of the latter where this mindset 'adds value'. Ballard (2005:142) proposes three conditions are required for sustainable change: (a) awareness of what is happening, (b) agency or the ability to find a response that is personally meaningful and (c) association with other people in groups and networks. If we refer back to Easterby-Smith et al (2002), who offer the action researcher as a medium for change, then it holds that the action researcher should have these three conditions foremost in their mind for reflection on how best to shape them in order to deliver sustainable improvements.

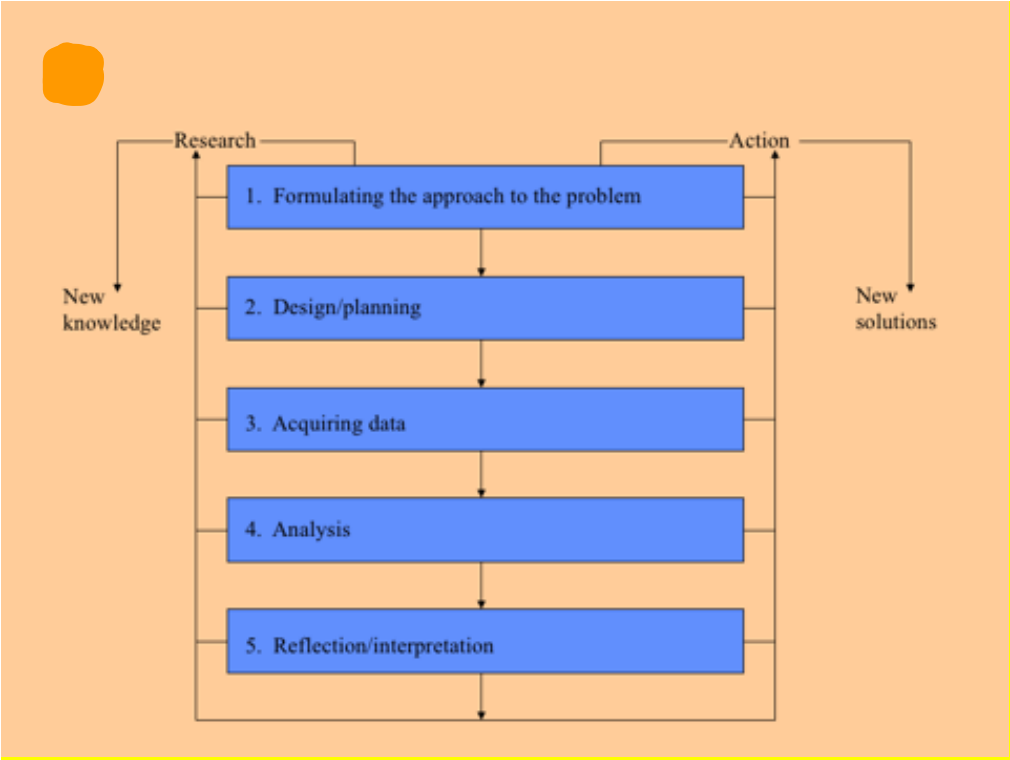

Figure 4-7: Steps in Action Research after Karlsen, J. (1991:150)

4.7. Criteria for assessing the quality of this research

I offer the following eight criteria against which to judge the quality of this research; firstly from Golden-Biddle and Locke (1993) the criteria of:

- Authenticity: through demonstrating vitality of a lived experience
- Plausibility: how well it connects to the readers' experience; as validity is subjective, then it is the extent to which the recipient finds it plausible or trustworthy that counts (Ahrens, and Chapman, 2006:834).
- Criticality: how well it prompts readers to challenge their assumptions/beliefs

Then from Reissman, K.C. (1993:64) criteria for validating the contribution of my work:

- Persuasiveness: work that is seen as reasonable and convincing; where theory is supported by the account given, and alternative interpretations of the data are considered. There is a dependency on the rhetoric of writing – and reader response (1993:66)
- Correspondence: take back the results to those being studied, to find out what they think of the work. While individuals have moved on, and others may not share my views, it is important that we find out what participants think of our work (1993:66)

- Coherence: my thesis content is consistent with how I use that data/write it up; and how I use my thesis to inform selected audiences is consistent with what I have written in it.
- Pragmatic Use: the extent to which my thesis becomes the basis for others' work; "if our overall assessment of a study's trustworthiness is high enough for us to act on it, we are granting the findings a sufficient degree of validity to invest out own time an energy, and to put at risk our reputations as competent investigators" (Mishler, 1990:419).

The quality and validity of contribution of this thesis have been tested to date via the following formal presentations and draft papers shared with the academic and practitioner communities:

Presentations:

Aston DBA Colloquium Apr 2016 (Methodology)

Aston DBA Entry Viva Jun 2016 (Methodology)

BAM DBA Symposium Oct 2016 (Methodology)

Aston MARG Conference Oct 2016 (Methodology/Initial Findings)

Navy Command Finance Director meeting Dec 2016 (Initial Findings)

Navy Command Head of Portfolio Office/CRO meeting Jan 2017 (Initial Findings)

Aston DBA Colloquium Apr 2017 (Findings)

ENROAC Conference Jun 2017 (Methodology/Findings)

Aston MARG Conference Nov 2017 (Findings)

Aston DBA Colloquium Apr 2018 (Philosophy/Findings)

Conference/Working Papers:

- A Levers of Control perspective on managing risk in organisations of national significance: the case of the Royal Navy (for MARG 2016)
- Interim findings on the management of risk to Navy Command's portfolio (working paper dated Jan 2017)
- A management control perspective to managing portfolio risk in organisations of national significance: the case of the Royal Navy (for ENROAC 2017)
- Management control of portfolio risk in organisations of national significance: the case of the Royal Navy (for MARG 2017)

- Management control of portfolio risk in organisations of national significance: the case of the Royal Navy (for QMUL DBA conference 2018)

4.7.1. Caveats

The following considerations are offered as to why this thesis might be less than perfect. Richardson (2003:517) offers the imagery for "validity" of postmodernist texts as a crystal; as opposed to data previously being triangulated to enhance their reliability a crystal combines substance with "an infinite variety of shapes, substances and transmutations and angles of approach". Crystals are prisms that reflect externalities and refract from within themselves; what we see depends on our angle of repose. Richardson states:

> "Crystallisation, without losing structure, deconstructs the traditional idea of validity (we feel there is no single truth, we see how texts validate themselves), and crystallisation provides us with a deepened, complex, thoroughly partial, understanding of the topic. Paradoxically we know more and doubt what we know. Ingeniously we know there is always more to know". (2003:518)

It is in this vein, therefore, that the analysis and findings are reported. It is, no doubt, only a partial view of what was taking place in Navy Command during the reporting period; and an interpretation that is coloured by the researcher's own limitations to observe and understand, as well as biases from previous experiences. That said, the report is offered as 'trustworthy' based on the rigour of the consideration put into the research protocol, the wealth of peer review from far more experienced academics working in the field, and feedback from the practitioners being researched that they 'recognised' the work being produced. Perhaps ultimately, the fact that the case study morphed into action research and new ideas from the researcher was incorporated into the business' practices can be taken as validation of the trustworthiness of the DBA research programme.

In considering the limitations of the design and analysis of the chosen approach, the author is drawn to Dubois and Gadde's (2002) view that theoretical frameworks, empirical fieldwork and case analysis evolve simultaneously; they offer four factors that affect this evolution: (1) what is going on in reality; (2) available theories; (3) the case that gradually evolves; and (4) the analytical framework. In this research design there was only one researcher and it was confined to observations over a one-year period; there was undoubtedly much that wasn't covered or covered in the depth that additional resources would have allowed. The time factor also influenced available theories and analytical framework; as a new researcher there was a wealth of literature available to

me – I just had to realise that it was there. Initial supervisory meetings revealed key Management Control Systems literature for theory (Simons, 1995; Ferreira and Otley, 2009); and these have remained consistent, with theories from other authors being added to the key literature repository. Literature on the theory of risk management took a little longer to identify. Initially a perspective given by Hillson and Murray-Webster (2008, 2012) seemed to offer a useful framework; however, following a meeting with Dr Murray-Webster[9] it was suggested that a more 'theoretically robust' framework would be better suited to support a post graduate research programme. Continued reading lead to the works of Professor Mikes on risk management framework tools (2015), cultures (2009) and role of the risk management function within an organisation (2011). Given the pedigree of this work and the perceived fit with the research questions the design is set to answer, it is this theory that has in the main influenced the analysis and findings. With more time, or at least more capacity, to read further it is possible that there are other theories published that would also usefully add to the interpretations made within this thesis; but we are where we are, and the author having read extensively and drawing on the advice of his supervisory team and others believes that the most appropriate theoretical underpinnings have been selected.

Some readers, perhaps with a positivist viewpoint might be looking for more triangulation than this research can offer; believing that "any finding or conclusion in a case study is likely to be more convincing and accurate if it is based on several different sources of information" (Yin, 2014:120). This author has a different view on the benefit of additional data; though still requiring a systematic combining approach, the emphasis is not on checking the accuracy of the data by cross-reference with other rather he believes that any one source can be interpreted 'accurately' but that multiple sources may contribute to revealing aspects unknown to the researcher (Dubois and Gadde, 2002:556).

4.8. Overcoming shortcomings – a reflexive methodology

> "Reflexivity challenges us to address fundamental questions about the nature of reality, knowledge and our own ways of being – to take a leap into a constantly shifting ocean rather than studying organisational life from the security of the shore - …by stimulating a critical exploration of how we constitute knowledge and enact our own practices as researchers" (Cunliffe, 2003:999).

[9] I'm grateful for the introduction facilitated by Dr Andrey Pavlov (of Cranfield School of Management) following the BAM DBA Symposium.

Given the above ontology, epistemology and challenges with producing representations of intersubjective knowledge, I adopted a reflexive approach to this case study in order to enhance the quality of the research; to this end the research design included:

- Theory that initially guided my research design and data collection plan; where theories were chosen with most perceived relevance to research topic and intuitive for me;
- An iterative process of data collection and analysis that enabled me to 'circle in' on those most salient aspects of the research topic;
- Careful and timely transcription of observed events, interviews and document reviews contributing to an authentic account;
- (Continual) consideration of how my analysis contributed to knowledge which enhanced the internal 'consistency' of the thesis and its' criticality;
- Reflecting on what I've done, sharing my analysis with others and taking their views into consideration which refined the persuasiveness of my 'product';
- (Continual) consideration how I was 'telling' my analysis positively affected how the quality of my research was perceived.

4.9. Methodological lessons learnt

Two pieces of advice received early on in my time as a researcher have proved to be particularly invaluable[10]: (1) "don't read without writing"; and (2) "write up your observation notes within 24-48 hours of an event". Combining these two instilled a mindset that I needed to invest adequate time each day/week just to record what I was reading and observing, so that I would be able to retrieve it and refer to it when the time came for more considered analysis. While this rigorous approach markedly increased the amount of time spent on my part time DBA, it has, I believe, been essential in order to be able to draw together relevant data to underpin new findings.

The use of Field Notes to record the progress of the research programme has also greatly assisted recall as I enter the writing up phase. By way of an example, here is an extract from the method section of a note written on 11 January 2017, covering the period 23 January 2016 – 8 January 2017, where I was attempting to write my up my initial analysis:

> "This note captures my challenge with deciding on the format to use to report my interim observations for the period July 2016 – 5 January

[10] It is with regret that I can't recall who gave the first piece of advice, but it was given during our Research Methods Course preparation phase for entering doctoral research; the second came from my supervisor, Professor Margaret Woods, as feedback on my intended approach for data collection.

> 2017. I struggled over the early part of December to understand how to best record my findings…Initial thoughts were to use the Assessment framework headings…This did not prove easy/intuitive how I would refer to the data/findings when it subsequently came to analysing….Having then reflected on my research question, namely how do the Levers of Control relate to risk management I then assessed each aspect of risk management that I had observed for its relation to one of the 4 Levers, and then brigaded my observations under one of those 4 headings…
>
> This produced file 20161231 (filed in DBA chapter findings); at 30 pages it was thought to be too long to get the key messages to the naval readership so I formed a summary file of the 12 observations…Having trialed the summary file with ACOS ICP (a knowledgeable officer with experience of 'landing' sensitive information within organisations) I decided not to email the files out – still at 6 pages length - but rather to seek a meeting with the key Portfolio Office staff to discuss my findings. This will take place on 12 January 2017"

The other lesson I take from the above Field Note is the importance of engaging with staff in the work place as the research is unfolding; in this case engagement with ACOS ICP helped understand how best to reflect back information into the organisation; and then with Head of Portfolio Office to confirm a mutual recognition of how risk is performed and understand the organisation's priorities for improvements.

Practitioner interaction is important, but so too is interaction with the academic supervisory team. Aston uses teams, rather than individuals to supervise doctoral students, in order that all the needs of the student can be met; they characterise these as: main theory specialist; research methods specialist; someone to talk with. I found it hugely reassuring and helpful to have a responsive supervisory team; while I may have been reasonably confident in my ability to understand organisations and risk management, there were many times when I appreciated the opportunity to 'check in' and discuss how I was approaching my research. The personal notes section of the previous Field Note records:

> "I am pleased to have completed an interim observation write up; having sent it to two of my academic supervisors (Melina and Angela) I am keen to discuss it with them when we skype on Friday 13 January 2017."

4.10. Alternative approaches considered

Whilst a quantitative and mixed-methods approaches were considered prior to commencing the case study they were discounted during the research methods phase of the programme. The arguments for discounting the alternative methodological approaches are based their philosophical inconsistency to the author's ontological and epistemological perspective.

4.11. Summary

This chapter has recorded how the author's internal-realist ontology and non-positivist interpretive epistemology combined with his natural predication for a reflexive approach combined with the nature of the research questions to necessitate a qualitative research methodology. Thereafter the freedom of the access granted, and seniority of the actors being researched lent themselves to research methods of observation, document review and semi-structured interviews. The data being sought was influenced by themes drawn from extensive literature reviews in the fields of management control theory, risk management theory and the conduct of qualitative research; with follow-on reviews taking place as new themes emerged. The author believes that it is shared knowledge that is 'useful' thus a series of interactions took place with practitioners – both within and outside Navy Command – and academics in order to be able to test and refine the interpretations of what the data was 'saying'. Findings on the three research questions are presented in chapter 5 for management control systems (RQ1), in chapter 6 for control of risks (RQ2), and in chapter 7 for assurance of risk (RQ3). The proposal for the overall model, (RQ4) that should be used to enact risk management is discussed in chapter 8. In some respects, this chapter on research design and methodology has recorded finding for the conduct of a qualitative case study, performed by a reflexive non-positivist internal-realist with an interpretivist stand point.

5. Findings on RQ1: How are management control systems used in portfolio risk management

Key findings reported in this chapter with associated literature:

MCS Design

- Evidence of the applicability of Simons (1995): Levers of Control Theory to risk management, with particular insights into:
    - social and technical controls in addition to employee perspective; Tessier and Otley (2012).
    - the need for complementarity and internal consistency between management control systems in order for effective overall control; Mundy (2010), Grabner and Moers (2013) and Kruis et al (2016).
- Evidence of the utility in researching risk management of Ferreira and Otley (2009) extended framework for performance analysis; and empiric support for Broadbent and Laughlin (2009) development of the underlying nature of the control.
- Case study insight into the applicability of Adler (2011) revised framework for performance management analysis that portrays the complexity of management control through a package of dynamic control systems.

Contingent variables

- Support for Woods (2009) contingency perspective to risk management in a public sector organisation; and the proposal of a fourth variable that influences the design of the organisation's risk management system.
- Insight into how leadership, a sub-set of the contingent variable of organisational structure reviewed in Chenhall (2003), applies to risk management control system; with the thesis that leadership mindset should be an explicit contingent variable in its own right.

5.1. Introduction

This chapter considers management control systems theory as it applies to risk management. Palermo (2017) states that use of MCS in risk management has not been explored; this chapter uses two main MCS theories – Simons (1995) and Ferreira and Otley (2009) - to provide an insight into one particular organisation of national significance: The

Royal Navy. In addition to addressing the 'gap' identified by Palermo, the chapter also provides evidence of the role of complementarity, thereby providing further support for the work of Grabner and Moers (2013) and Kruis et al (2016) on benefit of complementarity and internal consistency; in this case, to avoid risk management being an unwelcome adjunct. Studying the characteristic of complementarity leads also to support for the need to consider the linkages between risk management with and other management control systems from a holistic viewpoint; a theme that is developed by Ferreira and Otley (2009) and Adler (2011). Behavioural aspects are picked up on by Fitzgerald (2018), which is a theme developed under the contingency perspective; in particular, the influence of leadership on culture and the roles of specialists.

The section is structured thus:

5.2 Findings on management control using Simons (1995) Levers of Control theory

5.3 Findings on management control using Ferreira and Otley (2009) extended framework of analysis

5.4 Findings on MCS as a package or system

5.5 Summary of findings in respect to Research Question 1 on management control systems.

In reporting these findings, the author is conscious that they are within a highly specific context; however, when taken in conjunction with findings from other case studies, they contribute to the body of knowledge by:

- answering Palermo (2017) view that use of MCS in risk management has not been explored – and provide an insight though use of various MCS/performance management frameworks and models.
- supporting Mundy (2010), Grabner and Moers (2013) and Kruis et al (2016) on the role of complementarity and internal consistency between control systems in optimising risk management system design.
- supporting Woods' (2009) public sector contingency framework plus proposing a fourth variable, that of the leadership's mindset (Linsley and Kewell, 2015).
- Providing insight into the complexity of management control system design, and the requirement to consider the various perspectives within the organisation on the nature of the controls in use; Adler's (2011) model is cited as one framework that seems to capture the salient aspects.

5.2. Findings on MCS use in risk management using Simons (1995) Levers of Control Theory

This section details the findings from researching portfolio risk management through the lens of formal management control systems applicability to Navy Command's approach to Portfolio risk management; analysis is provided on each of Simons' (1995) individual levers ahead of a synthesis based on observations of their interplay together.

The analysis of the documents and meetings identified as constituent parts of Navy Command's portfolio management framework revealed that all four of Simons' management control systems have a role in the function of portfolio – as well as the sub-function of risk - management. The findings, summarised below, show that beliefs are espoused using at least four enduring documents; strategic boundaries are set in the main by government or departmental documents - the exception being the Navy's Command Plan; six types of documents and databases contain diagnostic information on risk to performance; and a sequence of meetings make interactive use of the diagnostic information.

Management control systems identified using Simons' (1995) theory are recorded below in Table 5-1:

Characteristic	Management Control System			
	Belief	**Boundary**	**Diagnostic**	**Interactive**
Nature of the system	Explicit set of shared beliefs that define basic values, purpose and direction	Formally stated limits and rules that must be respected	Feedback systems used to monitor organisational outcomes and correct deviations from preset standards of performance	Control systems that managers use to regularly and personally involve themselves in the decision activities of subordinates
Purpose	Provide momentum and guidance to opportunity – seeking behaviours	Allow individual creativity within defined limits of freedom	Provide motivation, resources and information to ensure important organisational strategies and goals will be achieved	Focus organisational attention on strategic uncertainties and thereby provoke the emergence of new initiatives and strategies
Focus on:	Core Value	Risks to be avoided	Critical performance variables	Strategic uncertainty
Government **MOD**		• National Security Strategy; • National Ship Building Strategy; • Defence Strategic Direction; • Defence Plan • Annual Budget Cycle Submission		• Perm Sec/CDS H2A session;

Characteristic	Belief	Boundary	Diagnostic	Interactive
Navy Command	• Navy Mission Statement; • Fighting Instructions • Navy Core Values; • Navy Command Operating Model;	• Navy Command Plan	• Annual Capability Audit • Quarterly Performance and Risk Report; • ARM risk database; • Senior Board Mgt Information Pack; • Portfolio Risk Database; • Sub-portfolio local risk summaries	• 2SL H2A session; • Senior Board risk agendas; • RN Audit Committee agenda; • Sub-portfolio board risk agendas; • Risk review panels; • PMG risk agenda (including BOI); • Meetings with risk identifiers.

Table 5-1: Simons' (1995) Management Control System Theory as applied to portfolio risk management

The section now explains each of the management control systems in turn.

5.2.1. Belief Systems

There was relatively little explicit evidence of the influence of the formal beliefs, codified in Navy Command's Values statements or institutional beliefs conveyed in Fighting Instructions, control on portfolio risk management; though, perhaps only drawing on previous experience as a Royal Navy employee, it is evident that these pervade through the organisation. Similarly, though research identified the presence of the Navy Command Mission Statement and Operating Model – both of which had been widely disseminated through the organisation - neither were referred to explicitly in the observations/interviews in this case study. That said, there was an impression gained of the senior leadership and management implicitly using them as social controls, in the spirit of Tessier and Otley's (2012) development of Simons' (1995) Levers of Control theory, to influence strategic and operational outcomes.

5.2.2. Boundary Systems

Evidence was found of a formal contribution to portfolio management in the two boundary systems identified: Navy Command Plan and the Annual Business Cycle (ABC) Submission.; more detail on which is here:

Navy Command Plan

Navy Command Plan 16 was the extant document at the start of the period of the case study; containing as it does the detail of the ships, submarines, aircraft and personnel that it provides to Defence it is classified as SECRET. Remaining within the classification of this paper it is sufficient to state that Command Plan 16 explicitly referenced only a minority of those risks entered on the organisation's risk register database (based on proprietary software: Active Risk Manager (ARM)), and even a minority percentage of those defined as 'portfolio risks'.

In October, a note was sent to Navy Command Operating Board members stating, "the medium-term target for the NCOB should be to link our risks more explicitly to …Command Plan 16, to ensure they reflect a known resource position with an endorsed response plan". As the case study data collection phase was drawing to a close, Command Plan 17 was in the final stages of gaining approval; NCOB members' objectives in support of their contribution to delivering the plan were explicitly recorded, and staff analysis was being conducted to capture the risks associated to those objectives. The researcher interprets the evolution of performance and risk content between successive Command Plans as an encouraging precursor to more effective portfolio risk management throughout FY17/18 and beyond. Were this a longitudinal

study it would be interesting to gain insight into how the risks are eventually mapped to the objectives, and their subsequent management.

Annual Business Cycle Submission

Navy Command submitted their ABC 17 Submission on 10 Oct 2016. The Submission document states the financial position and how Navy Command intends to address and resource risk going forward; it is intended to be complementary to the corresponding Command Plan – in this case Command Plan 17 – though the timeline for finalising the latter lags the financial submission by some months. Review of email exchanges relating to ABC17 Submission reveal that in the document though "risk is mentioned 120 times" none of the risk specialists within the Portfolio Office were consulted in its preparation; as a consequence it makes reference to "areas of strategic risk not covered within the diagnostic systems of the Quarterly Performance and Risk Report or the ARM risk database"[11]

Analysis of Boundary Control Systems

The findings reveal insight into the extent of interdependence between the boundary management control systems progress. The researcher's interpretation – based on observations - is that there are encouraging signs of the understanding for the need for (and preparedness to make happen) more effective interaction between the financial, resource and risk control systems, with portfolio office staff striving to enhance the consistency of the narrative in the portfolio information flow. The findings revealed during the case study, however, that the control systems in place formed a package rather than system of MCS (Grabner and Moers, 2013) with an inconsistent dependency on the information provided from each system.

5.2.3. Diagnostic Systems

Of the six formal diagnostic control systems identified, as reported in section 6.2.1, due to time constraints in was not possible to conduct an in-depth review of all of the diagnostic systems; the Capability Audit, because of it being assessed as a "mature product"[12,] and the 'local' risk summaries due to their being irregular in nature were not reviewed. Thus, this sub-section focuses on the findings on formal diagnostic systems of: Quarterly Performance and Risk Report (QPRR), Enterprise Risk Management

[11] Source: Observer's notes memo created 12 Dec 2016 (CSD 072).

[12] Source: Observer's notes memo created 10 Oct 2016 (CSD 032).

(proprietary name: ARM) database; Senior Board Management Information (SBMI) Pack; and the Portfolio Risk database.

QPRR

Findings revealed that reporting using the QPRR format evolved through the case study period. Observing the use made of the first quarterly report for the year (Q1) in the NCOB meeting, it was noted that neither the executive risk statement, nor the heat map, nor the lesser class of risks were referred to. The purpose of the discussion was to ensure that the template which summarised the risk position, controls and mitigations clearly articulated the information such that it would be understood in Head Office; this behaviour is interpreted as being a consequence from the previous MoD's Risk Committee meeting observing that greater clarity was required from all of the Services (RN, Army and RAF) in their reports[13].

Similarly, in Q2, it was again the wording of the key risks that caught the attention of board members. The purpose of the key risk was also discussed with a view offered that they "tell the narrative of the navy"[14],

By Q3 the report, along with complimentary MI developed to support the meeting's agenda, was facilitating a greater understanding of the "enormous problems"15 captured within the navy's strategic risks, which had been brought to life by detailing the supporting (child) risks and tracking how they are progressing. That said, it was observed that within Navy Command the timeline – and perhaps wider process - for compiling the QPRR remains sub-optimal; evidence from observing the PMG - Navy Command's Risk Working Group – review of Q4 was that they still wanted to improve "the synthesis of warfighting implications from the resource decisions being taken"16. The implication being that the aspiration for the diagnostic tool – the QPRR – needs to be consistent with the interactive control system – the PMG agenda- that interfaces with it. Thus these findings illustrate the importance of the concept of complementarity raised by Kruis et (2016).

[13] MoD Risk Committee minutes dated 16 May 2016

[14] Source: Observer's notes memo created 11 Oct 2016 (CSD 034).

[15] Source: Observer's notes memo created 12 Jan 2017 (CSD 068).

[16] Source: Observer's notes memo created 7 Apr 2017 (CSD 111).

ERM Database

The Enterprise Risk Management system (most commonly referred to by its proprietary name "ARM" – Active Risk Management) is the aspect of the organisation's risk framework where the greatest concerns are held over its ability to contribute to effective management of operational risks[17]. These concerns focus on the fact that the volume of data entered onto the system precludes effective management oversight of the risks contained in the register; the implication being that this leads to a lack of confidence in the validity and reliability of the data, and thus ultimately in the usefulness of the database. This has the unintended consequence of allowing the risk register to be the 'scape goat' whenever risk 'conversations become challenging, and so may actually be hindering the management of risk rather than facilitating it through providing an excuse for inertia. The findings, from observations made during this case study, reveal that the ARM database and the time required to keep it accurate is out of balance (Kruis et al, 2016) with other elements of the control package thus not adhering to Grabner and Moers' (2013) need for 'internal consistency'.

SBMI Pack

The Senior Board Management Information Pack evolved throughout the case study, with the declared aspiration to have "one pack to support the meeting agendas of the NAVB, NCOB, Holding-to-Account and PMG"[18]. Of note at the close of the data collection phase the SBMI pack did not include a bespoke entry for strategic risks, which may have an unintended consequence of hindering familiarity with the strategic risks, and thereby considerations for contributing factors when discussing objectives and risks to them. This finding reveals an inconsistency between this diagnostic control and the other interactive/diagnostic controls in the package of systems used to manage strategic risks and risks to strategy[19].

Portfolio Risk Database

At the start of the case Study the MI in support of management of risks to the delivery of the Portfolio was still in development[20]; with the proposed Portfolio Definition

[17] Strategic risks – due to their security classification – are not held on ARM, so any perceived shortcomings in board-level risk management cannot be entirely attributed to this software support tool.

[18] Source: Observer's notes memo created 6 Jan 2017 (CSD 77)

[19] See chapter 7 for an explanation of the distinction between these two categories of risk.

[20] Source: Observer's notes memo created 28 Sep 2016 (CSD 002).

document[21] being sent to the NCOB and PMG members in November 2016. MI in support of November's PMG meeting included the portfolio risks database which contained 35 risks. The findings revealed that the volume of risks presented for members' consideration was inconsistent with the time available for discussion; an interesting new perspective on the theme of internal consistency (Grabner and Moers, 2013) in that the diagnostic (here the portfolio definition document) and interactive (in this instance the agenda time available for discussion) need to be aligned so as to present attendees with an achievable agenda item to discuss.

Analysis of Diagnostic Systems

The findings on diagnostic systems have shown there is inconsistency between the diagnostic QPRR and the Portfolio Management Group's desire to use interactive time together to improve the narrative the report conveys to the senior readership; a challenge of management attention and sequencing of information flow in a timely manner. Similarly, the ability to provide sufficient attention to the volume of risks held in Navy Command's overall risk register as well as the portfolio register, is hindering effective management of these risks; in the case of the latter progress has been made – as reported in the risk findings of Chapter 7. Finally, by omitting risk from the senior board information pack, the organisation is compounding the undesirable behaviours where finance, resource and risk to objectives are treated as stove piped packages rather than consistent system of information flow and decision-making.

In sum, the findings from review and observation of diagnostic systems supports Grabner and Moers (2013) and Kruis et al (2016) on benefit of complementarity and internal consistency to avoid risk management being an unwelcome adjunct.

5.2.4. Interactive Systems

Of the seven interactive systems identified and reported in section 6.1.2 one was out-of-scope for the Case Study[22]; the findings for two (Holding-to-Account; and RN Audit Committee) are reported in detail in Chapter 8; leaving this sub-section to detail findings on four interactive control systems, namely the meetings by: Navy Command Operating Board; Sub-Portfolio owners; Portfolio Management Group; and Risk Review Panels.

[21] Source: Observer's data note created 1 Dec 2016 (CSD 054).

[22] Due to it being an MoD meeting at the highest level, and thus access was not sought

Navy Command Operating Board

During the period April – December risk was discussed at the Navy Command Operating Board meeting on two occasions when the Quarterly Performance and Risk Report (section 5.2.3 above refers) was an agenda item. In July's meeting board members were still seeking meaningful management information on which to base their decision making; Navy Board risks were to be reviewed and reported in a new format, learning from the work done to date by one board member[23]. The impression gained was that the board needed time together as a collective in order to achieve an overall navy risk narrative they could all 'sign up to'; "there was not time to read the 120 page report" on progress against the Command Plan[24] and thus it appeared that some of its value as a diagnostic was being lost, as it could not be used effectively interactively for the management of the entire portfolio.

July's meeting was informed of the key safety risks that the Maritime Safety Board intends to raise at the next Navy Board, though in a separate agenda item to that for the QPRR. While the risks were recorded in ARM it was not clear the safety risks were explicitly referred to in the QPRR return. Similarly, key security metrics were discussed in the meeting; while ARM risks were recorded in the supporting slides, it was not clear how these were being addressed within portfolio management.

October's meeting contained the Quarter 2 QPPR return as an agenda item, with 70 minutes being assigned to the discussion; external advice[25] suggests this would be a typical allocation amongst many senior boards in the private and public sector. The discussion focused on the articulation of the key risks – four against outputs and seven against naval inputs. Attendees appeared to be broadly content with the output risks, which is where most of the staff effort had been applied, but less so with the meaning conveyed by the input risks. It was agreed that the input risks should be presented to the Navy Board, but that more work would be required. The discussion then broadened to consider whether all of the risks had been captured that that they should be concerned with, and how they could "better use risk to manage the business, rather than just staffing and polishing the risk statements"[26]. Following the meeting members' views

[23] Source: Observer's notes memo created 23 Sep 2016 (CSD 001).

[24] Ibid.

[25] Source: Observer's notes memo created 27 Oct 2016 (CSD 037).

[26] Source: Observer's notes memo created 11 Oct 2016 (CSD 029).

were sought by one board member, by means of an out of committee note, on how risk management might be better achieved within Navy Command.[27]

In the latter half of the case study research focused on Board members' treatment of risk to strategy, through the Balance of Investment process; reported on in Chapter 6 under research question 2. The findings from observations of NCOB meetings revealed a common theme, namely the need for complete and consistent diagnostic information to inform their agenda; as discussions informed by incomplete, immature or questionable data only serve to prompt debate on the information itself, rather than using the knowledge to inform implications for future business. That is not to say that uncertainty and unknowns cannot or should not be recognised, rather that the findings revealed the relative ease with which poor staff work derailed a productive interactive control event; thus providing further evidence of the requirement for internal consistency (Grabner and Moers, 2013) between diagnostic and interactive control systems.

Sub-Portfolio Meetings

Two Sub-Portfolio boards were observed for their governance of risk: those for Operations and Naval People.

The Operations Risk Review Board was observed in September 2016. The chair was very much focused on monitoring how the treatment responses were working, and thus being able to determine whether more or less action was required as a consequence of that judgement. Judgement was required, but first the chair needed to know what actions were being taken and by when – only then could an assessment be made on whether the predicted effect will happen. While the chair assessed that the meeting had a good 'handle' on its risks, more attention was required to completion of the entries on ARM – in particular the responses were not being completed with sufficient accuracy on timelines. This resulted in the verbal briefings/discussions being inconsistent with that recorded in ARM. That said overall the impression was that there was sufficient agenda time for each risk raised to the chair's attention, and that the interactive conversation helped enhance the shared understanding of stakeholders.

The findings show that there are opportunities to enhance understanding through improved data entry (accuracy of responses including timelines) into ARM, and explicit linkage of risk to performance in the QPRR so to enhance the interactive debate in the meeting's risk agenda items; the latter may also help clarify ownership where a risk spans across the seam of two 2* areas of responsibility. In this respect the findings

[27] Source: Observer's notes memo created 30 Nov 2016 (CSD 029a).

reveal that the diagnostic and interactive control systems are not internally consistent (Grabner and Moers, 2013).

The Naval People Board was observed in December 2016. An hour was allowed for the risk agenda item termed “risk scrutiny and update”; five risks were presented and one candidate risk offered for consideration. The chair wished to use the meeting to deep dive into their key risks in order to prepare for his holding-to-account (H2A) session the following week; aspects he wished to understand were:

1: What actions give confidence of risk stability and are these the same as those which NCOB report to Main Building?

2: How are action schedules monitored?

3: How likely is the risk to materialise?

It was also noteworthy that the Chair closed the risk agenda item by asking “are there any other risks that I need to represent to 2SL at the next H2A?”[28] thereby usefully confirming that all risks that should have been represented had been captured. The findings, from observation, reveal that the diagnostic material presented to the meeting was of a quality and quantity to be internally consistent (Grabner and Moers, 2013) with the interactive meeting it was devised to support.

From these two observation opportunities a number of deductions can be offered from the findings: (1) the input of timely and accurate diagnostic data to interactive sessions is vital to the effectiveness of the latter and validity of any decisions made therein; (2) the optimal sequencing of interactive sessions – here the Sub-portfolio review ahead of the Holding-to-Account meeting (see Chapter 8) has provided a far greater understanding of the key information – with associated implications for a more insightful exchange in the latter event.

Portfolio Management Group

Five Portfolio Management Groups meetings were observed during the period July 2016 – January 2017.

July’s meeting was still learning how to develop a portfolio understanding of risk; it was observed that the ERM software (Active Risk Manager) did not produce reports that were “2* friendly”[29] [2* being a grade of Admiral] resulting in PMG members locally

[28] Source: Observer’s notes memo created 11 Dec 2016 (CSD 065).

[29] Source: Internal paper undated, and memo note created 28 Sept 16 (CSD 002).

producing their own; one member thought his was good, while another less helpfully had a “rain forest”.

September’s meeting[30] considered the strategic Balance of Investment that Navy command would undertake in Feb 2017; see Chapter 7 for findings. The PMG’s aspiration was to set the context for those decisions: by which is meant provide

information to enhance the understanding of the issues for attendees and thus promote a more accurate perception of the risks involved.

October’s meeting, in keeping with the vision for the PMG to be the body that manages the Navy’s portfolio on behalf of the NCOB, was the first where (“albeit modest”[31]) decisions were taken on manpower actions to mitigate risks held against portfolio deliver; specifically, uplifts required in 11 areas. Management Information was provided in the form of a summary of risks held against the portfolio, and then a slide of description by each risk owner for the implications of not approving the uplift in manpower. Though opinion in the meeting diverged was on whether sufficient MI had been provided to make informed decisions, the meeting concluded that all the cases presented merited planning for an uplift (though four of the seven had not specifically tagged their request to a risk against programme delivery) and noted that a methodology would be developed to identify priorities.

November’s meeting was updated on the Balance of Investment progress; Additionally members updated the meeting on their “programme milestones with low delivery confidence, the associated risks and opportunities for PMG intervention”[32;] a supporting paper of portfolio risks was circulated. The impression conveyed was members were managing risks either through requesting additional finance (ABC Submission) or waiting for the Balance of Investment work to set priorities and that the context for resource reallocation to better support the priorities.

January’s meeting opened with the Chair reminding the meeting that their purpose was threefold: to share information amongst themselves; take a decision; or to pass information to the NCOB for their decision or information. An agenda rich with information on portfolio and risk management the key findings from observations[33] were:

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[30] Source: Internal paper undated, and memo note created 28 Sept 16 (CSD 007).

[31] Source: Internal papers undated, and memo note created 7 Oct 16 (CSD 021).

[32] Source: Internal paper dated 28 Nov, and memo note created 8 Dec 16 (CSD 041).

[33] Source: Internal papers undated, and memo note created 6 Jan 17 (CSD 077).

- QPRR return for Quarter 3 will exceptionally go to the NCOB without PMG prior review due to compressed timelines from the Christmas recess. In future PMG members will review the detail of the (now) 60-page report, leaving NCOB members with more capacity to reflect on the key messages on the front pages. The finding here is that timing of information flow is an important aspect of internal consistency (Grabner and Moers, 2013) and balance (Kruis et al, 2016) between control systems.
- Portfolio Management consisted of verbal updates from members on their respective sub-portfolios; though displayed, the Portfolio Definition Document 'sunray diagram' milestones were not referred to. The finding here is that content and utility of information flow is an important aspect of internal consistency (Grabner and Moers, 2013) and balance (Kruis et al, 2016) between control systems; if a diagnostic tool is not used, its purpose and format should be reviewed in order to enhance organisational efficiency and effectiveness.
- PMG agenda. The meeting considered the content of PMG agendas to support the annual business cycle. One member observed that there would be a natural information/decision cycle around the key events of Capability Audit, Balance of Investment, Annual Budget Cycle and Command Plan endorsement[34]. Subsequently, it was noted that agenda time would be required for the Group to fulfil the role of Risk Committee. The finding here is that amount of time required for effective information flow is an important aspect of internal consistency (Grabner and Moers, 2013) and balance (Kruis et al, 2016) between control systems.

In summary the findings from observations of the PMG meetings supports the view of the need for 'internal consistency'(Grabner and Moers, 2013) and balance (Kruis et al , 2016) between the various control systems: allowing sufficient time between the various governance meetings to consider papers; displaying management information that is useful – as demonstrated as a minimum by it being referred to in the meeting; and a coherency between the boundary, diagnostic and interactive control systems in use.

Risk Review Panels

Findings from two different interactive approaches, below the organisational-level of the sub-portfolio owner, were gained through interview: a formal review committee and an 'informal' conversation. I met with a sub-portfolio risk manager to understand the

[34] This corresponds to my interpretation shown in sub-section 5.2.4 on portfolio meetings above – without any collusion between me and the staff risk specialist author – which I take to be validation of the accuracy of my observations to date.

preparations that take place to assure the quality of risk information presented to a Sub-Portfolio Board. In one particular area the risk management panel convenes every 4-6 weeks to consider: new risks; risks that are past their assessment date, and - a new theme – infrastructure. Action trackers for decisions made in the meeting are followed up as part of the agenda for the subsequent meeting. A sense of a rigorous approach to risk management was conveyed. The review panel was chaired by the risk manager for that area, supported by capability subject matter experts; the output from the review session was a comprehensive MI depiction of the underlying risks to their deliverables – most notably infrastructure. Of note this was locally produced as the ARM product was not "user friendly" for portraying the comprehensive picture of risk. It was stated[35] that, following a recent board meeting, the sub-portfolio owner felt well prepared for his next H2A session with 2SL and able to have a meaningful conversation with another 2* regarding infrastructure.

An alternative approach taken by another sub-portfolio is an annual cycle of risk review periods. This measured approach, using reasonable length sessions with staff (1 – 4 hours with groups of experts from same areas) is used to discuss their risks. Over a 2-month period this allows a review of all risks with every risk owner. It being a new initiative, a yearly cycle with a rolling programme of 3-month blocks is envisaged, alternating focus between Risk and External Dependencies (using 3rd order assumptions to frame the review of the latter).

The findings from insights into the two risk review panel approaches reveal that 'informal' approaches can play a role in contributing to a fuller understanding of the salient facts associated with the key risks, and thereby make a valid contribution in parallel to the organisation's endorsed formal controls. They reveal an aspect of 'social control' which Tessier and Otley (2012:179) conceptually develop out of Simons' (1995) theory; in that through empowering and engaging employees the management are appealing "to the emotional, non-rational, affective elements within employees" (Ray, 1986:288). The findings thus also provide insight into the relational aspects of exchanges between manager and employee.

5.2.5. Analysis of findings using Simons (1995) theory

Analysis of the findings on formal management control systems in use within this case study have demonstrated that Levers of Control can be used and adjusted to control risk (Simons, 1999:92), and in doing so have responded to Palermo (2017:144)

[35]Source: Observer's notes memo created 11 Dec 2016 (CSD 067).

observation that “Levers of Control have never been explicitly tested in relation to ability of defined control systems to help organisations manage risks”. But it is the way that they’re complementary which speaks to the work of (1) Mundy (2010), Grabner and Moers (2013) and Kruis et al (2016) on balance and internal consistency, and (2) the influence of the way management presents the control on employee perceptions and thus attitude (Tessier and Otley, 2012). In this case study’s findings inconsistencies were found between three formal control systems: boundary, diagnostic and interactive. Inconsistencies concerning meeting timelines and the management information used, which had implications for, and resulted in, sub-optimal interactive sessions where senior leaders’ dialogue is focused – incorrectly – on the data rather than debating the implications of operational risks for the future of the business; and in some instances in the early phase of the study, agenda discussions where the diagnostic data wasn’t referred to at all. It may be that, as with Mundy (2010:514), this can be explained in part by the historical dominance of the tendency to relay on the risk content in the diagnostic QPRR to reflect the key information; compiled largely by distilling written inputs from a multitude of subject-matter experts. An imbalance between interactive discussion of the key narrative that the QPRR conveys and the diagnostic compilation has resulted in management frustration at the senior (Portfolio Management Group level) at their ability to shape the business; as Mundy (2010:515) reports “interactive system is crucial in retaining the balance of appropriate management control systems”. Thus better balance in the interactive use of diagnostic system could help mitigate the frustrations experienced with PMG membership, improve their perceptions (Tessier and Otley, 2012) and thereby improve the input to NCOB risk agenda items. Balance is also complex and dynamic, thus as significant number of employees change roles, or individuals in significant roles change the extant balance should be reviewed.

There are then aspects of formal management control that can be addressed to enhance portfolio risk management within Navy Command, but formal control systems are only one aspect of management control. Limitations raised of Simons (1995) theory are that it does not address informal control processes such as group norms, socialisation and culture; this is important as “social or cultural elements are seen to subtly shift power and hence buffer and modify the influence of forms of control” (Collier 2005:324). In part these were addressed by analysing the findings using Tessier and Otley’s (2012) conceptual development of Simons’ (1995) theory, which revealed the influence of social controls. The relative simplicity of Simons’ (1995) Levers of Control model provides welcome clarity for researching formal aspects of management control. Though sometimes (Berry et al 2009: 6) referred to as a limitation, Simons’ Levers were developed at the senior management level, so the theory may only apply to that level.

Given the focus of this case study was management control of risk at senior board level, the limitation is not seen as hugely detrimental to the findings offered here.

The findings from applying Simons' (1995) Levers theory to portfolio risk management are summarised here:

- All four levers have a role to play; thereby supporting Simons (1995); Tessier and Otley (2012); Mundy (2010); Grabner and Moers (2103); Kruis et al (2016); Palermo (2017).
- The accuracy and validity of the diagnostic information has profound effect on the effectiveness and veracity of the interactive sessions; supporting internal consistency and balance concepts of Mundy (2010); Grabner and Moers (2103); Kruis et al (2016).
- Interactive systems can be either formal or informal: both have a role to play; thereby supporting Tessier and Otley (2012).
- While the influence of the belief lever was less evident than others, it is assumed that it was never-the-less shaping the entire context for the exchanges within the other three levers.

5.3. Findings using Ferreira and Otley (2009) extended framework for analysis

Having reported findings on Navy Command's risk management system through Simons (1995) Levers of Control theory, the thesis now addresses findings on other aspects of risk management that were brought into focus through reference to Ferreira and Otley (2009) extended framework for reviewing management control within organisations.

Overall the use of Ferreira and Otley's (2009) framework proved to be a useful research approach that facilitated a holistic insight of the rational administrative aspects (Dugdale, 2018) while providing a sense of the behavioural/relational influences (Broadbent and Laughlin (2009) on the system's use. Four of the questions and two of the factorial aspects in Ferreira and Otley's (2009) extended framework prompted new insights that had not been revealed using Simons' (1995) theory; reported below here, and summarised in Table 2 in italic font.

5.3.1. Vision and Mission (Q1)

Consideration of Ferreira and Otley's (2009) Question 1 (Vision and Mission) prompted insight findings into what other control systems were used within the organisation to convey information to the wider workforce. Within the Royal Navy as a whole there is a line management/pastoral care arrangement where Divisional Officers have responsibility for a number of employees; through this system the navy's key messages are disseminated and the opportunity given for questions and feedback. Within Navy

Command this is augmented by 'townhall' meetings where senior leadership on a quarterly basis verbally brief the key messages to the gathered staff and take questions and observations. This finding of a parallel and complementary interactive control system highlights the importance of the notion of complementarity (Grabner and Moers, 2013) between control system reported previously in section 5.2.

5.3.2. Key Success Factors (Q2)

During the case study the delivery of a Carrier Strike capability and Continuous at Sea [Nuclear] Deterrence were central to the Royal Navy's contribution to Defence, pervading all management meetings and setting the context for written and verbal information. In a resource constrained environment understanding what the key factors for success are is fundamental to effective prioritisation. Though the two given priorities were made explicit, analysis of interview transcripts indicates the desire for yet more understanding of Navy Command's key success factors:

> "what I don't see is Defence Board or Navy Board risks coming down and then me saying ok: what is my part in their plan; if the Fleet Commander said that the thing that keeps me awake at night is XXX – if I had those kind of really meaningful top down risks or concerns – then I could have much more idea of my part in their plan."

As the case study progressed this top down clarity developed, through the endorsement of an audit trail between Defence Board and Navy Board risks.

These findings provide an explicit example of linking performance and risk and provide further evidence in support of Boholm and Corvellec's (2011) concept of risk in relation to an object of value – in this case the key success factors.

Framework Question/element	**Application to portfolio risk management in Navy Command**
Q1 Vision and Mission	What is the vision and mission of the organisation and how is this brought to the attention of managers and employees? What mechanisms, processes, and networks are used to convey the organisation's over-arching purposes and objectives to its members? Royal Navy Mission statement, Future Navy Vision, Maritime Strategy to 2035 all hosted on intranet; used to inform internal strategic messaging; *Divisional system conveys over-arching purpose;* *Line management conveys objectives.*

Framework Question/element	Application to portfolio risk management in Navy Command
Q2 Key Success Factors	What are the *key factors* that are believed to be central to the organisation's overall future success and how are they brought to the attention of managers and employees? *Delivery of a Carrier Strike capability and Continuous at Sea [Nuclear] Deterrence were central to the Royal Navy's contribution to the government's most recent Strategic Defence and Security Review; these are conveyed through the written and verbal word information*.
Q3 Organisation structure	What is the organisation structure and what impact does it have on the design and use of performance management systems (PMSs)? How does it influence and how is it influenced by the strategic management process? Navy Command Operating Model
Q4 Strategies and Plans	What *strategies and plans* has the organisation adopted and what are the processes and activities that it has decided will be required for it to ensure its success? How are strategies and plans adapted, generated and communicated to managers and employees? National Security Strategy; National Ship Building Strategy; Defence Strategic Direction;
Q5 Key performance measures	What are the organisation's *key performance measures* deriving from its objectives, key success factors, and strategies and plans? How are these specified and communicated and what role do they play in performance evaluation? Are there significant omissions? Annual Capability Audit
Q6 Target setting	What level of performance does the organisation need to achieve for each of its key performance measures (identified in the above question), how does it go about *setting* appropriate performance *targets* for them, and how challenging are those performance targets? Balance of Investment
Q7 Performance evaluation	What processes, if any, does the organisation follow for *evaluating* individual, group, and organisational *performance*? Are performance evaluations primarily objective, subjective or mixed and how important are formal and informal information and controls in these processes? Quarterly Performance and Risk Report; ARM risk database; Portfolio Risk Database; Sub-portfolio local risk summaries
Q8 Reward systems	What *rewards* — financial and/or non-financial — will managers and other employees gain by achieving performance

	targets or other assessed aspects of performance (or, conversely, what penalties will they suffer by failing to achieve them)? *Annual personal performance reports* *Honours and Awards* *Civil servant bonus schemes*
Framework Question/element	**Application to portfolio risk management in Navy Command**
Q9 Info flows, systems networks	What specific *information flows* — feedback and feed-forward —, *systems and networks* has the organisation in place to support the operation of its PMSs? Perm Sec/CDS H2A session; 2SL H2A session; Senior Board risk agendas; RN Audit Committee agenda; Sub-portfolio board risk agendas; Risk review panels.
Q10 Performance Management systems uses	What type of *use* is made of information and of the various control mechanisms in place? Can these uses be characterised in terms of various typologies in the literature? How do controls and their uses differ at different hierarchical levels? Diagnostically and interactively Informally and Formally
Q11 Performance management systems change	How have the PMSs altered in the light of the change dynamics of the organisation and its environment? Have the *changes in* PMSs design or use been made in a proactive or reactive manner? *Leaner QPRR* *More focused NCOB risk agenda* *Stronger risk 'dialogue between Navy Command and Head Office.*
Q12 Strength and coherence	How *strong and coherent* are the links between the components of PMSs and the ways in which they are used (as denoted by the above 11 questions)? Process of: Command Plan – QPRR –H2A is in place; Process of: Capability Audit – ABC – BOI – Command Plan – H2A could improve
Context factors	How might the context within which the organisation is operating be influencing the performance management systems? *MoD mandated; yet willing/keen to learn from best-practice.*

Framework Question/element	Application to portfolio risk management in Navy Command
Cultural factors	How does organisational culture pervade the entire package of control systems to influence choices and behaviours of individuals? *Surface, Submariners, Aviators, Royal Marines, Civil Servants*

Table 5-2: Performance management systems analysis framework applied to portfolio risk management in Navy Command; after Ferreira and Otley (2009:267)

5.3.3. Reward System (Q8)

Consideration of Question 8 (Reward System) resulted in insight findings into the reward system in the organisation. The 'divisional officer' system reported in section 5.3.1 is a mature performance appraisal system where objectives are set annual and feedback provided on the extent to which they are met. It is thus a pervasive overlaying formal control system which handles a vast array of information; a large research team and program would be needed to study it in any meaningful way.

The mere findings that a reward system is present within a hierarchical organisation, where advancement is based on meritocracy, however, is an insight that provides further support for Tessier and Otley's (2012) Levers of Control development of an employee perspective in addition to that of management – the employee here being the one receiving the reward. The reward system insight also supports Broadbent and Laughlin's (2009) view that performance management (and by implication management control) systems may be viewed by some as transactional in nature, and by others as being underpinned by relational rationality. As reported in the literature review (section 3.3.2) a relational perspective is one where the means employed by the system are subject to discourse and agreement between participants; which is very much the case for performance management and reward systems within Navy Command.

5.3.4. Systems Change (Q11)

Consideration of Question 11 (How have systems changed?) rather than produce findings, prompted a methodological insight for the author. With the various phases of the case study taking place over a number of years the 'facts' and assumptions gained during the early phases needed to be re-examined in order to understand whether they remained extant or what the new 'situation' looked like. This was consistent with the reflexive and iterative methodological approach reported in Chapter 4.

Contextual Factors

Findings on the contextual factors came from the contingency approach to risk management as reported in the literature review (see chapter 3), in particular Woods' (2009) research into a local authority. From her case study insight at the operational level Woods (2009:69) proposed three core variables of influence for the public sector: central government policies, information and communications technology (ICT) and organisational size.

The context findings in this case study support Woods' (2009) findings and propose a fourth variable, that of the leadership's mindfulness towards risk (the latter reported more fully in chapter 6). In terms of central government, the department of the Ministry of Defence issued policies that mandated an overall approach for risk management, yet Navy Command were willing and keen to learn from best-practice thereby replicating Woods' (2009:76) finding that "shared learning acts as a contingency variable". An illustration of this was the new risk management 'waterfall' tool (reported more fully in chapter 6) created by the author for Navy Command, as part of the research, being adopted by MoD Centre as best practice.

In terms of ICT again the findings in Navy Command supported Woods' (2009) findings in local authority. The most noticeable illustration of this variable is the diagnostic risk management database software system (an Enterprise Risk Management support system with the proprietary name of Active Risk Management) hosted on Navy Command's intranet (reported more fully in chapter 6). As a consequence of the format and data required to enter risks into the system behaviours in employees were influenced towards attempting to be quantitative in their assessments, even when assessments could be only at best subjective qualitative judgements. In turn this had an adverse effect on the impression of the effectiveness of risk management within the organisation, colouring the views of other, 'better', aspects of the system. These findings support Woods' (2009:78) finding that "ICT is a contingent variable which directly affects the risk management control system and also the quality of the service provision".

The findings also support the final variable identified by Woods (2009:78), that of organisational size; as with her study they confirm earlier contingency research findings (Merchant, 1981; Bruns and Waterhouse, 1975) that large organisations use formal management control systems that are managed by specialists.

Having found support for Woods' (2009) public sector variables, analysis of the findings suggested a fourth contingency variable - that of the leadership's mindset towards risk (the detail of which is reported more fully in chapter 6). Chenhall (2003:144) refers to leadership being a sub-set of organisational structure and cites Brownell's (1983:319)

work on its interplay with employee behaviour for organisational performance and employee satisfaction. The findings from this case study show that leadership was such a strong influence on the other aspects of risk management system design and performance that it merits its own explicit place alongside other key contingent variables in public sector risk management. Indeed, as Chenhall's (2003) organisational structure variable is attributed to private sector frameworks, it is this thesis' contention that leadership mindset is a contingent variable applicable for both sectors.

5.3.5. Cultural Factors

The findings on cultural factors reveal that there were perceived different approaches and attitudes towards risk management within each of the naval clans (aviators; submariners; surface flotilla; Royal Marines) (Ouchi, 1979). Navy Command's management approach, in the spirit of the delegated model of accountability, is to allow a fair amount of latitude in the way each of the sub-portfolio owners conducts their business (Lindsey and Kewell, 2015). This then gives rise to the influence of belonging to one of the Navy's sub-specialisation 'clans' on their attitude towards risk management and the ensuing behaviours. The senior leadership of any one clan will instill and perpetuate a certain ethos within their clan for many obvious reasons and benefits within a warfighting organisation; the influence of which will naturally continue to pervade through the more benign management of the business, influencing the motivations of both that element of the leadership and their employees.

Due to time constraints this aspect of risk management was explored in just one of Navy Command's 'clans', to gain an indication of the influence of this informal control: the aviators. Through interview and participant-observer meetings it was determined that the aviation community motivation for effective risk management maybe because they "have always managed safety risk and taken it extremely seriously because historically the risk to life in aviation has been significantly higher than the risk to life in other areas". In terms of the risk framework "there's a whole pyramid of meetings that underpin this and hold it all together" with a "safety culture which is not replicated in many other areas…have a reporting culture, they have an open culture, they will come back and say I got this wrong".

The interview data suggested that the culture rather than tool aspects of the framework was paramount:

> [Fleet Air Arm Safety Register is] ..." best risk management system that I have come across, and the tool is largely irrelevant – we used to do it on a spreadsheet. What made it good was that people bought into it; people who owned those risks, genuinely owned those risks,

> mitigated those risks and dealt with it. It's the only system I've seen which has worked and still does work really well… [we] have a series of meetings... particularly in terms of external assurance [Maritime Aviation Authority] Flight Safety Centre to look at the trends…to make sure we've got the risk in the right place and the mitigations are focused on the right risks"

The question was raised about ARM's 'consistency with the aviation culture:

> "we don't necessarily use ARM as a risk management tool. We use it because Navy Command says we should use it and we use it in order to get the results we need by using that tool: to highlight it to finance, or to make sure we fit in with the MI requirements. We don't use it to manage risk…. that's legacy of the fact that when it came in… people were chucking…. any risk they could think of and it was just a complete and utter mess". "We've managed risk because we see the value in managing the risk, not because we're told to use the tool".

Instead of 'flooding' ARM the Maritime Aviation Programme Support Office monitors aviation programme risks; "what we don't want to do is take those hundreds of programme risks and dump them into ARM because actually very few of them are of interest to anybody else in the building". Their cultural approach involves:

> "an interesting way of displaying it (i.e. risk) [and] relatively new way... brings in a temporal dimension." "we're looking at impact and how it's affecting operations but we're also looking at solutions and putting it in a temporal space so that we can actually focus the attention in the right area in terms of prioritisation of effort". A lot of these are translated into ARM but this is our management outside of ARM and then we make sure ARM reflects our key positions".

The findings from this small exploration of the influence of clan culture has exposed the importance of this informal control. Whereas frameworks can be devised and formal controls implemented, setting the context of the informal culture in order to provide the desired influence on the participants is key for achieving meaningful control; a role for the organisation's leadership. Behavioural aspects of management control was identified in the literature review as a softer and less direct control available to management –these findings have provided a vignette of insight into one aspect of behaviour, that of the clan mechanism (Ouchi, 1979); and thus supplied evidence in

support of Fitzgerald et al's (2018:267) contention that management is a set of relationships between measures, people and processes.

5.3.6. Analysis of the findings from applying Ferreira and Otley extended framework

The findings from applying Ferreira and Otley's (2009) extended framework to risk management in Navy Command has revealed insight into both its purpose and also the design of the system. In particular, it drew out through question 1 the wider control through the Divisional performance/pastoral system that helps convey a vast amount of information including that on beliefs and updates on the navy's mission. In doing so it provided evidence on the concept of balance and internal consistency between control systems, raised by Mundy (2010), Grabner and Moers (2013) and Kruis et al (2016).

Furthermore, findings on question 2 provided further support to the notion of risk in relation to what the organisation values as proposed by Boholm and Corvellec (2011); question 8 provided insight into the influence of the reward systems on behavioural and relational aspects of management control thus supporting Broadbent and Laughlin's (2009) development of Ferreira and Otley's (2009) framework; whilst findings on question 11 provided methodological lessons for a reflexive approach to research.

Finally, the finding on context and culture both provided valuable insight. Having found support for Woods' (2009) public sector variables, analysis of the findings suggested a fourth contingency variable - that of the leadership's mindset towards risk. In terms of culture the findings provided a focused insight into the aviator clan's (Ouchi, 1979) approach to risk; and thus supplied evidence in support of Fitzgerald et al's (2108:267) contention that management is a set of relationships between measures, people and processes.

5.4. Findings on MCS as a package or system - a holistic view

The findings in this case study also provide insight into the notion of management control needing to be researched as a package or system of systems (Grabner and Moers, 2013:407), and the criticisms levelled at contingency theory of "reductionism" missing the impact of the interplay between systems.

The control of risks within Navy Command, its risk management system, was studied initially through the application of Simons' (1995) Levers of Control theory. The case study findings revealed much about the 'Levers' applicability for risk, and also insight into other management control systems that influenced the control of risks – performance and resource controls. Thus support was given to the concept of internal consistency and balance between these controls (Mundy, 2010; Grabner and Moers, 2013; Kruis et al,

2016); they were de facto a package of controls that management used to control their organisational outputs – including the control of risks.

Studying the different levels of risks held by Navy Command (reported in detail in chapter 6) revealed that there were different cultures of calculation used for different classes of risk (Mikes, 2009), and the conversations and tools employed varied too. The findings revealed that the risk management system components of meetings, processes and roles of specialists were largely influenced by the influence of leadership (Linsley and Kewell, 2015), as a sub-set of the organisation's structure, along with other contingent variables (Chenhall, 2003; Woods, 2009).

The case study's findings also revealed the importance of the people aspect in the effectiveness of the risk management system; the need to distinguish between employee and senior leader (Tessier and Otley, 2012) as perceptions between the two will differ. Indeed, observations of the organisation revealed that the view of the entire control package will different between individuals – with some being transactional in their outlook, and others being more 'relational' (Broadbent and Laughlin, 2009).

The thesis contends therefore that a model of the complexity of that offered by Adler (2011), reported previous in Figure 2-7 (p34), is required in order to understand the entire package of management control used to exert influence in the control of risks.

The findings have revealed many insights into the constituent parts of the framework proposed by Adler (2011): Control of risks to delivering strategy (Simons, 1995) and the performance the organisation desires (Ferreira and Otley, 2009) (reported in chapter 6); operating procedures of risk meetings, processes and tools (Mikes and Kaplan, 2015) (reported in chapter 6); technical and social systems working in parallel and the importance of employee perceptions (Tessier and Otley, 2012); the presence of both relational and transactional perspectives (Broadbent and Laughlin, 2009); and the influences of contingent variables (leadership aspects of organisational structure) (Chenhall, 2003; Woods, 2009; Linsley and Kewell, 2015). Contingent variables that may best be thought of in a more complex contingency model, such as that of Dent and Ezzamel (1982) where causality may be reciprocal between the elements. All of which is wrapped up in a framework that conveys a sense of a package of dynamic systems evolving over time.

5.5. Summary

This chapter has reported case study findings gathered over the course of a financial year through a participant observer embedded within the Royal Navy.

Palermo (2017) stated that use of MCS in risk management has not been explored; this chapter has shown how management control systems theory, in particular Simons' (1995),

and Ferreira and Otley's (2009) work has applicability to the practice of risk management through providing insight into one particular context – the Royal Navy. As well as the gap identified by Palermo, the chapter also provides evidence of the role of complementarity, thereby providing further support for the work of Mundy (2010), Grabner and Moers (2013) and Kruis et al (2016) on benefit of complementarity and internal consistency; in this case, to avoid risk management being an unwelcome adjunct. A holistic approach to research question 1 revealed the complexity of management control, drawing the thesis towards the need for a framework that encompassed both formal and informal controls and the perspectives of different elements of the workforce; Adler (2011) appeared to fit the purpose. The research also supported the contingency theory approach to studying management control; supporting Chenhall (2003) and Woods (2009) findings and identifying a discrete aspect of organisational structure, namely leadership, that merited explicit reference due to its impact on the other aspects of risk management systems design.

By way of summary for this chapter, findings are presented to answer my first research question: How are management control systems used in portfolio risk management? In doing, as proposed at the start of this chapter, they contribute to the body of knowledge by:

- answering Palermo (2017) view that use of MCS in risk management has not been explored – and providing an insight though use of various MCS/performance management frameworks and models.
- supporting Mundy (2010), Grabner and Moers (2013) and Kruis et al (2016) on the role of complementarity and internal consistency between control systems in optimising risk management system design.
- supporting Woods' (2009) public sector contingency framework plus proposing a fourth variable, that of the leadership's mindset (Linsley and Kewell, 2015).
- Providing insight into the complexity of management control system design, and the requirement to consider the various perspectives within the organisation on the nature of the controls in use; Adler's (2011) model was cited as one framework that seems to capture the salient aspects.

The detail is captured in Table 5-3 below.

Having considered how portfolio risk management can be viewed through the lens of management control theory, in the next chapter the thesis provides analysis using findings on research question into control of two types of risk.

Management Control theme	Literature Review Section	Gap in literature knowledge	Findings Section	Contribution from this thesis
MCS Design				
Levers of Control: applicability to risk	2.3.1	*Levers of Control* Simons (1999:92) explicitly states "*The levers…are the mechanisms managers can adjust to control risk as a company pursues its strategy* Palermo (2017:144) "*Levers of Control have never been explicitly tested in relation to ability of defined control systems to help organisations manage risks"*	5.2	Case study insight Case study insight
Levers of Control: - social and technical modes. - manager/ employee perceptions.	2.3.1	Tessier and Otley (2012:182) *"the revised framework…is mostly conceptual and based on prior literature. Therefore it will need to be tested by using it in empirical studies"*	5.2 5.3.3	Empiric case study 'test' of framework

Management Control theme	Literature Review Section	Gap in literature knowledge	Findings Section	Contribution from this thesis
Levers of Control: - social and technical modes. - manager/ employee perceptions	2.3.1	Kruis et al (2016:27) "*the power in the four levers …does not lie in how each is used individually, but rather how they work together, how they complement each other and how they achieve balance.*" Grabner and Moers (2013:418) *"complementarity theory…[MCS] internally consistent...interdependence… the value of one [MCS] depends on the use of another"* (2013:418) *"for contingency theory to develop further, a bridge between the reductionist [single MCS approach] and systems approach needs to be built"*	5.2.3 5.2.4 5.2.5 5.2.5	Empiric case study examples of balanced and internally consistent MCS; using holistic/systems approach
MCS Design				
Ferreira and Otley (2009) extended framework for analysis	2.3.2	Ferriera and Otley (2012:263) *"provides a useful research tool…[that]…allows a holistic overview to be taken"* (Dugdale, 2018:18). "*framework suggests rational, administrative control that links success factors through strategy and structure to performance targets, evaluation and reward/penalties"* Broadbent and Laughlin (2009:293) conceptual development of the extended framework with underpinning *"nature of a PMS…alternative models of rationality…*	5.3 5.3. 5.3.3	Empiric case study examples of rationality underpinning use of MCS; using holistic research approach.

Management Control theme	Literature Review Section	Gap in literature knowledge	Findings Section	Contribution from this thesis
Ferreira and Otley (2009) extended framework for analysis	2.3.3	*transactional or relational."* *"while…primarily conceptual, its 'middle range' nature means that the empirical application and use of this conceptualisation is of paramount importance"*	5.3.3	Empiric case study examples of rationality underpinning use of MCS; using holistic research approach.
MCS package/holistic research	2.3.3	Ferreira and Otley (2009:275) *"strength and coherence of the links within a PMS is crucial to understand its operation".* Adler (2011:253) a revised framework *"unifying the previous taxonomies...[using] descriptors more likely to resonate with practicing managers"*	5.4	Case study insight into the holistic research approach to MCS
Behavioural aspects of MCS	2.4	Fitzgerald et al (2018:267) *"Performance management as a set of relationships between performance measures, people and processes"*	5.3.6	Case study insight

Management Control theme	Literature Review Section	Gap in literature knowledge	Findings Section	Contribution from this thesis
Contingent Variables				
Contingency theory approach to MCS research	2.3.4	Chenhall (2003:127) *influence of leadership, as a sub-set of organisational structure on management control;* Woods (2009:75) *a contingency framework for the public sector with three variables: central government policies, information and communication technology and organisational size; plus proposal of a fourth variable of leadership mindfulness.*	5.3.5 5.3.5	Case study insight Case study insight

Table 5-3: Summary of findings for management control systems use in portfolio risk management

6. Findings on RQ2: How are strategic and operational risks controlled?

6.1. Introduction

Key findings reported in this chapter and related literature:

Purpose of risk management

- Risk identification in relation to objects of value; Boholm and Corvellec (2011).
- Sense making within organisations; Weick (1995).
- Moral imperative to manage risks: Verhezen (2010).
- Requirement for demonstrable auditability by organisations; Power (1996, 2003a, 2003b, 2004a, 2004b, 2005, 2007)

Risk Management system design

- Risk management package of processes, meetings and tools; Mikes and Kaplan (2015).
- The interplay between risk types, the role of the risk function and the prevailing mindset; Verhezen and Dequae (2017:280).
- Examples of risk 'calculative culture'; Power (2007), Mikes (2009, 2011).
- Examples of roles of the risk function; Mikes (2011), Hall et al (2015), Mikes et al (2015), Kaplan and Mikes (2016).

Contingency perspective

- Proposal of a fourth contingency variable for public sector risk management; Woods (2009).
- Contingent variable role of the leadership's mindset in risk management; Linsley and Kewell (2015):

Having reported the case study findings in the previous chapter through the lens of management control systems theory, the thesis now reports on the findings specific to managing strategic and operational risks in order to answer the second research question: How are strategic and operational risks controlled? The findings reported below reveal insight into: risk management system design (through the influence of the senior leaders; the risk calculation culture; the framework of meetings and processes in place; and the contribution made by the risk function); the purpose of the risk management system (risk identification, sense-making of those risks and the need to demonstrate auditability); and proposes a fourth contingent variable for public sector risk management, namely the way

in which frameworks are applied is determined by the mindset of the leadership responsible for the management of the organisation's risks.

Noting Collier et al's (2006) assertion that basic management structures are common across large organisations regardless of sector, in analysing the findings the thesis draws on and contributes to the body of knowledge on risk management drawn from both private- and public sector – based research; specifically: the mindset for risk (Linsley and Kewell, 2015); the culture, including calculative culture (Mikes, 2009), that it shapes; on the ERM framework mix (Mikes and Kaplan 2015) of meetings processes and tools, and the influence of the latter (Hall et al, 2015) on the contribution that risk management can offer an organisation; and the role of the risk function (Mikes, 2011; Kaplan and Mikes, 2016) in the delivery of the organisation's outputs. Finally, in respect to contingency theory as it relates to risk, this chapter contributes an additional variable of leadership mindset to Woods' (2009) public sector contingency theory.

The chapter is structured thus:

6.2 Findings on the control of strategic risks

6.3 Analysis of controlling strategic risks

6.4 Findings on the control of risks to strategy

6.5 Analysis of controlling risks to strategy

6.6 Findings on the control of operational risks

6.7 Analysis of controlling operational risks

6.8 Summary of analysis and conclusion of risk management

6.2. Findings on control of strategic risks

Findings in this sub-section were obtained through observation of one Navy Board meeting risk agenda item; observation/participation in senior leadership risk discussions and numerous interactions with employees responsible for bringing the information together. The findings in this section reveal insight into risk management system design (through the influence of the senior leaders; the risk calculation culture; the framework of meetings and processes in place; and the contribution made by the risk function).

6.2.1. Risk mindfulness

Findings specific to mindfulness (Linsley and Kewell, 2015:6) are limited as observation was only possible for the latter of the three sessions where the Navy Board discussed risk. This section now reports findings on the three declared goals of risk mindfulness

reported in 3.7.1[36]. Due to the full agenda only a limited amount of time was provided for risk discussion, thus precluding a reflective approach whilst 'in committee'; that said there was certainly observable behaviours that demonstrate a preparedness to accept that risk can be handled in different ways and with respect for alternative views. As a sole observation it is not possible to report on whether risk discussions became normalised for Navy Board meetings.

6.2.2. Risk culture

The culture observed in the control of strategic risk was akin to the 'holistic 37' risk management reported by Mikes (2009:25). Strategic risks being non-quantifiable, the owners were not seeking statistics, but they did want to understand what the assumptions were based on, and what the confidence levels were that proposed actions would have the intended effects. Risk management culture observed here was one that respected and valued the judgment, experience and intuition of participants; very much in the realm of quantitative sceptics (2009:20).

6.2.3. Framework

Mikes and Kaplan (2015) offer a framework for risk management that entails the processes and meetings used by an organisation and how these link to other controls, along with the tools that are used; Hall et al (2015) develop this latter facet. The thesis now reports the findings on control of strategic risks using Mikes and Kaplan's (2015) framework.

Process and meetings

The Navy Board met twice early in FY 17/18 to review and agree the strategic risks the RN was exposed to; a risk statement for each risk was articulated. Following these sessions, the Chief of Staff for the Headquarters (COSHQ) initiated detailed planning through delineation of risk advisor and lead response plan owner for each of the risks held by a Navy Board (Navy Board) executive member; the advisor was one of the non-

[36] the literature review stated that 'mindful' approach related to a self-assurance to create a tailored approach to risk that fits the organisation's needs; as such it has three goals (1) to achieve acknowledgement that risk is a nuanced topic thus worthy of reflection; (2) the reflection should lead to acknowledgement that risk can be handled in different ways and with alternative perspectives, so leading to better formal and informal exchange of views; and (3) that discussion of risk becomes normalised not a supplementary activity.

[37] Mikes (2009:26) offers four ideal types of enterprise risk management; 'holistic' incorporates non-quantifiable risks into the realm of risks being managed using self-assessment and special risk reviews in order to provide senior management with a strategic view of risk

executive Navy Board members, and the lead response plan owner was a member of the Navy Command Operating Board.

During the autumn of 2017 risk owner, advisor and response plan lead met to consider each risk, informed by the information summarised on the mandated template (see Figure 6-1 below). Where diaries did not allow face-to-face meetings, it was agreed that follow on meetings should take place after November's Navy Board meeting as classification of the material did not lend itself to being discussed on the telephone.

At the November Navy Board meeting it was agreed that: the candidate new risks should be accepted into Navy Command's risk management system; that response plan owners on the Navy Command Operating Board would manage the mitigation plans, while Navy Board members retained ownership of the risks; the Portfolio Office would initiate work to understand the confidence in the response plans being delivered; and that the Risk Committee would, in due course, map the critical and severe risks held at 2* and 1* level to these new strategic risks.

The findings provide insight into the "ERM [Enterprise Risk Management] mix" (Mikes and Kaplan, 2015:39). Notably strategic risk management at senior Board level required infrequent formal face-to-face meetings, as responsibility for the corralling of underpinning detail and management information had been clearly articulated; and a management tool (the summary template at Figure 6-1) that board members were 'comfortable' with had been utilised.

Linkages to other controls

By endorsing, at their November meeting, that the risks were to be included into Navy Command's risk management system the Navy Board ensured that the risks would be included in the QPRR diagnostic system and thereby linked to resource and financial management control. These findings provide insight into Mikes and Kaplan's (2015:39) "ERM mix" in use within Navy Command, as well as supporting the concept of complementarity reported for management control theory in chapters 3 and 6.

Risk 'tools'

This section reports findings on two examples whereby the author, in support of the risk function, developed two tools to support the emerging needs of the executive. This finding provides supporting evidence for Hall et al (2015:4) assertion of the "central role of tools for risk function interaction with decision makers; 'engaged toolmakers' that adjust and reconfigure tools to meet the needs of the executive."

The first piece of evidence arose from observing one of the Navy Board risk owner's discussions with response plan lead and his risk advisor, where it become apparent that

a ‘handrail’ to guide stakeholders through the assessment and discussions would be useful; the author interceded and his summary accepted – so much so that he was invited to reproduce his approach and circulate it to inform other discussions; thereby creating a new tool for executive use.

The record replicated here forms part of the Innovation Action Research (Kaplan 1998) output that followed on from the case study phase:

Assessing Risk Exposure

In assessing an exposure to risk, regardless of the format in which the data is presented, the target risk position will be reached once all planned activity has been completed. A final check is therefore required to agree that the speed of implementing future controls/mitigations is timely given the timeframe of the risk ‘event’ occurring.

Using the format of the risk report detailed in Ref C, [a Joint Services Publication] a potential construct for an assessment of exposure to a risk is given below:

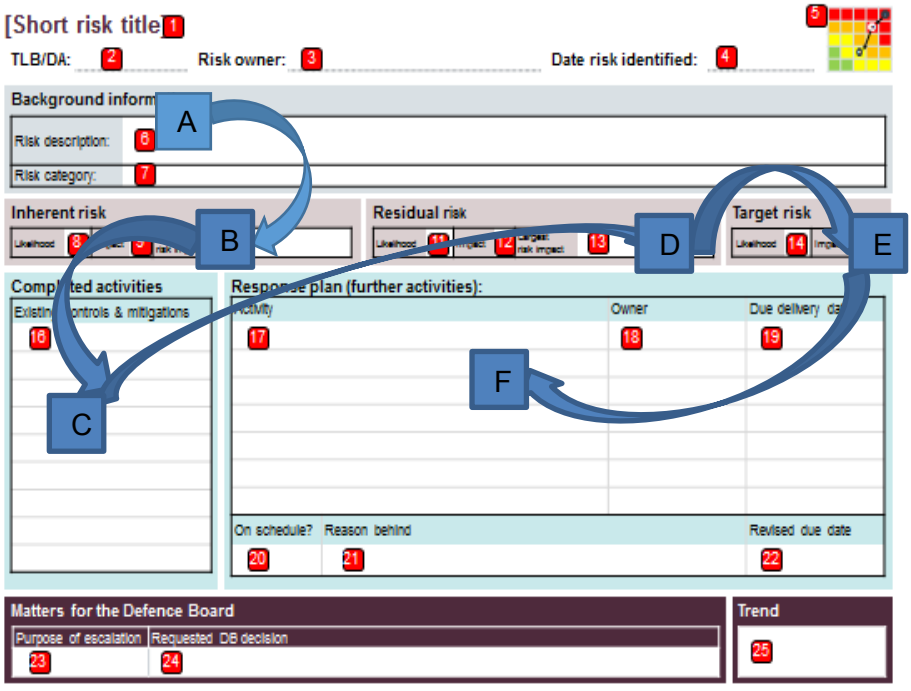

Figure 6-1Template for reporting a strategic risk with ‘logic’ of information assessment overlay (template from internal document; overlay from the author)

The risk owner states (letters and numbers while not spoken are those aspects of the template that the audience’s attention is drawn to):

A. {6}: “There is a risk of [event] happening in next [x] years caused by X, Y, Z resulting in [effect on output/reputation/finance]”.
B. “My assessment of the Inherent Risk {8,9,10} probability and Impact is XXX if no mitigation/controls in place”.
C. “However, given Completed control to date {16}, those controls reduce either the impact of probability to give:
D. Residual risk position {11,12,13}: position”.

Assessment: “I invite members’ comment on whether the **assessed residual risk position is valid** given the controls in place? And furthermore, **Is that risk position tolerable** – either due to likelihood, or because of scale of impact on Safety/Finance/Capability/Reputation (delete as appropriate)?”

E. “I suggest, therefore, that the Target risk position {14,15} is the position that Navy Command would wish to be in, given allocated resources”.
F. “I have consulted with response plan owners who confirm these plans (with owners and timeframe) which will reduce, collectively, either the impact or likelihood to the target position in the timeframe indicated.”

Assessment: “I invite members’ comments on whether **the target position agreed**? Is there confidence that the intended response plans will have the desired effect? **Are their timelines appropriate for the timeframe of the risk? Is the target position tolerable; if not what other resources are required?**

The second piece of case study evidence on the role of tool making comes from the author drafting a note to Navy Board members for their November meeting that summarised the candidate risks and the proposed approach for their management. In addition to using the ‘usual’ heat map of impact versus likelihood assessments, the author created a risk impact severity over time ‘waterfall’ schematic, where a risk’s severity was denoted by their combined impact (scored E highest – A lowest) and likelihood (scored 5 most likely – 1most unlikely) scores. The combining of impact and likelihood to allow severity to be represented on the y-axis, meant that representation of how the mitigation plans were affecting the risk exposure over time could be reflected along the x-axis; shown here in Figure 6-2:

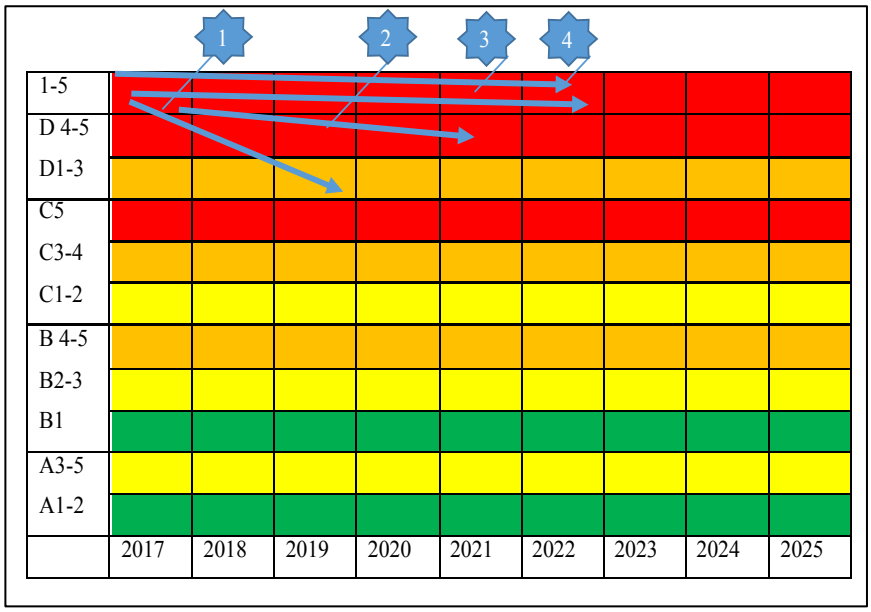

Figure 6-2: Risk Map showing Impact/Likelihood position over time (source: the author)

The waterfall, through presenting the information in a new format, prompted different discussion within the executive; discussions that they had wanted to have, but which the tools were not prompting them to achieve.

The findings thereby provide insight into the influence that can be exerted by the risk function through their developing new tools that address the needs of the executive, and thereby becoming part of the executive decision-making process (Hall et al, 2015:4).

6.2.4. Risk Management function

During the early phase, when the Navy Board were meeting to agree their strategic risks being held, the involvement of the Navy Command risk function was limited to the business practitioner perspective (Kaplan and Mikes, 2016:13) of the Navy Board member responsible for risk; with advice from the 2* Admiral leading on risk within the organisation, and workshops facilitated by MOD Head Office risk expertise. Subsequently the Navy's Chief Risk Officer was tasked with bringing the output from the workshops together in a plan that would assign ownership and responsibility for mitigation. Later in the period, when individuals were required to meet and agree the mitigation plans, the CRO position was vacant so the author was invited to fulfil the role of facilitator with responsibility for bringing together the recommendations for the next Navy Board meeting (in Oct 2017). Feedback from staff during the period of senior leadership reviewing and agreeing response planning included the observation that "without a facilitator this would not have come together". That said, the report would not have been so easily produced if there had not been the risk manager pulling together the detailed reporting into a coherent package.

> The findings reveal that all three variations of the role of the risk function – business partner (output focused), facilitator (helping good discussions happen) and overseer (compliance and internal control adherence) – were in place in Navy Command and fulfilled complementary roles to each other (Kaplan and Mikes, 2016:13).

6.3. Analysis of control of strategic risks

Analysis of the findings into the control of strategic risks within Navy Command reveals rich insight into the key facets of risk management system design: mindset – culture – framework and function. The findings have provided some insight into three research themes: (1) the role of mindfulness (Linsley and Kewell, 2015); (2) calculative culture (Mikes, 2009); and (3) the framework appropriate to the organisational context (Mikes and Kaplan, 2015). Perhaps, however, the most interesting analysis comes from the role of the risk function (Mikes, 2011) and the tools they provide (Hall et al, 2011). Initially the framework needed some extended agenda time for participants to interactively debate the uncertainties and challenges they believed the organisation faced; then the output of the interactive session needed to be recorded and a plan developed to produce diagnostics on how those risks are being managed. Ownership and responsibilities were defined and a template 'tool' provided but, initially at least, the conversations using that tool were sub-optimal as the various participants had varying perspectives on how to frame the debate – thus underlying assumptions were sometimes not made explicit. The author interceded with 'handrail' risk tool (i.e. not prescriptive) that provided guidance on how to interpret the information; which assisted in some respects to 'better' strategic conversations. Another tool was also provided to help shape the debate – the severity of risk of time schematic; this again helped turn a spotlight onto the timelines for mitigation actions, and thus the brought the time horizon for reaching a target risk position into focus. The provision of these two 'value adding' tools was fairly central to my interactions with senior leadership; which is to be expected from Hall et al (2015:4). The visual template of information already existed but, drawing on my expertise, it was adjusted to be more useful to the executive; similarly, I reconfigured the information presented on risk heat maps so as to be able to additionally include the time dimension. These two findings examples support Hall et al (2015:17) finding that "the ways experts adjust and reconfigure tools is important, rather than just their use of tools per se". My interpretation is that as an "engaged toolmaker" I was able to offer relevant tools that enhanced communicability between the executive – using information that was congruent with their mindset and culture of risk management. Should the toolmaking continue to be found useful it will be interesting to see if the future design of the Navy Command risk management system includes expertise in the facilitation role. With end-to-end sight of the process that facilitator could "coordinate the [organisation's] risk management efforts…more of a synthetic rather than analytic task...a leader, facilitator

and integrator. In this role the CRO serves as a coordinator, more than a manger of risks" (Lee, 2000:27).

In addition to providing direct insight into the influence of the risk function through tool making, analysis of the separate aspects of design of the risk management system (mindset, culture, framework and risk function role) prompted the author to consider the influence of the interplay between these various aspects; influenced as he was by the management control literature on complementarity between systems. Drawing on management control literature, for an effective system to be designed all four aspects needed to be internally consistent (Grabner and Moers, 2013:418; reported in MCS literature view section 3.3.1) but is there a driving aspect which has more influence than the other aspects of system design? The author's interpretation of the findings from this case study is that it was the "tone from the top" – or leadership mindset – that determines the shape and utility of the other aspects of the management system design. Through Navy Command's board members being "leaders on risk" (Linsley and Kewell, 2015:iv) with a preparedness to entertain other perspectives on risk – both quantitative and qualitative – this drives the culture and the frameworks of meetings and tools that support their discussions. Equally, it is suggested, the emerging three distinct roles for the risk function of business, facilitator and internal control (Mikes, 2011) are being piloted as a consequence of the leadership's receptiveness to trialing new and different approaches to risk management. The thesis suggests however that the relationship is not a one-way causal effect of leadership mindset on risk function role, as this chapter has shown there is also an influence exerted on the executive through the risk function developing useful tools for the latter's decision-making (Hall et al, 2015).

Having provided findings from research into management of those risks formally identified as strategic, the chapter now addresses findings on risks to strategy; the nuance between the two labels is that the former – that covered previously in this chapter- is intertwined with the external environment and thus the organisation's overall resilience (Mikes and Kaplan, 2015:40), whereas the latter are concerned with strategy execution and thus managers can largely influence likelihood and/or impact (2015:40).

The findings on case study research into Navy Command's 'strategy execution' risks are detailed in the next section.

6.4. Findings on Risks to Strategy

The findings on the management of risks to strategy are derived from observation and review of documents associated with the Balance of Investment (BoI) process conducted over a six-month period. The BoI was a multi-criteria decision-making process that explicitly evaluates multiple conflicting criteria to assist with identifying potential options for future strategic

courses of action. Having applied rigorous review of the costs and capabilities associated with individual elements (ships, aircraft, submarines, Royal Marines) of the Royal Navy's force, various options were developed for the the navy of 2035 using proprietary software and military judgement. Each option had its own financial and manpower resource profile required over time, and thus presented its own challenges for transitioning from the current to future force organisation.

The debate in the BoI therefore centred on optimising the navy's performance whilst mitigating known threats. In some literature a risk event is referred to as having either a positive (upside risk) or a negative (downside risk) effect; and the navy's dilemma could be construed as optimising their upside risk opportunities while minimising their downside risk threats. This wasn't though the language used by the navy's leadership throughout this research[38], rather they sought to optimise capability performance whilst minimizing known threats all within a given resource envelope. With this in mind, this section provides insight into two of the macro-themes (1) risk management system design, and (2) purpose of risk management – through reporting on the facets of risk management system design used previously:

6.4.1. Risk mindfulness

Findings on mindfulness and 'leading on risk' (Linsley and Kewell, 2015:iv) for those risks to strategy were derived from observation over a six month period of five full-day Balance of Investment (BoI) workshops (with 1* attendees) and two Navy Command Operating Board meetings (3* Chair; 2* membership) with BoI agenda items, as well as informal meetings and conversations throughout the period.

From observation it was apparent that Navy Command's leadership had the self-assurance to devise its own approach to balancing upside and downside risk within its' allocated resource budget, admittedly within the fiscal guidelines provided by MoD head office. From the outset it was recognised that there would never be the perfect solution to address the 'wicked' problem of devising the optimal strategy for delivering the navy required in 2035, but wide debate was encouraged in order to canvas widely the various viewpoints of how best to derive the strategy.

Once underway the format of the BoI was such that it supported a reflective approach; a sequence of full-day meetings held over the winter period allowed mature debate to occur whilst participants were co-located together as well as periods to reflect and

[38] Indeed, while scoping the extent of the research programme with my naval sponsor the possibility of exploring upside risk opportunities was raised; he felt that it wouldn't be helpful to introduce the phrase into the naval lexicon, preferring to address risk as a threat while noting any mitigation plans need to be balanced against optimising opportunities.

'check-back' on understanding before moving to the next debate. Throughout there were consistent observations of respectful behaviour and preparedness to listen to the views put forward by others.

The overriding impression gained during the five days of observation over the winter was of risk discussion becoming ever more central to the debate of optimising the strategy to 2035; with the focus obviously being on optimising the opportunities to enhance the navy, there was due consideration to what that meant for the residual threats and mitigation where resource was not available. As such I assess that the mindfulness displayed during managing risks to strategy met all three goals of nuance needing reflection, understanding of different ways and perspectives, and of risk discussion becoming normalised.

6.4.2. Risk management culture

In terms of "calculative culture" (Power 2007, Mikes 2009) is was apparent that in the latter meetings calculative pragmatism (Power, 2007:120) prevailed; while there needed to be confidence that the data allowed fair comparisons between courses of action, absolute accuracy was not called for. This is not to undermine or sell short the effort required to ensure that the management information was reliable; many hours of quantitative debate was required amongst portfolio management group members in order to validate the data, and agree the message that it depicted, prior to it being presented for use by the Navy Command Operating Board.

Thus the findings have shown that there is a role for both calculative idealists and pragmatists (2007:120) within an organisation; the latter perhaps being able to be more focused on telling the strategic narrative, in the knowledge that the 'quants' have reviewed the data that underpins their argument. By this means the case study provides evidence in support of Mikes (2011:242) claim for the "potential for two calculative cultures to exist side-by-side within one organisation".

6.4.3. Framework

Using the risk management framework (Mikes and Kaplan, 2015) previously for strategic risks (processes, meetings, controls and tools employed by those leading on risk) the following sub-sections use this framework to report findings on control of risks to strategy through research into the strategic BOI.

Process and Meetings

The intent to conduct a BOI was formally announced to Navy Command Operating Board and Portfolio Management Group members in September, building on the BOI

carried out in the 2015/16 to balance policy, costs, capability and deliverability risks across the maritime portfolio. The process used as inputs the latest Navy Command Capability Audit risks and baseline financial profiles for the current Annual Budget Cycle and sought to produce an output that informs the following year's Annual Business Cycle Submission and Command Plan. In doing so it aimed to "provide Defence with an articulation of our vision for the future, our financial base [and] our views on prioritisation" out to 2035.

In outline the format of the BOI comprised the following three stages; as depicted in Figure 6-3.

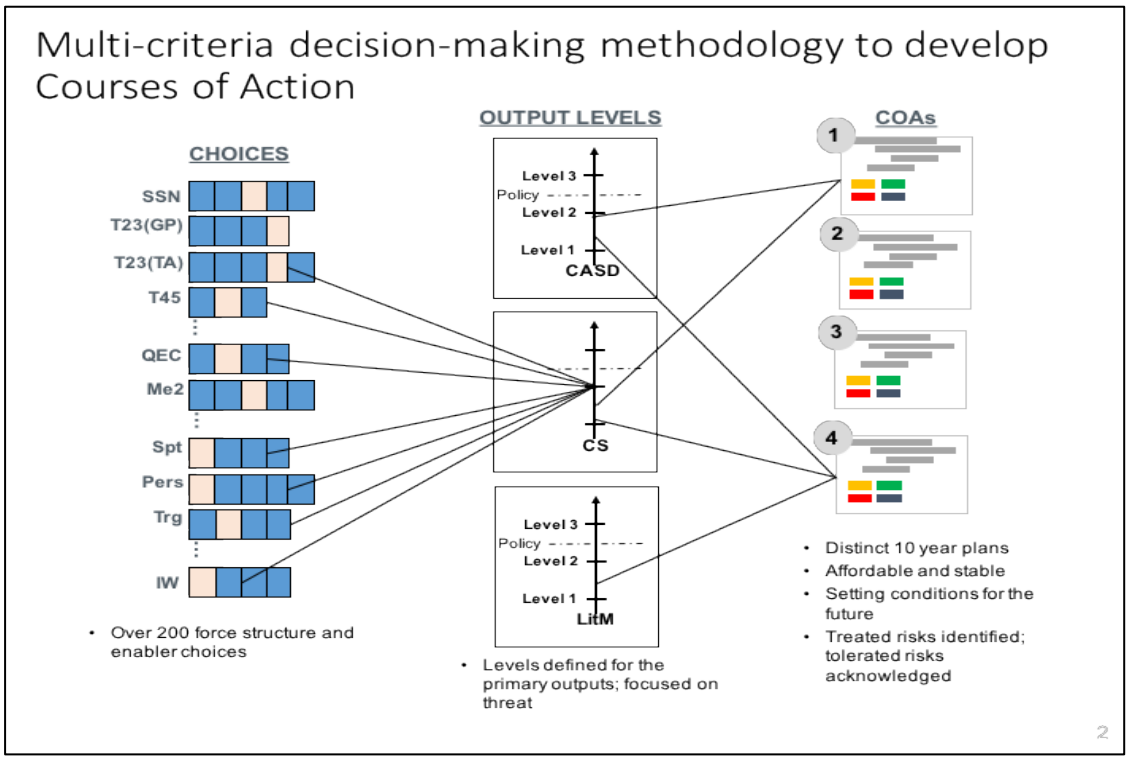

Figure 6-3: Multi-criteria decision-making methodology to develop courses of action (from internal document)

Firstly, in November, the chair and members of the Portfolio Management Group conducted a facilitated two-day workshop in order to prioritise the balance of investment choices to be used in the forthcoming multi-criteria decision conference on how the navy's portfolio of resource delivers optimal capability for Defence. Created in several previous workshops a number of 'towers' of capability choices were presented for each 1* member; towers were normalised for the contribution they delivered to naval 'output' while being interrogated for cost, benefit and risk. The towers were then assessed for bronze, silver and gold contributions they could make towards nuclear deterrence and carrier strike capability; littoral manoeuvre was also considered. Following the staff's assessment, the external facilitators developed a set of candidate courses of action for subsequent consideration by the staff.

Throughout the workshop participants referred to creating a 'narrative' of the investment decisions. A post workshop follow-up conversation revealed that of the XX[39] risks in the Capability Audit approximately XX[40] were being addressed through the Balance of Investment, with the remainder being for the Capability area to take forward. It was observed that as the BOI recommendations are taken forward it will be important that the boards responsible for governance of those capabilities (in addition to parallel safety and security risks) endorse what is, and what isn't, being addressed through the BOI into the next series of Annual Budget Cycle submissions and Command Plans.

Following the workshop, two threat reduction meetings were held with Portfolio Management Group members in December using the BOI risk tool. The aim was to "review the risks that each (bronze - 1, silver - 2, gold - 3) level is carrying and to agree which risks are being treated and which are being tolerated and what the overall effect is on the level's ability to deliver nuclear deterrence from the sea through time.". These sessions allowed a detailed [interactive] discussion on the impact of the risks given the bronze, silver, gold level investment decisions; with strong challenging and debate being facilitated by the [diagnostic] risk management tool – and the decisions being recorded therein as a record for the future review and audit trail.

Navy Command Operating Board members received, as a collective, a progress check in February en-route to March's decision conference; one-to-one sessions were also programmed ahead of March's conference. Broad courses of action were presented, depicted by the right-hand column in Figure 3 above, each of which provided "a ten-year plan with a vision of the future that can inform discussions with the Centre [Ministry of Defence]". The progress check confirmed "now we have a good evidence base…to illustrate the logic of where investment/disinvestment can take place".

The BOI decision conference was held over two days in late March; the aim was to agree "the direction in which the RN is going…[and]... to provide credible advice to the Centre". The conference opened with an expression of confidence that there was "enough evidence and experience in the room to make some decisions" (a pragmatic calculative stance) and exhorted participants to "have a good feel for what Maritime Strategy 2035 looks like" – the latter being the referential object against which decisions would be assessed (an observation which relates to relational risk theory, Boholm and Corvellec, 2011;186). Thereafter a facilitated interactive agenda enabled a shared understanding of the financial context and detailed discussion on the implications of the

[39] Redacted due to classification.

[40] Redacted due to classification.

three-broad course of action to transition to the navy of 2035; using, amongst others, the visualisation tool illustrated in Figure 5 (and discussed in more detail in tool section 7.3.3.3) below. In concluding the meeting members were deemed to have had "really good discussion and brave thoughts"; the latter I interpret as there being some fairly unpalatable choices being considered – in order to deliver the main aspects of the strategy. The implication of this is that the risk management inherent in the delivery of Maritime Strategy 2035 is now entering the realm of external – including political – influences, that touches on reputational risk too.

The follow–on timeline was to seek Navy Board endorsement of the output recommendations in May, ahead of the recommendations forming the 'golden thread' through the navy's autumn Annual Business Cycle resource submission; which is covered in more detail next in section 6.3.3.

The findings in this section have provided insight into two aspects of risk purpose – (1) support to sense-making (Weick, 1995) and (2) risk object identification (Boholm and Corvellec, 2011), as well as bringing to life the interplay between the meetings and process elements of the framework (Mikes and Kaplan, 2015); the latter which also provides evidence for the diagnostic – interactive control complementarity concept (Grabner and Moers, 2013) of chapter 6. Firstly, sense-making is illustrated by the BOI developing 'Courses of Action' which are packages of capability that are consistent and coherent with delivering a capability required by Defence; furthermore, a narrative is developed to explain each course, such that a conversation can be had with external stakeholders to explain what Navy Command is intending to deliver. Secondly, the object at risk was clearly articulated in the BOI as the maritime strategy to 2035; by this means there was a referential object to judge the impact of each risk against, and thus judgements could be made on relative priorities. Thirdly the BOI case study provides a rich insight into how the various components of a risk framework interface through different participants and information being provided. Of note the BOI did not take place in a vacuum, thus the importance of the evidence that those risk not addressed by the BOI needed to be identified and tracked through to other decision-making processes; the detail of which is covered in the next section.

Linkages to other Controls

Figure 6-4 below shows the linkages between the boundary and diagnostic 'levers' controlling resource allocation to meet the organisation's objectives, as extant in Navy Command's Operating Model. The extant arrangements are augmented by the BOI process, which performed the role of a hybrid strategy/planning – financial process –

seeking to inform the next generation of Command Plans and Annual Business Cycle resource submissions on a journey towards Maritime Strategy 2035. Going forward the leadership are reviewing whether the BOI should be subsumed in Navy Command's core business processes, either as an annual 'light touch' event, or a full–scale BOI following/preceding a Cabinet Office-led strategic Defence and security review (SDSR), or a combination of the two approaches. In this way the full span of Navy Command's portfolio could be managed and aligned with policy objectives, capability requirements (all lines of development not just equipment) and financial resource availability.

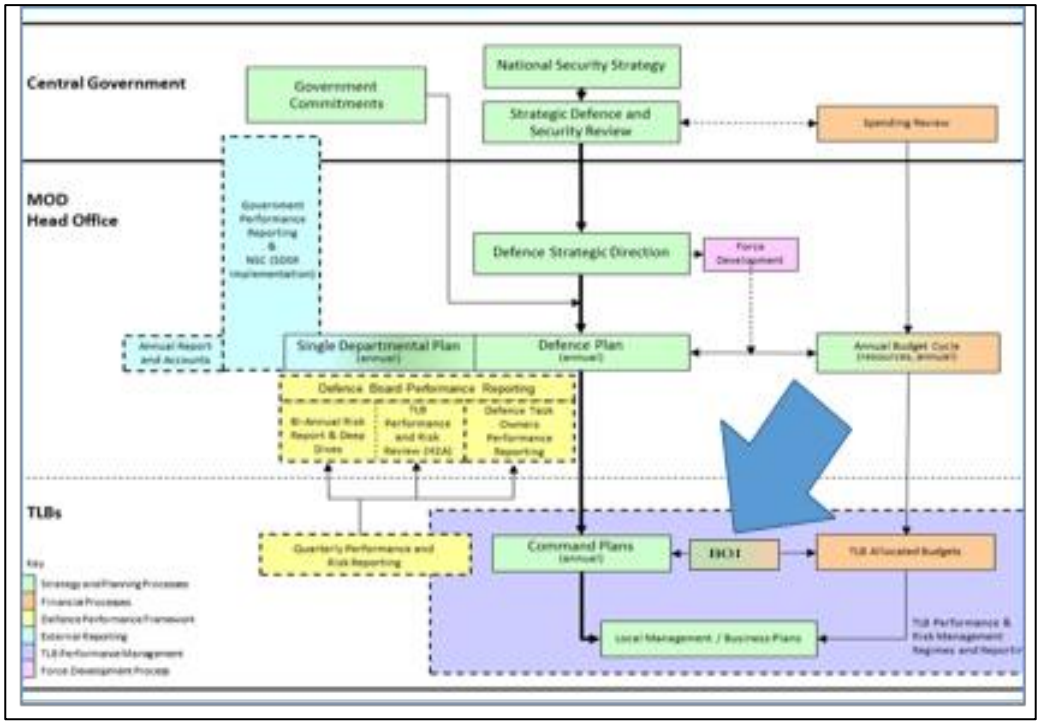

Figure 6-4:Role of the Balance of Investment in Navy Command Planning (from internal document)

The findings provide evidence of the role of complementarity of risk aspects, and the requirement to be internally consistent with other management control processes.

Risk 'visualisation' tool

A risk management software package was used to support the balance of investment decisions, that depicted how risks in the capability area were being addressed over time as a consequence of the investment decisions; one output is shown in Figure 5 below. The artefacts created using this tool provided stimuli that enabled attendees to debate the issues relating to the aspects most valued, without being swamped by the underlying data.

Though the risks were not explicitly included in the Navy Command Operating Board's March conference it is understood that the capability risks implications from the

decisions taken were factored into subsequent business planning (through inclusion in the assumptions underpinning the Command Plan, ABC submission and Capability Audits) and are implicit in the 'envisionment' narrative for the navy going forward under Maritime Strategy 2035.

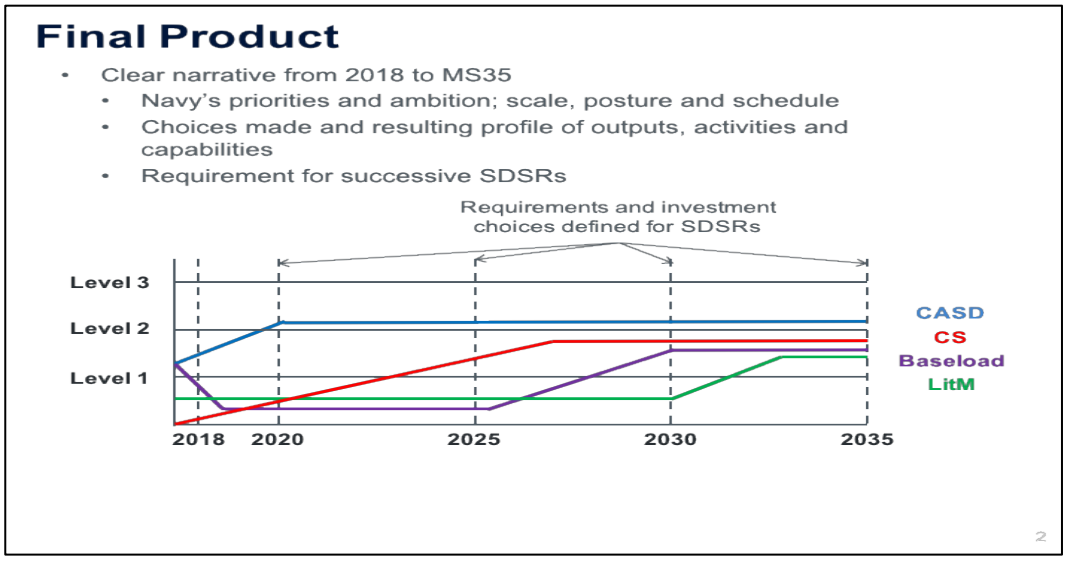

Figure 6-5: Visualisation to support narrative for Maritime Strategy 2035 (from internal document)

The findings on the risk tools used in the control of risks to strategy, reaffirm the importance of devising appropriate tools for use by the executive in order to develop and maintain influence of the risk function; the findings on which are reported next.

6.4.4. Risk management Function

The three senior leaders overseeing the risk management function – Second Sea Lord, Finance Director and Chief of Staff (HQ) – were leading the BOI and thus could be described as filling the business partner role of Hall (2015:16). The facilitator role was fulfilled by the overall facilitation team for the BOI, rather than any of the three risk subject matter experts on the staff. One of the team focused on facilitating the discussions, while the other's primary role was to coral and present the supporting data. The internal audit control role will be important as the BOI is taken forward into business planning, to ensure there is a clear audit trail for the assumptions and decisions made during BOI meetings being subsumed into associated risk planning.

The findings have shown that two different risk roles were utilised in the BOI case study and identified that the third role – that of internal audit/control – will be important in ensuring accuracy as decisions are taken forward.

6.5. Analysis of managing risks to strategy

The case study of the Balance of Investment conducted over 6 months has provided insight into the system design and purpose of controlling risk to the strategy.

In terms of risk management system design, the findings have shown that success was contingent on a combination of: appropriate roles of the risk function and culture in managing strategic risks using a suitable framework for engagement on risk work – enacted by a 'mindful' leadership. A team of two (facilitator and data manager) facilitated risk owner discussions in a number of fora using a credible risk management tool; these included gaining buy-in through a formal series of workshop and interviews, augmented by 'informal' follow up sessions to understand emerging issues (much in the same vein as the case studies reported by Mikes, 2011). Where perhaps this case study differs most from previous reporting is the presence of both risk business partner and facilitator (Mikes, 2011), with both needing to be present in order to achieve successful management of risks to the strategy; where success is measured by linking risks to resource allocation in subsequent business processes.

The findings also provided insight into the purpose of risk management, namely how an organisation developed sense-making (Weick 1995), and how it employed a "object at risk" (Boholm and Corvellec, 2011) approach to corral the associated risks and then assess their impact against something of value. What though of the other two purposes of risk management identified in the literature, namely demonstrating auditability and the moral obligation to manage risk? These are explicitly addressed through the findings on management of operational reported in the next section, though there was a sense of a 'moral code' to do the best for the navy in the long term that prevailed through the BOI insights. Additionally, the BOI also provided insight into what it was that Navy Command was controlling through its use of risk management, namely its' organisation through provision of leadership in the delivery of strategy; thereby giving a view on Power's (2004, 2007) question on whether organisations are controlling everything or nothing and merely fulfilling a requirement to be auditable.

6.6. Findings on the control of operational risks

The empirical evidence provided in this section is drawn from observation of the senior leadership meetings, review of internal risk-related documents and semi structured interviews with stakeholders from various levels within the organisation involved in portfolio risk management.

The findings in this section cover the management of the pre-event controls for operational risks noting that, even if the before-the-event control plan is fully up-to-date and well thought through, there remains a likelihood that some of those risks will materialise. When

an event probability is deemed to be 'certain' it is no longer a risk; in Navy Command these are termed Issues. Power (2009) will be supported in his suggestions of "illusion" and management of "nothing" if the post event contingency response plans for issue management are not in place to mitigate a reduction in the impact of the event's occurrence. Risk management reported in this section however constrains itself to pre-event control of risks – the bottom left of Figure 10; acknowledging that, whilst out of scope for this research, in order to be confident that risk management of "everything" is in place adequate consideration must also be given to the post event contingency response plans.

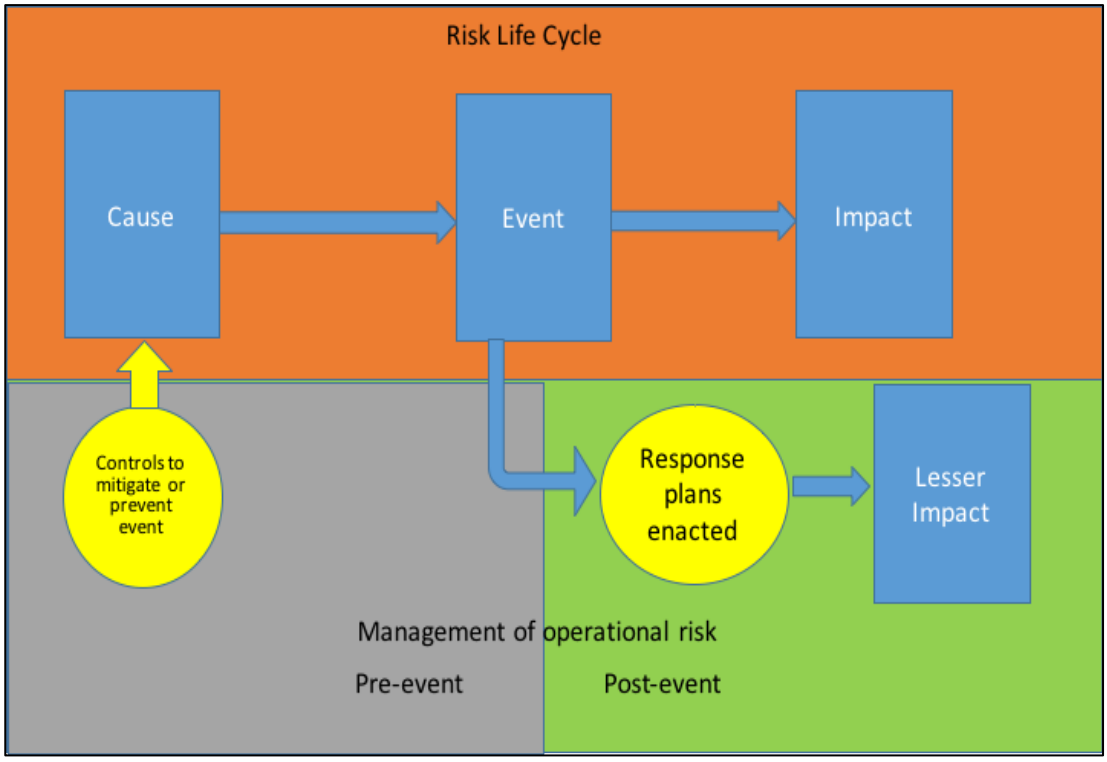

Figure 6-6: Management of Operational Risk (from the author)

The findings are reported under the facets of risk management system design used previously.

6.6.1. Risk 'mindfulness'

The evidence on mindfulness is drawn in the main from observations of the Portfolio Management Group meetings.

The new regime of the Portfolio Management Group, beset with a historical reputation as a "talking shop", was insistent that it would 'add value' or disestablish itself; but how should it be configured to achieve that? Membership was slimmed down and, for the first time since Lord Levene's report, a definition of the portfolio provided and scope defined. Thereafter, and noting Defence Internal Audit's view on Navy Command's variable extent of risk maturity, a series of initiatives were implemented to create a

management system that supported the organisational needs. The group's membership, it was observed, included a fair share of nay-sayers, but the leadership stayed true to the need for appropriate risk management in order to manage the portfolio; in doing so it sought to implement a nuanced system that adhered to the selected provider's (M_o_R) principles yet tailored to their situation. Without this leadership mindset of needing to implement of workable and useful risk management system, the thesis offers that none of the other elements of culture, framework or function would have made a coherent contribution.

The findings reported below in section 6.6.3. reveal evidence of an organisation that is sufficiently self-assured, in 2016/17, to be able to create its' own approach to risk management. Where previously Navy Command had a risk register containing many risks, but no effective way of managing them, section 6.6.3 shows an organisation prepared to try to devise a risk management system that fits its needs. Observation of the Portfolio Management workshops revealed participants who displayed understanding and acceptance of the differing views of others, but a willingness to enter a meaningful debate on how to prioritise the risks requiring attention; a willingness which may have been seeded by their reflection on their participation in the recent BoI workshops. Attendees of the meeting appeared very at ease discussing a variety of risks and were increasingly adept at linking them to the object of value (in this case the navy's outputs of Develop, Deliver, Generate and Operate the Force).

In summary, it would appear to me that the leadership of operational risks has shown mindfulness by its self-assurance to create its own approach to risk management that best meets the needs of the Royal Navy; that reflects on the nuances associated with risk; that understands there are a multitude of perspectives on how to best manage risk; but which is increasingly prepared, and able, to discuss risk as part of routine business.

6.6.2. Risk Culture

At the level of management of operational risks to the portfolio, the impression from observations is one of a tendency towards "quantitative pragmatists" rather than enthusiast (Mikes, 2009). It is suggested that this is due to a necessity to be able to compare the preponderance of risks which have been initiated as bottom up data by staff officers. At the staff level the way to get concerns acknowledged is to enter them onto "the system" (ARM risk register) then cite them as evidence in the business case for additional resource; this leads to an unfortunate consequence of the rise of the mentality of "box ticking to chase scarce resource", often at the expense of actively pursuing alternative mitigation strategies. This then can often be perpetuated in the compressed timelines and reporting opportunities, except in those cases where line

management routinely makes time for informal exploratory conversations. Thus when the portfolio management group is faced with a range of risk data created by a number of different authors, each with their own interpretation of underlying assumption, it is hard to have a common standard that allows comparison across cases. Faced with the challenge of "comparing apples with oranges" the risk conversation appears to be less about 'the numbers' and more focused on what can and should be done – a pragmatic approach.

The author's understanding is that at the operational level of risk management the organisation needs to blend the two cultures of "calculative idealists and pragmatists" (Power, 2007:120) if it is to create effective management information that will be useful to inform the risk agenda discussions. With much of the input coming from staff-level entry into a risk database which requires numbers that are to a large extent a subjective view, there is a requirement to both ensure that these entries are as accurate as possible whilst also creating a holistic view whereby more 'art' can be applied to make sense of the data. The findings thus reveal insight into the challenge of blending art and science, as was neatly illustrated in the literature review of Verhezen and Dequae (2017:280) (Figure 3-3 in Chapter 3); with the compliance necessity of accurate operational facts being blended into the leadership's art of strategic delivery.

6.6.3. Framework

Findings on the framework used to control operational risks within Navy Command are provided using Mikes (2015) framework.

Process and meetings

Case study observations revealed how staff throughout the organisation were empowered to raise risks they identify on the Risk Register, which were then assessed by line management and, where appropriate, reviewed in a series of formal governance meetings.

Whilst identification and assessment of risk is reasonably well established, prioritisation across sub-portfolios – to deliver a portfolio approach to managing risks to the portfolio – was not mature during the early period of the case study data collection. Subsequently however the external facilitators who assisted with the strategy work (reported in section 6.3 above) were contracted to perform a similar role at the portfolio's operational level, with the aim of delivering a prioritisation process to inform the Annual Business Cycle submission for 2018.

On 2 Nov the Portfolio Management Group (PMG) sat in Risk Committee mode, with Chief of Staff (HQ) as Chair. A whole day was allocated to understand then prioritise the

130 risks held by 2*/1* officers that were deemed to have either severe or critical impacts on the organisation's outputs. In preparing for the session 166 risks originally assessed as being in scope were reviewed and the number culled to 130. The first half of the day was then spent breaking them out into one of the four functions performed by Navy Command: Develop, Deliver, Generate or Operate the Royal Navy. Each PMG member briefed their risk for which function the risk event would occur in, then assessed them as being in one of the four quadrants show here in Table 6-1:

	Role	
	SRO[41]	**PMG**
Action Required	Manage	Provide oversight
	Tolerate (watch)	Tolerate (watch)

Table 6-1: assessment options for severe and critical risk held at 2*/1* level in Navy Command (from Catalyse facilitators)

The results for the PMG members' assessments are shown in Table 6-2:

Develop		**Deliver**		**Generate**		**Operate**	
6	5	20	1	24	18	18	13
6	3	4	3	2	4	3	0

Table 6-2: Assessment of Severe and Critical risks held in Navy Command

As a consequence, the PMG had 37 (comprising the risks in the top right box of each Navy Command output function; 5+1+18+13) severe and critical risks held at 2*/1* level where the owners felt the PMG oversight would be beneficial; the afternoon session then considered the relative priorities of those 37 risks and assigned each one into a high-medium-low category.

Adopting an Innovation Action Research (Kaplan, 1998) approach the author proposed a methodology that might assist in decision making on relative priorities for assigning resource to mitigate those 37 risks. Using the four categories of risk impact detailed in the MOD Risk Policy guidance (MOD 2017) of Finance, Capability, Reputation and HS&E (Health, Safety and Environment) a champion who was a member of the Risk Committee was nominated for each category. The proposal was that the champions should agree between themselves their appetite for taking more risk in an impact category when there was a requirement to mitigate another category (for example, take

[41] Senior Responsible Officer for that programme or project.

more risk in reputation to mitigate risk impacting on finance). Thus a matrix such as the one in Table 6-3 could be produced for Navy Command.

		In order to mitigate impact on…				
	Impact category	**Finance**	**Reputation**	**Capability**	**Safety**	**Environ**
Take risk on…	**Finance**		Cautious	Cautious	Legislation	Cautious
	Reputation	Adverse		Adverse	Legislation	Adverse
	Capability	Open	Open		Legislation	Open
	Safety	Legislation	Legislation	Legislation		Legislation
	Environment	Adverse	Adverse	Adverse	Legislation	

Table 6-3: Risk Appetite statements for willingness to 'trade' a risk category in order to mitigate other impacts (from the author having developed Quail, 2012)

Thus in comparing the propensity to trade an impact category to mitigate another, a pair-wise comparison could be shown thus:

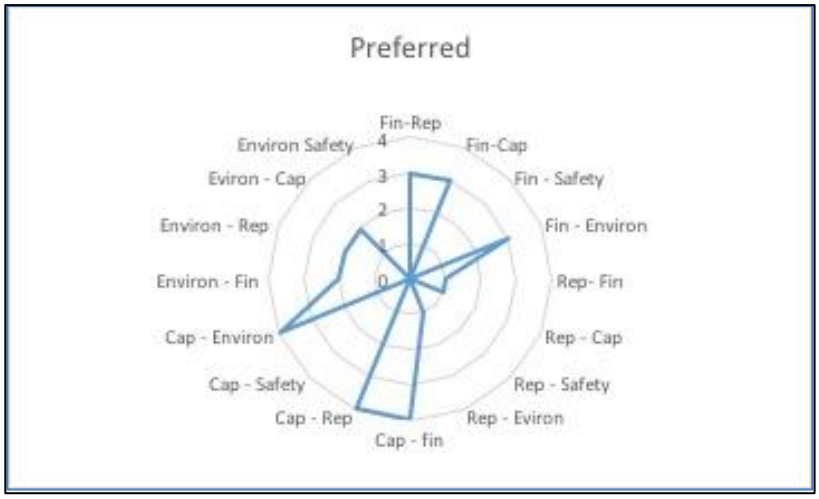

Table 6-4: Pictorial representation of risk appetite statements for willingness to 'trade' a risk category in order to mitigate other impacts (from the author having developed Quail, 2012)

In interpreting Table 6-4 it should be taken that the proximity of the dark line to the circumference of the circle correlates with an increased appetite to trade the first named impact category to resolve concerns over the second element of the pairing; thus the greatest appetite is to trade Capability followed closely by Finance, then Environment. The figure also shows that the organisation is averse to trading on Reputation; Safety is omitted as a trade option as this is governed by legislation.

In December 2017 a proposal was put to chair of the Risk Committee to pilot a methodology to use the risk appetite approach to make decisions on business cases put forward by risk owners for more resource.

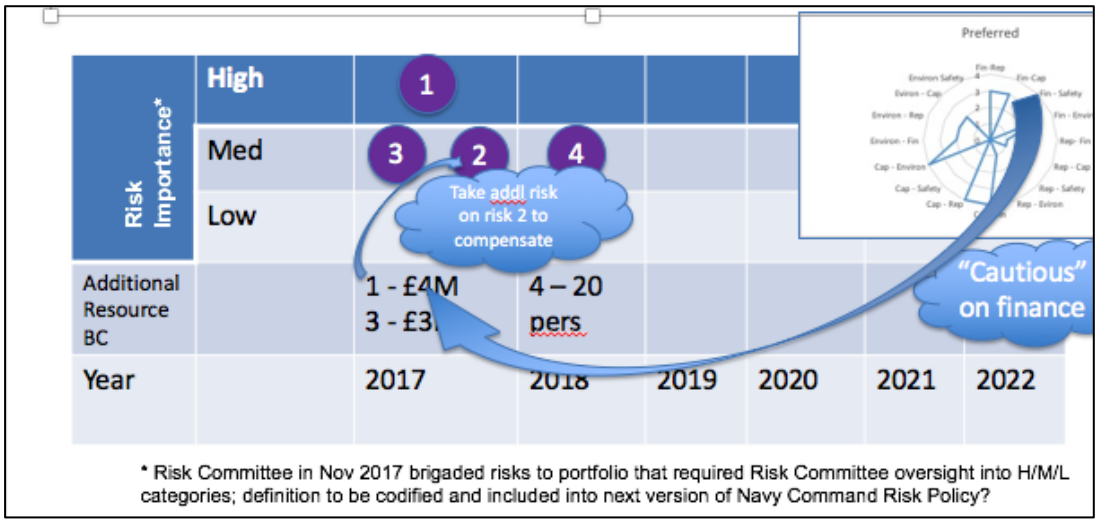

Figure 6-7: Proposed methodology to manage risk using a risk appetite statement (source: the author)

Figure 6-7 illustrates the proposed methodology for prioritising resource allocation to mitigate risks. In this example four risks are within scope; risk 1 is deemed of high importance and the other three of medium importance (based on output of previous workshop. The owner of risk 1 is seeking more financial resource in order to mitigate the risk impacting on capability. While the risk impact champions have an appetite to trade financial risk to mitigate capability, in this instance they are reluctant to introduce additional financial risk therefore agree to accept more exposure on risk 2 (by accepting that the target risk position will be delayed by a year and thus not be achieved until 2022) and reallocate resource to risk 1 to reduce yet further the acceptable target risk assessment in 2019; as represented here in Figure 6-8.

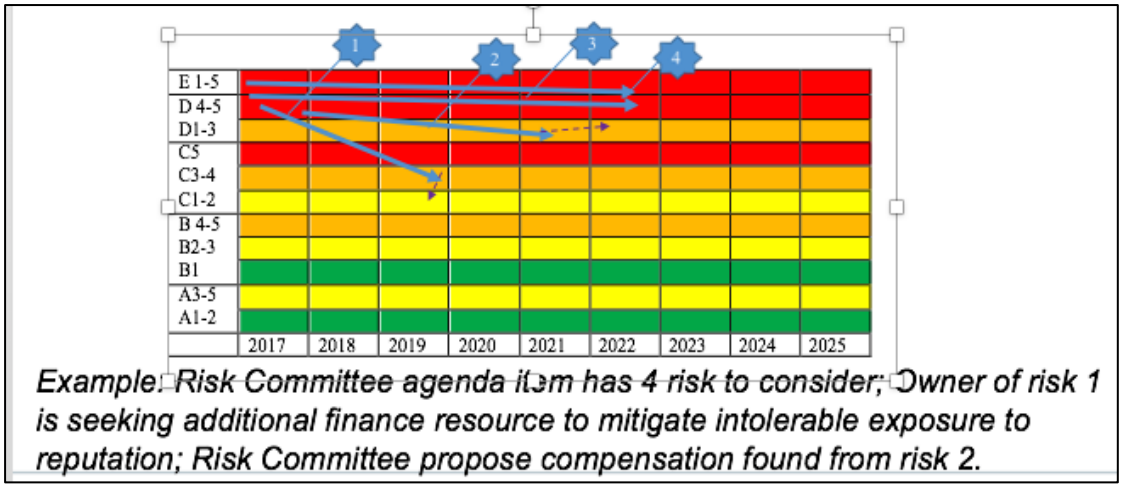

Figure 6-8: Illustration of trading resource using risk appetite (from the author)

The findings show that the proposed new tool and process of risk trade across years methodology was of interest to the chair of the Risk Committee, and the senior leaders

who were to be champions of the impact categories were keen to pilot the approach. With there being only a finite amount of resource available for mitigation towards acceptable target risk positions (the 'appetite' for risk), the one variable not yet formally considered to date was the use of time when assessing if the relative priorities for risk mitigation strategies. Due to the case study reaching its' agreed period for access to data, this method was never enacted however the thesis includes these dialogues and examples of the leadership's intent as evidence of the role of tool making and pragmatic processes in an effective risk management system design. The findings also reveal insight into the leadership's mindset and their preparedness to trial new ways of managing risk; a preparedness that would shape the other aspects of risk system design had time permitted, thus lending support to mindfulness as a contingent variable for the system as a whole.

Linkages to other controls

The links to the annual processes of objective setting (The Command Plan – reported previously in section 5.2.3), capability risk assessment (Capability Audit) and resource bidding (Annual Budget Cycle – reported in section 5.2.3), along with the quarterly process of assessing performance and risk (QPRR – reported in section 5.2.4) are well established. Review of the Command Plan and ABC documents revealed that while some operational risks were detailed that affected outputs, the overall narrative of the risk to outputs seemed to be missing. Conversations with portfolio office staff revealed that it is intended to 'bake in' risk more fully to those documents for 2018 and beyond.

The findings show therefore, that while the rigorous linkage to other controls appears to be still evolving the organisation is aware of the need for complementarity between the various control systems in use and are striving to make progress in this respect.

Tools

A number of tools and data sources were evidenced previously in chapter 5, namely the portfolio definition documents (section 5.2.3), Quarterly Performance and Risk Return template (section 5.2.3), Senior Board Information Pack (section 5.2.3), ARM data base (section 5.2.3) and the sub-portfolio local risk summaries used in some instances (section 5.2.4).

From observation any one of the above tools could be used to support the management of a risk or indeed a number of risks, but where they fell short is in the facilitation of pan-portfolio comparisons of worth. That is to say that while the suite of portfolio definition documents provides clear statements on future navy outcomes and the major constituent programmes, and the sunray performance diagram tracks progress of milestones, the associated risk register is not yet aligned.

Similarly, in 2017, there was misalignment between the main tools used to manage performance and risk against the broader range of outputs required of the Royal Navy by the MoD. Sub-portfolio owners recorded their objectives in the Command Plan, but risks to their achievement were not made explicit; where risks were recorded in the Command Plan these were not drawn through consistently into the quarterly report that monitored progress.

Finally, in terms of portfolio risk management, while progress was made during the case study period in improving the quality of the information held on the pan-portfolio risk register there was a low level of confidence throughout the organisation for the accuracy and timeliness of the data held in the ARM register. As the case study period concluded the latest attempt to address this shortfall was a focus on the top (critical) risks recorded in ARM as referenced in section 6.5.3 above; the aspiration being twofold: to better understand the truly critical risks to the portfolio and provide, through their discussions, exemplars on how the remaining risks should be articulated and managed.

The findings in this section reveal that it would appear there is an opportunity to enhance the contribution made by the various diagnostic tools in use within Navy Command through closer alignment and cross-referencing of the data contained within each one. Navy Command is striving for internal consistency between the relevant controls (Grabner and Moers, 2013) through moving towards programme owners recording the risks to the milestones of their programme delivery; for sub-portfolio owners to note the risks to their business areas; and for both to monitor them over the year using appropriate tools and processes to track response plans. The key tools to align are: Command Plan (section 5.2.2); portfolio definition documents (section 5.2.3); Quarterly Performance and Risk Return (section 5.2.3); Senior Board Information Pack (section 5.2.3); and ARM data base (section 6.2.3).

6.6.4. Risk Management Function

In the management of operational portfolio risk, Mikes' (2015:39) two risk function roles were observed with opportunity identified for the third role of facilitator –performed by an external contractor in this case study - to add influence.

Of the three senior leaders with formal responsibilities and accountabilities for risk, articulated in the previous section 6.3.4, it was the Chief of Staff for the Head Quarters (COSHQ) who mainly lead on the day-to-day management of portfolio operational risk in his role as Portfolio Director; supported by senior portfolio office staff who were also members of the Navy Command Operating Board and Portfolio Management Group. Theirs was very much a "business lens" for viewing risk, as the organisation grappled with how to best gain a pan-portfolio view of optimal resource allocation. They were

supported in turn by two members of the portfolio office with a remit to oversee the risk data and consider how best to present it to portfolio members.

In terms of independent overseer role, with a focus on compliance and internal controls, this matured as the case study progressed. Throughout the period there was a well-established oversight regime implemented by the RN Audit Committee chaired by a Non-Executive member of the Navy Board; with Navy Command's Portfolio Office reporting to the committee on risk. Initially represented at staff-level, as the case study progressed a portfolio office/Portfolio Management Group member took on his responsibility, thereby reinforcing the message of the 'importance' of risk in managing an effective portfolio.

An emerging oversight role towards the end of the case study was that of the Portfolio's Centre of Excellence (COE) Staff. Advised by the risk "subject matter expert" on the COE staff, a rolling programme of internal audit of all the business processes within each sub-portfolio over a 12-month period was established. While not able to comment on the veracity or accuracy of the risk content this programme provided assurance on each area's adherence to protocols and processes and thereby gain an impression of the maturity of the governance.

The notable difference between the approaches to managing risks to the strategy, detailed above in section 6.3, and of those operational risks to the portfolio was the absence of a facilitator for the latter. While the debate on the strategy had a facilitator to shape the debate to address the agenda, and follow-up with informal one-to-ones where required, the portfolio approach relied on written information being provided as meeting papers and the agenda led by the chair (albeit sometimes with guest speakers providing an introduction). With the agenda invariably being packed the risk element was often compressed, supported by voluminous papers, and the diaries of attendees full of many other items competing for their attention; the quality of the debate was not all it could have been at those levels of the organisation.

The findings have shown that there is an opportunity to optimise the management of operational portfolio risk by drawing on the lessons from the approach used for managing risks to strategy. Observations of the current approach to managing operational risk revealed two risk function roles: the business role of the senior portfolio staff, plus an 'overseer' compliance role of the data manager. The overall contribution from management of risk could however be enhanced through augmentation by an in-house facilitator, whose remit would be to ensure the risk agenda is communicated across the organisation at the appropriate stage of the business cycle and to facilitate a shared understanding to inform decision makers. Complementing these risk function

roles would be the internal audit team, providing assurance that appropriate governance is in place and thereby ensuring the management system is underpinned by sufficient rigour.

6.7. Analysis of the control of operational risks

The above findings provided insight into the challenges associated with attempting to control operational risks. The large numbers of operational risks held and reported diagnostically meant that mangers struggled to give interactive attention to the key risks (Widner, 2007). In the autumn of 2017, this was mitigated through the use of an external contractor in 'risk facilitation' mode (Mikes, 2011; Kaplan and Mikes, 2016)– mirroring the approach used successfully in their control of risks to strategy; the contract was a one off facilitation of a work shop to identify the key operational risks to the portfolio. The author proposed a methodology to assist in prioritising the management of those risks, but the scheduled termination of case study access precluded this being piloted; the 'assess' and 'act' stages of the risk management cycle have yet to be completed. Therefore, in going forward Navy Command could consider a full-time provision of a facilitation role in order to enhance the support to these two essential stages, and thereby contribute to a considered set of decisions on optimal control of the key operational risks.

In order though for facilitation to be effective, the findings on control of operational risk showed that appropriate processes needed to be in place, and tools adapted (Hall et al, 2015) to meet the needs of the organisation; in this case a common framework that allowed comparisons between risks to be made, and decisions taken on the relative priority for resource. A methodology for comparison of risks using a common set of impact statements in a risk appetite was proposed, and a tool developed that represented the resource 'ask' for each risk over time; as these were perceived as the missing enablers to permit resource-informed risk management decisions. The case study cannot provide definitive evidence of how "toolmaking" (Hall et al, 2015) has influenced the role of the risk function in the organisation; it has, however, provided insight into the business executives' preparedness of mindset to pilot new approaches proposed by those with risk subject matter expertise, in order to address the challenges, they are facing.

6.8. Summary of analysis on control of risk

Central to an organisation's success is the management of uncertainty and the coordination of resources that is consistent with the vision and the strategy; decision-making and risk identification are key precursors for success (March and Simon 1958). This chapter has provided insight into how Navy Command's leadership has adopted a "mindful" approach

(Linsley and Kewell, 2015) to leading on risk, which influenced a pragmatic calculative culture through a framework of processes, meetings, controls and tools.

Analysis of the findings on strategic risks (reported in section 6.2) provided some insight into three research themes: (1) the role of mindfulness (Linsley and Kewell, 2015); (2) calculative culture (Mikes, 2009); and (3) the framework appropriate to the organisational context (Mikes and Kaplan, 2015). Perhaps, however, the most revealing analysis was on the role of the risk function (Mikes, 2011) and the tools they provide (Hall et al, 2011); this revealed that a risk function facilitator (Mikes, 2011; Kaplan and Mikes, 2016) not only helped Navy Board members identify their strategic risks, but also as an engaged tool maker (Hall et al, 2015) facilitated better discussions between risk owners and those responsible for response plan actions.

Analysis of findings on risk to strategy (reported in section 6.4), in terms of risk management system design, has shown that success was contingent on a combination of: appropriate roles of the risk function (Kaplan and Mikes, 2016:13); culture in managing risks (Mikes, 2009:20) with evidence of two cultures existing side-by-side (Mikes, 2011:242); and use a suitable framework for engagement on risk work (Mikes and Kaplan, 2015:39-40) – enacted by a "mindful" leadership (Linsley and Kewell, 2015). It is the contention of this thesis that the risk system design element of leadership mindfulness is a leading contingent variable that determines how the other facets of system design make their contribution.

The findings on risk to strategy also revealed insight into the purpose of risk management for Navy Command namely risk identification (Boholm and Corvellec, 2011:186): sense – making (Weick, 1995:57); and fulfilled moral obligations (Verhezen, 2010:189) in addition to the need to be demonstrably auditable (Power, 2007:175).

Findings on the control of operational risks revealed the many challenges associated with making resource-informed decisions, not least of which again was appropriate tools (Hall et al, 2015). In this study Navy Command was still refining its approach to prioritising resources to mitigate operational risks. With having shown interest in developing a methodology involving operationalising a risk appetite through conducting as a pilot study, this development was curtailed due to programmed termination of case study access.

A summary of the key findings presented in this chapter and their relationship to extant literature is summarised below in Table 6-5.

In concluding this chapter on the control of strategic and operational the thesis naturally leads into answering how Navy Command provides assurance of the approach to risk management. The next chapter addresses research question 3: How is risk management assured within Navy Command? In doing so the thesis provides insight into the challenge

and debate between senior leadership which enhances their understanding of the rigour in the underpinning process; and assists in forming the ‘narrative of risk’ while avoiding imprisonment by internal control (Power, 2004:50).

Risk management theme	Literature Review Section	Gap in literature knowledge	Findings section	Contribution from this thesis
Purpose				
Risk Identification	3.4.1	Boholm and Corvellec (2011:186) *risk definitions are situated expressions of individual and collective understanding of hazards to objects of value.*	6.3.3	Case study insight from managing risks to strategy
Sense-making	3.4.2	Weick (1995:57) *Sense-making, as a perspective, is about "plausibility, pragmatics, coherence, reasonableness, creation and invention"*	6.3.3	Case study insight into an organisation's sense-making with incomplete information from managing risks to strategy
Moral obligation	3.4.3	Verhezen (2010:189). Concept of an organisation's *governance of risk laying on a continuum of moral responsibility and legal compliance*	6.4	Some initial case study insight from managing risks to strategy
Auditability	3.4.4	Power (1996, 2003a, 2003b, 2004a, 2004b, 2005, 2007) *the need for auditability and the influence on risk management.*	6.4	Some initial case study insight from managing risks to strategy
System Design				
Framework	3.5.2	Mikes and Kaplan (2015:39-40) *elements of a framework 'mix' and types of risks definitions.*	6.1.3 6.3.3 6.5.3	Empiric case study examples

Risk management theme	Literature Review Section	Gap in literature knowledge	Findings section	Contribution from this thesis
Framework	3.5.2	Verhezen and Dequae (2017:280): the *interplay between risk types, the role of the risk function and the prevailing mindset of 'compliance' versus 'artfulness'*	6.1.3 6.3.3 6.5.3	Empiric case study examples
Tools	3.5.3	Hall et al (2015:4) *central role of tools for risk function interaction with decision makers; 'engaged toolmakers' that adjust and reconfigure tools to meet the needs of the executive.*	6.1.3 6.3.3 6.5.3	Empiric evidence from two examples of tool making
Risk Function role	3.5.5	Kaplan and Mikes (2016:13) *different roles of overseer, business partner and independent facilitator.* Hall et al (2015:18) *gaining influence with decision makers through tool making and interpretation.* Mikes et al (2013:74) *four competencies of an influential risk function*.	6.1.4 6.4 6.5.4	Empiric evidence of three roles in one organisation Empiric evidence from two examples of tool making Case study insight

Risk management theme	Literature Review Section	Extant literature knowledge	Findings section	Contribution from this thesis
Calculative Culture	3.5.4	Mikes (2009:20) *quantitative sceptics or enthusiasts*; Mikes (2011:242) *potential for two calculative cultures to exist side-by-side within one organisation*.	6.1.2 6.3.2 6.5.2	Empiric case study examples Case study insight
Contingency perspective				
Public sector contingency framework	3.6	Woods (2009) *a contingency framework for the public sector with three variables: central government policies, information and communication technology*	6.2 6.3.1 6.4 6.5.1	
Public sector contingency framework	3.6	*and organisational size.*	6.5.3	Development of a fourth variable: leadership
Mindfulness	3.6.1	Linsley and Kewell (2015) *setting the tone from the top for a nuanced approach;* Verhezen and Dequae (2017:280) *interrelationship between risk types, role of the risk management function and mindset.*		Case study insight Case study insight

Table 6-5:Summary of findings presented on the management of strategic and operational risks within Navy Command, and their relationship to risk management literature.

7. Findings on RQ3: How is risk management assured in Navy Command?

Key findings reported in this chapter and related literature:

Purpose of risk management

- Sense making within organisations; Weick (1995).
- Moral imperative to manage risks: Verhezen (2010).
- Requirement for demonstrable auditability by organisations; Power (1996, 2003a, 2003b, 2004a, 2004b, 2005, 2007)

Risk Management system design

- Risk management package of processes, meetings and tools; Mikes and Kaplan (2015).
- Examples of risk "calculative culture"; Power (2007), Mikes (2009, 2011).
- Examples of roles of the risk function; Mikes (2011), Hall et al (2015), Mikes et al (2015), Kaplan and Mikes (2016).

Contingency perspective

- Proposal of a fourth contingency variable for public sector risk management; Woods (2009).
- Contingent variable role of the leadership's mindset in risk management; Linsley and Kewell (2015).

Having reported the case study findings in the previous chapter through the lens of management control of strategic and operational risks the thesis now reports on the findings regarding assurance of the risk management system in place within Navy Command, specifically the RN Audit Committee and Second Sea Lord's Holding–to-Account sessions, in order to answer the third research question: How is risk management assured within Navy Command?

7.1. Findings on the assurance of risk management

This section reports findings on assurance of risk management through analysis of observations and document review of two facets of Navy Command assurance: (1) Second Sea Lord holding-to-account sessions and (2) RN Audit Committee meetings. Only one of the quarterly holding-to-account sessions was observed during the case study, whereas all

of the quarterly RN Audit Committee meetings were observed. As with previous sections, findings are reported using the mix of mindfulness, culture, framework and risk function.

7.1.1. Risk 'mindfulness' and culture

This section reports findings on mindfulness and culture exhibited during Holding-to-Account sessions and RN Audit Committee meetings.

Holding to Account sessions

The development of Navy Board strategic risks, coupled with the maturity of the BOI discussions on risks to strategy, presented an opportunity to develop the senior leadership's interactions and discussions on strategic risk during the holding-to-account sessions. Noting an acceptance within senior-leadership of nuances in the various approaches to risk management within 2* area, a one-size-fits all approach was avoided through proposing 'handrail' questions the meeting might wish to explore during the agenda. In adopting this approach, the organisation could incorporate best practice without being perceived as being overly prescriptive and thereby constraining the culture in that business area. The Second Sea Lord, supported by Finance Director (Navy) and Assistant Chief of Naval Staff (Capability), convened as the three business 'owners' to receive updates on, and discuss progress on and risks to delivery of outputs; as such they were in business partner mode. However, at the start of the case study, it wasn't apparent how effective and encompassing the facilitator and internal control aspects of this meeting were. A pilot scheme (see section 7.1.2 for detail) was devised and agreed in principle, one which sought to address these areas through proposing that the Head of the Portfolio Office be in attendance during the meetings; achieving facilitation through his prior shaping of the agenda and information provided, and internal control through monitoring the implementation of decisions made and providing context at meetings with related agenda items. Through the acceptance of the pilot scheme, even though it didn't subsequently take place due to diary constraints, the senior management were displaying a 'leaderful mindset' approach. Again, with regard to culture: calculative pragmatism seemed to be observed, with trends and relative values being of interest rather than precision of numbers.

RN Audit Committee

The RN Audit Committee is chaired by a Non-Executive Director of the Navy Board; membership consists of another Navy Board Non-Executive Director (as Deputy – Chair), two Navy Command Operating Board members and an external member (Director Resources Land Command); various subject matter experts are in attendance

from internal audit and governance. With the committee comprising of senior membership, and with two members with much experience outside of Ministry of Defence, I was not surprised to observe a nuanced mindset when considering risk. Many different speakers presented to the committee on their particular areas of business; the committee did not prescribe any particular format for framing the information they received but were able to ensure insightful questioning sessions ensued. In terms of risk, the chair observed that:

> "the Navy Board, via the Navy Command Operating Board, looks at the content in risk reports; the RNAC wishes to understand the process that produces those reports, so as to be able to offer the Navy Board assurance on the rigour of thinking and debate that underpins the content".

The findings reveal both a nuanced mindset and pragmatic culture, yet an underlying sense of rigour, in Navy Command's approach to assurance of risk.

7.1.2. Framework

This section reports findings on the framework proposed for Holding-to-Account sessions and RN Audit Committee meetings.

Process and Meetings

Holding-to-Account

Throughout the case study one-to-one meetings were held between the Second Sea Lord and the sub-portfolio owners in order to hold-them-to-account for the delivery of their aspect of the business; from one observation they were a conducted as a conversation, with a Management Information pack available as required to support discussion on items of detail. Though primarily for the purpose of assuring the Navy Board member of the status of that area and to highlight any concerns, the meeting – being un-minuted – was felt by some to be a missed opportunity to introduce more rigour into the overall management control of Navy Command's business. A pilot scheme to trial an alternative approach was agreed.

In May 2017 a more structured agenda for the meeting was developed. The proposed agenda drew on best practice from a cross-Whitehall risk management document issued by the Cabinet Office (2017) which builds on the Treasury department's principles (HM Treasury, 2014); an extract shown in Figure 8 illustrates the advice available. The agenda aimed to enhance the assurance of reviewing, monitoring and reporting risk within Navy Command, through framing the discussion through four lenses: delivery of

the sub-portfolio; performance against Command Plan objectives; implications of higher direction of Defence on the sub-portfolio and assurance of risk within the sub-portfolio. The aim was to provide a referential object against which to assess the risk and provide context for the discussion.

Reviewing and Monitoring Risk
How have you assured yourself that there is clear accountability for each o the organisation's top risks?
How have you assured yourself that the quality of risk information is sufficient to support decision-making?
How have you assured yourself that there is an active management of risks I.e the risk picture is dynamic and mitigating actions are delivered?
How have you assured yourself that the organisation is sufficiently aware of the top risks faced by any arm's length bodies?
Reporting on risks
How do you show the expected risk exposure over time, for a more active management of risk conversation?
What thought-provoking questions do you use to support your risk reporting? For example: Are we doing enough to mitigate the risk? Are we doing enough at the right pace? How will we know if the actions have had the intended effect? Who can help manage this cross-cutting risk? What contingency risks do we have in place should this risk occur?
How do you convey the target risk exposure and explain what management is doing to get there?

Figure 7-1: Examples of Risk Management Best Practice (Cabinet Office 2017)

The pilot had been devised to have the Head of the Portfolio Office present in the holding-to–account sessions, thereby able to shape and advise on the conduct of the agenda; thereby fulfilling the risk function of facilitator. Due to various diary constraints

the pilot didn't take place, so as a consequence the more formal agenda was not utilised though it is understood that the questions for consideration were included in the briefing pack for consideration by participants.

RN Audit Committee

The RN Audit Committee, while it was led by a nuanced mindset and promoted a culture of challenge and debate, was run on a formal and structured basis; agendas were set in advance with supporting papers circulated a week ahead. The time allocation for each agenda item was well considered, and while the agenda was full there was never the impression of debate being curtailed due to an overly ambitious amount of material to cover. In terms of providing assurance on risk, Navy Command was piloting a 'Risk Assurance Map', "an attempt to construct a visual account of good governance" (Manochin et al, 2011). This endeavored to represent where the four levels of scrutiny[42] available were being utilised; the theory being that an overview of all the assurance being provided would allow the limited resources available to perform assurance to be assigned to address the highest priorities, and indeed prevent over assurance through reducing duplication of effort.

The findings have shown that a nuanced mindset has created a pragmatic cultural approach to the assurance of risk management; one that is receptive to trialing new agendas and information tools to help participants fulfil their assurance remit.

7.1.3. Linkages to other Controls

Holding-to-Account

The holding-to-account session, with two Navy Board members present, provided an ideal opportunity to gain a more detailed understanding of the performance and risk aspects of that sub-portfolio's business; an understanding that could be taken into other interactive fora to inform their discussions and provide a better baseline understanding of the nuances contained in the many diagnostic control systems. Much of the assurance reporting on risk management within Navy Command concerns the apparent 'staleness' of lower level risks within the sub-portfolios, as identified through the timeliness and accuracy of risk recording in ARM. In order to give assurance on the

[42] This were termed: 1st Line of Management; 2nd Line of functional Oversight (from Governance Boards); 3rd Line of Independent Review (from within MOD); 4th Line of External Audit.

quality of the risk information being presented, the pilot holding-to-account agenda included an insight into the metrics for risks recorded in ARM for that sub-portfolio, as an indicator of the quality assurance within that area. Assurance of the business processes is also within the terms of reference for the RN Audit Committee, thus there would appear to be an opportunity to compare notes after each cycle of information would be beneficial. This is reflected as a proposed amendment to the governance diagram, in Figure 7-2, to include an information flow between the RNAC and Second Sea Lord's H2A meetings.

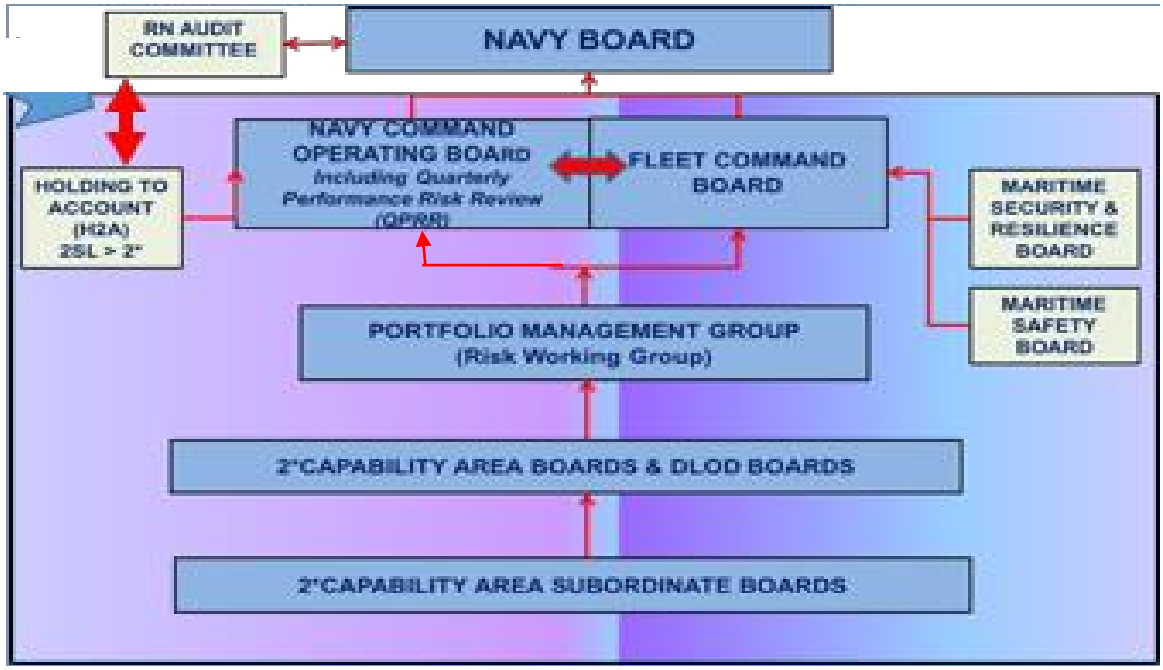

Figure 7-2: Updated Portfolio governance within Navy Command showing proposed enhanced exchange between RNAC and Holding-to-Account meetings (from internal document).

RN Audit Committee

The RN Audit Committee, advising as it does the Navy Board, has the opportunity to link with all controls employed within Navy Command in its remit to provide an annual assurance report for all aspects of business. With busy members and only a remit to meet quarterly, the challenge will be to "join up the dots" between the reports on the various controls and identify areas of inconsistency; a robust secretarial function will be required.

The findings have shown that the requirement for complementarity between control systems extends through to the organisation's higher levels of management assurance; for example sharing of information between assurance sessions and the quarterly

performance and risk control system would enhance the quality of the debate and understanding throughout the wider organisation.

7.2. Analysis of assurance of risk

One Navy Command Operating Board members when presenting to the RN Audit Committee said of risk management: “it helps bring focus to outputs and convey understanding and attention at board level”. In order to have confidence in the data that is informing that understanding, a comprehensive assurance system is required. An external audit of Navy Command reported “culturally there’s a robust process [including that of assurance] …but ARM is a problem”. Thus it could be anticipated to see included in the RN Audit’s report for the year end a comment on ARM to reflect that assessment, and a call for updates on the ARM ‘get well’ package. This isn’t meant in the sense of Power (2016:280) making “risk management auditable” and confining it to the realms of internal control, nor that Navy Command needs to expend hours of staff effort in order that people may “trust numbers” (2004a:774); its more in the vein of ensuring there is some intellectual rigour behind the statements of risk assessment and, so far is possible, an attempt at parity in the underlying assumptions that allow comparison to be made between risks, and between risks and the performance they may affect. Thus rather than overseeing “risk management based internal control [which] threatens to imprison organisational thinking” (2004b:225) the RN Audit Committee is merely seeking to assure the Navy Board that there is an ‘intelligent’ approach to risk management of a complex organisation; where there are ‘known unknowns’ it is seeking to manage, and identify those that remain as yet ‘unknown, unknowns’. As for the holding-to-account sessions, these would appear to be mindful opportunities for the chair to refine their ability to be “the author of a wider organisational narrative of risk” (2004:51); taking the opportunity to probe and question the underpinning assumptions yet retaining a helicopter view of the implications and how they fit into the wider organisational challenges.

Analysis of the findings relating to the assurance of risk reveal three key insights:

7.2.1. Leadership mindset: a contingency variable

Collier et al (2006) assert that basic management structures are common across large organisations regardless of sector; Woods (2009) tested this and identified contingent variables that influenced both the selection and operation of the risk management system in the public sector (local government). With public sector ranking risk differently goals to the private (certainly financial) sector (2009:75), and a tendency to approach risk management in an intuitive way (McPhee, 2005) Woods proposed that a new

contingency framework was required for the public sector and identified three new variables (central government policy; information and communication technology; organisational size). Her case study into Birmingham City council explained how those three variables affects both the details of the structure and the ways in which it is applied. Observations of the most senior levels of leadership within Navy Command have revealed that it is their mindset towards the approach required for risk management that determines the framework, culture and required role of the risk function. That is not to say that this is purely a one-way causal relationship, as no doubt their perceptions are framed by their previous experience of risk management occurred; but in the current context the thesis is that the leadership's mindset which is a driving factor in shaping how the risk management system is designed and operated.

7.2.2. Leadership: a role of 'sense-making'

First and foremost, Navy Command's approach to risk management allows it to exert control over the organisation through leadership; a function described here by Thayer (1988: 250, 254):

> "A leader does not tell it "as it is"; he tells it as it might be, giving what "is" as different "face"…the leader is a sense-giver. The leader always embodies the possibilities of escape from what might otherwise appear to us as incomprehensible, or from what might otherwise appear to us to be chaotic, indifferent, or incorrigible world – one over which we have no ultimate control" .

Through the assurance holding-to-account sessions and RN Audit Committee meetings, along with the mix of other established business processes, the senior leadership is articulating a vision and strategy - that is resource conscious and mindful of future uncertainties and risks – so that both external and internal audiences understand the broad 'direction of travel'. The assurance process also permits the senior leadership to shape the organisation's environment – primarily here in terms of resources; as Huber and Glick state (1993:9):

> "Top managers are manipulators of the organisation's environment, at least to a degree. Top managers advertise, lobby, and educate to make environments hospitable for their organisation. By influencing the organisation's environment, top managers affect the flow of environmental demands and resources".

The assurance aspect of risk management permits the organisation's senior leaders within Navy Command to make sense of their case to wider Defence with confidence: "we can do this for you with these capabilities and this much resource; if you want us to do this much more it'll cost this additional premium". That said there are opportunities to do better with joining up the various control systems so to enhance the feedback to staff it provides on priorities and indicative resourcing levels against which planning can take place. Through a "mindful" leadership (Linsley and Kewell, 2015) approach, that supports a framework tailored to its' needs, the senior leaders gain assurance on the organisation's ability to manage and govern the potential of risk failures; with the potential for better complementing this with use of a dedicated risk function to facilitate analysis by the most senior leadership of the requisite data and ensure internal control oversight of the underpinning rigour applied.

7.2.3. A moral compass to manage risks or merely demonstrating auditability?

The observations and conversations held during the research into assurance of risk revealed a desire by participants to achieve richer risk conversations than those held previously. To avoid having merely "decorative and perfectionist" (Power 2007:155) formulations of risk management, stakeholders strove to understand how to converse about risk. The prototype holding-to-account agenda and risk assurance mapping by the Royal Navy Audit Committee were both examples of attempts at tools to facilitate better conversations about risk oversight. Organisations have difficulty in articulating and implementing action plans, and action columns in risk spreadsheets are often cosmetic unless they reflect pre-existing workstreams (Power 2007:81; Sharman, 2006); the challenge now is to underpin the risk assurance mapping with truly effective monitoring of the governance arrangements in place. To achieve new forms of data collection is always a behavioural challenge. "Gaining buy-in from staff and the organisational capacity to use new data sets to challenge prevailing cultures and norms, are persistent themes in operational risk discourses" (Power, 2007:119). Management knowledge, and thereby control, ultimately comes from decisions within organisations based on signals, measures and representation within formal information systems. My interpretation of every interaction I observed and document I reviewed was that Navy Command is an organisation where the senior leadership and management care passionately about delivering a navy that is fit for purpose for the requirements of Defence; conscious that they will be able to demonstrate auditability rather than be fixated by it.

Thus what do the findings reveal about the purpose of assuring risk as outlined above? At the strategic level, through appropriate use of risk culture and mindfulness, it is assuring the ability to deliver on maritime strategy 2035, the navy's contribution to Defence. But in doing so it is also acting on a grand strategic[43] level by safeguarding the reputation of the Royal Navy and role it performs for its government and country; MS 2035 is but one milestone in a long history of maritime contribution to the levers of global influence. Power (2007:129) states that since 2004 "corporate brand reputation outranks financial performance as the most important measure of corporate success". Reputation is the outcome of "creating an outcount of an organisation, embedding that account in a symbolic universe, and thereby endowing that account with social facticity" (Rao, 1994:31); which speaks to Weick's (1995) purpose of sense-making, and which the findings have shown the Royal Navy to be undertaking.

There are lessons and implications for other similar organisations seeking to assure the execution of their management control strategies, and the associated resource; most salient perhaps is the need for an organisation to embed an appropriate framework of meetings, processes and tools to support the collation and consideration of the requisite data, in order to support good conversations. The findings in this chapter have shown that there are three prerequisites for this to happen effectively: mindful leadership, a culturally appropriate context for stakeholders to engage; and a 3-fold role for a risk function: business partner, internal audit and facilitator; of which only the latter, the facilitator was absent from assurance during this case study.

In answering research question 3 (How is risk management assured in Navy Command?) the findings have provided insight into both the purpose and system design of risk management within Navy Command. They reveal an organisation who believe that the purpose is to take a strategic view of what is of value and then mitigate the risk to achieving it; an organisation that strives to deliver a narrative that makes sense of uncertain information; a narrative where the leadership acts with a moral compass to take a long term strategic view, and then endeavours to overcome the short term challenges in such a way as to be consistent with that view. Thus they are findings of an assurance system which is demonstrably auditable for the stakeholders, but one that is motivated by more than just ticking boxes.

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[43] Feaver, P. (2009) cites Jon Gaddis' explanation of grand-strategy as a term from academia that refers to a coherent blend of historical, political science, public policy, economic and 'real-world' knowledge of practitioners means to advance the national interest.

The findings presented in this chapter and associated literature are summarised in Table 7-1 here:

Risk management theme	Literature Review Section	Gap in literature knowledge	Findings section	Contribution from this thesis
Purpose				
Risk Identification	3.4.1	Boholm and Corvellec (2011:186) risk definitions are situated expressions of individual and collective understanding of hazards to objects of value.	-	-
Sense-making	3.4.2	Weick (1995:57) Sense-making, as a perspective, is about "plausibility, pragmatics, coherence, reasonableness, creation and invention"	7.2.2	Case study insight into an organisation's sense-making with incomplete information from managing risks to strategy
Moral obligation	3.4.3	Verhezen (2010:189). Concept of an organisation's governance of risk laying on a continuum of moral responsibility and legal compliance	7.2.3	Some initial case study insight from managing risks to strategy
Auditability	3.4.4	Power (1996, 2003a, 2003b, 2004a, 2004b, 2005, 2007) the need for auditability and the influence on risk management.	7.2.3	Some initial case study insight from managing risks to strategy
System Design				

Risk management theme	Literature Review Section	Gap in literature knowledge	Findings section	Contribution from this thesis
Framework	3.5.2	Mikes and Kaplan (2015:39-40) elements of a framework 'mix' and types of risks definitions. Verhezen and Dequae (2017:280): the interplay between risk types, the role of the risk function and the prevailing mindset of 'compliance' versus 'artfulness'	7.1.2	Empiric case study examples Empiric case study examples
Tools	3.5.3	Hall et al (2015:4) central role of tools for risk function interaction with decision makers; 'engaged toolmakers' that adjust and reconfigure tools to meet the needs of the executive.	7.1.2	Empiric evidence from two examples of tool making
Risk Function role	3.5.5	Kaplan and Mikes (2016:13) different roles of overseer, business partner and independent facilitator. Hall et al (2015:18) gaining influence with decision makers through tool making and interpretation. Mikes et al (2013:74) four competencies of an influential risk function.	7.1.1 7.2.1 7.2.2	Empiric evidence of three roles in one organisation Empiric evidence from two examples of tool making Case study insight

Risk management theme	Literature Review Section	Extant literature knowledge	Findings section	Contribution from this thesis
Calculative Culture	4.5.4	Mikes (2009:20) quantitative sceptics or enthusiasts; Mikes (2011:242) potential for two calculative cultures to exist side-by-side within one organisation.	8.1.1	Empiric case study examples Case study insight
Contingency perspective				
Public sector contingency framework	4.6	Woods (2009) a contingency framework for the public sector with three variables: central government policies, information and communication technology and organisational size.	8.2.1	Illustration of a fourth variable: leadership
Mindfulness	3.6.1	Linsley and Kewell (2015) setting the tone from the top for a nuanced approach; Verhezen and Dequae (2017:280) interrelationship between risk types, role of the risk management function and mindset.	7.1.1 7.2.1 7.2.2	Case study insight Case study insight

Table 7-1:Summary of findings presented on the assurance of risk management within Navy Command, and their relationship to risk management literature.

8. Discussion on RQ4: What should the model be for portfolio risk management in Navy Command?

Key points raised in this chapter:

- A new model developed by the author provides a structured way of thinking when synthesising the interdependence between (1) object at risk; (2) management control systems in use and (3) the framework, culture and role of risk function determined by the leadership mind set.
- The leadership mindset will influence the culture, framework and role of the risk function, however freedoms are constrained by the requirement to be demonstrably auditable (Power 2007)
- Preeminent role of leadership in fusing the various elements of the model.

8.1. Introduction

This chapter proposes an overall model for portfolio risk management, synthesised from the findings that answered the first 3 research questions reported in chapters 5-7, in addition to building on the academic and practitioner literature reviewed in chapters 2 and 3. The synthesis in this discussion chapter answers Research Question 4: "what should the model be for the management of risk in Navy Command?", which readers may wish to extrapolate to organisations within their own experience.

The chapter is structured thus: firstly, two metaphors are offered to provide a way of viewing the organisation which the model will serve; then, the case for the need for a model is made prior to the model for designing an integrated risk management system being outlined. Then each of the model's questions is justified and explained, ahead of a counter-thesis for integrated risk being considered. The chapter concludes by summarising the contribution made by the discussion.

8.2. Two metaphors

Two metaphors are offered here to convey an impression of the organisation that the model will serve. Firstly, in terms of a dynamic entity – to paraphrase Dirsmith and Haskins (1991)

- the thesis suggests that a risk management organisation can be viewed more as an organism than mechanism. Mechanism suggests an integration of formal systems which holds out the promise of an algorithmic knowledge base, whereas organism is meant to convey the sense of greater interconnectivity between the various dynamic and evolving sub-systems with the whole being greater than the sum of the parts.

Secondly, there is the metaphor of the organisation as a crystal or even a diamond. These structures are multi-faceted and individuals' experiences will be "refracted through the prism" (Emirbayer and Johnson, 2008), thus influenced by that individual's role – be that within or without the organisation. Crystals are natural structures that usually evolve organically, whereas diamonds are crafted to give the desired shape; it is perhaps therefore the diamond that is most analogous to an organisation that seeks to adopt the optimal structure to meet its needs.

8.3. A model for designing a risk management system

With the integrated risk management design model of Figure 8-2, in section 8.5, the thesis offers a model as a new way of considering how an organisation approaches risk management through making explicit the intrinsic benefit of the various components of effective risk management: (1) clarity of purpose and the need to know what of value is at risk; (2) ensuring that the selected risk framework and role of the risk function is consistent with the mindset of the leadership and the risk culture they create; (3) to ensure that the various control systems in use are 'complementary' to each other; (4) that the perspectives of those involved, including their appetite for risk are understood; and (5) and that time, that most precious of commodities, is factored into the system. In short an organisation should use frameworks, control systems and expertise in a way that is appropriate to the object at risk. By depicting this through the use of a model it is intended to help convey the knowledge gleaned from the research in a way that others can extrapolate it to their own fields of expertise.

In the public, or any regulated sector, there are limits to the freedom permitted to execute a mindful approach. So, on one count Power (2004a:27) finds there is a need for "an 'intelligent' risk management approach; one that is not control obsessed, and which has a second order capacity to observe and challenge the effects of the internal control system itself so as to avoid being swept away by regulatory programmes". However, it must be acknowledged that any model needs to demonstrate it adheres to the 'rules of the game'; hence question 4 – the demonstration of auditability - as with question 1 of the model (what is at risk?) pervades across all other considerations in the model.

This chapter now offers a starting perspective for interpreting the model – one of uncertainty

8.4. Context: uncertainty

This models' focus is on the leadership, managerial and administrative practices that have the explicit purpose of representing and making decisions about risks; practices that depend critically on management systems of representation and on instruments for framing objects for the purpose of action and intervention (Power, 2007:7). Action and intervention that require decisions about the future, and a corresponding allocation of responsibility for those decisions. In this respect uncertainties become risks when they enter management systems for their identification, assessment and treatment; thus the author distinguishes between uncertainty and risk, through the expectation that the latter are to be treated within management systems (2007:5), rather than a delineation between the amount of information held on probability. "When uncertainty is organised it becomes a risk to be managed" (2007:6). For that management to occur, attention must be triggered, information must be interpreted, and response actions coordinated (Hutter and Power, 2005); all of which can be (adversely) affected by "rigidities of core beliefs, managerial distractions, disregard for the views of outsiders, lack of regulatory compliance, and difficulties in assembling critical information" (Power, 2007:10). In this model actions are taken on uncertain events in order to manage their effect on valued outcomes.

By way of illustration, Figure 8-1 shows an organisation X with a growth strategy, such that output increases from 2.5 units in 2020 to 6 units in 2035; there is a risk however, that in 2025 an event adversely impacts output so that output falls short of desired levels by one unit. The weight of management effort is in delivering the desired performance to time; however responsible management practices dictate that effort is also expended understanding the environment out to 2035 and considering in sufficient detail what the appropriate response plans are using cost-benefit analysis. That is not to say risk takes over primacy from performance, merely that prudent planning is required. The risk management system design model, detailed in the next section, helps structure an organisation's approach so that optimal decisions can be taken on how to mitigate the potential occurrence of adverse event in 2025, such that downward performance can be reversed by 2030 and a regain commenced towards performance standards required by the strategy for 2035.

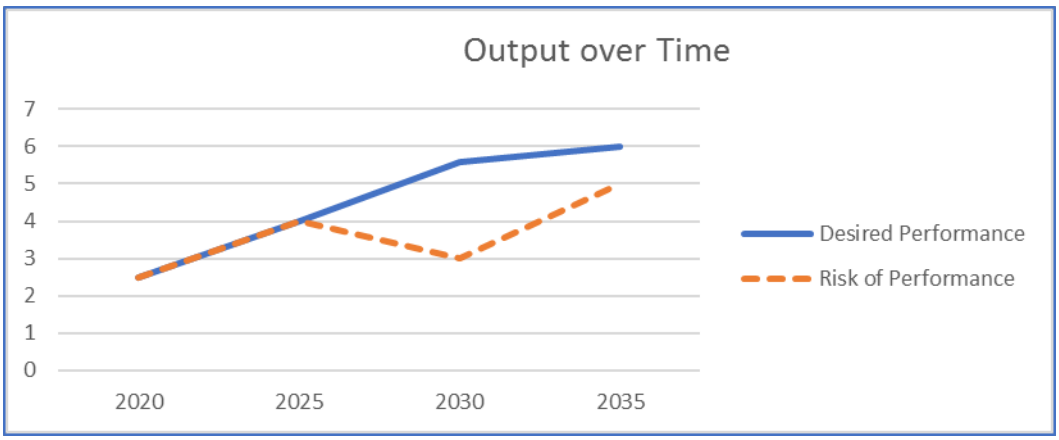

Figure 8-1: Illustrative growth strategy showing output over time (source: the author)

8.5. The Model

The model shown in Figure 8-2 comprises five themes to address when designing or reviewing the risk management system for Navy Command, namely:

1. The purpose of risk management;
2. System design considerations;
3. Complementarity between control of risk and other controls in the organisation;
4. People aspects;
5. Time considerations

Each theme, and its constituent questions, is discussed below.

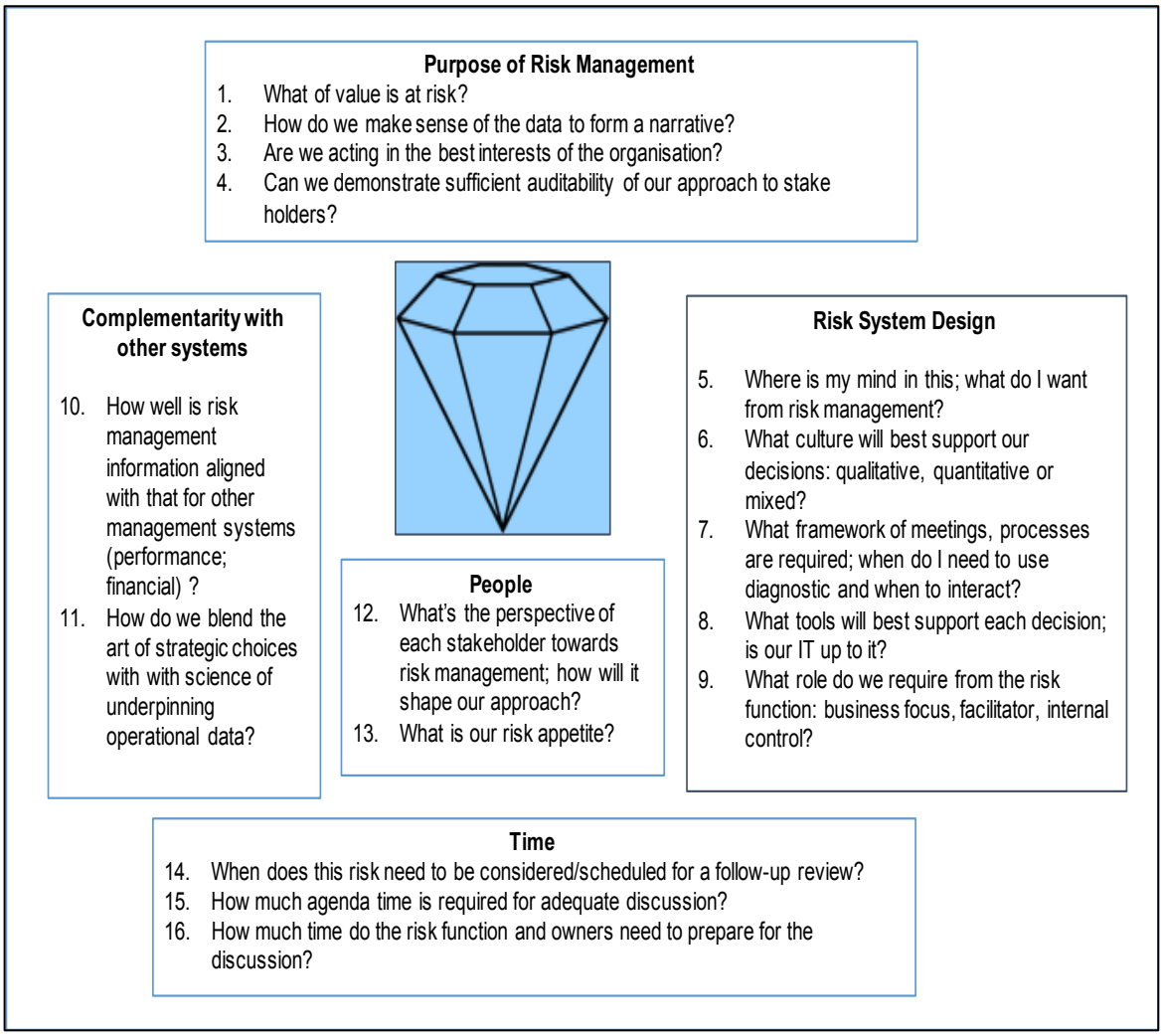

Figure 8-2: A model for risk management design (source the author)

8.6. Purpose of Risk Management

8.6.1. Q1: Risk in relation to what?

The first 'purpose' questions, "What of value is at risk?", is drawn from risk management literature reviewed in section 3.4.1, as well as findings answering research question 2 on risk management in chapter 6. The relational theory of risk (Boholm and Corvellec, 2011), reviewed in section 3.4.1, suggests "risk is cognitive schema, a cultural model of a domain of knowledge (Strauss and Quinn, 1997: Ch 3) that constructs relationships between objects in terms of a potential threat to the value embedded in objects at risk" (Boholm and Corvellec, 2016:111). Where, the authors contend, value is an outcome of intricate social processes (of identification, definition, hierarchisation and calculation) that condition preferences in more or less determined ways (Boholm and Corvellec, 2016:112). It is, however, not always clear where the criteria to assess value come from (Hennion, 2015); Stark (2009) claims this serves management well, as it permits ambiguity about what is valuable and thus more freedom to pursue their own choices. As well as certain latitude in defining criteria for value, Boholm and Corvellec (2016) report findings from studies into railways that claim risk work is largely intuitive and experience based (2016:123); where experts draw on their past experience and heuristic conjectures, with only a nominal resemblance to the formalistic rationality of published techniques and procedures (2016:124). Value is assigned through formal and informal interactions; where objects are connected to values at stake when the risk emerges, and the object assigned as a legitimate object of protection (2016:124-5). Risk judgements therefore start with an inside-out activity, where value serves as the heuristic basis for searching out what may constitute a risk (rather than an outside-in activity that consists only of imaging the possible negative consequences of threats). In adopting this approach organisational actors should ask themselves: what are we holding as valuable? Why do we believe it to be of value? And what therefore are the threats to that value that need to be managed?

The clarity of 'risk to what' was demonstrated in the findings on risks to strategy, section 6.3.3, where delivering a coherent maritime strategy provided a 'headmark' referential object of what it is at value and thus an object to make relative assessments against. Without the clarity of the object there is nothing to make comparisons against, and thus risks get treated individually; in a resource constrained environment there is a deficit of resource thus the individual approach cannot work; whereas an object facilitates a relative prioritisation judgement to be made. The valued object in this example was strategy as this framed the discussions during the research data collection phase on the

Balance of Investment; they could legitimately be replaced by any item of value within an organisation's portfolio to deliver– a programme to develop a new ship or submarine, or a significant project for a new capability would equally be valid.

8.6.2. Q2: Sense-Making

The second purpose question is "How do we make sense of the data?", drawn from risk literature reviewed in section 3.4.2, as well as findings on research question 2 on managing strategic and operational risks (chapter 6) and research question 3 on assurance of risk (chapter 7).

At the heart of the findings that informed this model is the Navy Command Operating Board members making sense of the risks to the objects held at value. The literature reviewed suggested sense-making occurs when individuals put stimuli into some kind of framework that enables them to "comprehend, understand, explain, attribute, extrapolate and predict" (Starbuck and Millliken,1988:510); they do this in order to "structure the unknown" (Waterman, 1990:41) through "the reciprocal interaction of information seeking, meaning ascription, and action" (Thomas, Clark, and Goia, 1993:240). Indeed, March (1984:18) argues "organisational life is as much about interpretation, intellect, metaphors of theory, and fitting our history into understanding of life as it is about decisions and coping with the environment". Sense-making is then about "the ways and processes people use generate what they interpret" (Weick, 1995:13;17)

The sense-making at the heart of the model is compatible with Isenberg's (1986) studies into managerial thinking which showed the importance of plausible reasoning; he describes it thus:

> "Plausible reasoning involves going beyond the directly observable or at least consensual information to form ideas or understandings that provide enough certainty… There are several ways that this process departs from a logical-deductive process. First the reasoning is not necessarily correct, but it fits the facts, albeit imperfectly at times. Second, the reasoning is based on incomplete information."
>
> (1986:242-243)

The "incomplete information" is particularly germane to the management of risk, and the provision of enough certainty is a leadership – if not management – function. The case study findings showed a form of management control by the leadership that aims to provide a vision for the organisation of the future (in the year 2035) and through sense-

making enough certainty of how to evolve from its present state to the envisaged future entity. The findings on sense-making showed, as a perspective, is about “plausibility, pragmatics, coherence, reasonableness, creation and invention” (Weick 1995:57). People need to filter, if they are not to be overwhelmed with data (Miller 1978); thus Navy Command leadership through providing a narrative of what is required of the organisation in 2035, in order to meet the Maritime Strategy 2035, is giving MoD Head Office options for investment, and its own staff beliefs and boundaries to guide the underpinning operational decisions.

8.6.3. Q3: Are we acting in the best interests of the organisation?

The third purpose question, “Are we acting in the best interests of the organisation?”, is drawn from risk literature reviewed in section 3.4.3, as well as findings on research question 2 on managing strategic and operational risks (chapter 6) and research question 3 on assurance of risk (chapter 7).

In Figure 8-3 Verhezen and Dequae’s (2017:280) model for risk, risk culture and risk appetite for creating and preserving value is represented. The findings in this case study showed how the organisation endeavoured to manage preventable risks by the management identifying ‘tolerable’ exposure positions; in contrast strategic risks, and risk to strategy were artfully considered in order to develop choices to deliver the best value. The synergy between the management of both types of risk by Navy Command, as represented in Figure 8-3, can be interpreted using Verhezen’s (2010) integrity imperative, in the literature review section 3.4.3, to manage preventable risks such that the effect on strategic choices and influence on future navy respects a moral responsibility to manage as best as resources and priorities allow.

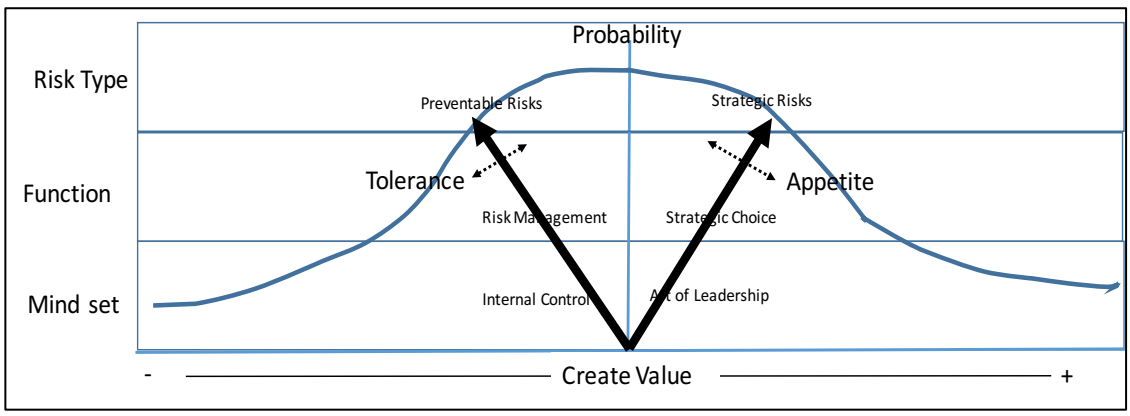

Figure 8-2:Interrelationship between risk types, function and mindset (after Verhezen, 2017:280)

8.6.4. Q4: A requirement to be auditable

The fourth and final purpose question, “Can we demonstrate the auditability of our approach to our stakeholders?”, is drawn from risk literature reviewed in section 3.4.4, as well as findings on research question 2 on managing strategic and operational risks (chapter 6) and research question 3 on assurance of risk (chapter 7).

In the literature, Power (2003:392) claims that “an important part of being a practitioner is to create representations of problems and solutions that are generally regarded as legitimate”. Thus with auditing and internal control practices being regarded as a “self-regulating system whose components are an interacting, semi-institutionalised and loosely coupled structure that is constantly moving and subject to change” (2004a:392), to paraphrase Professor Power, it is beholden on practitioners to ensure that risk management is framed to provide sufficient legitimacy without audit becoming an end in itself. In terms of identifying risks Power (2007:180) holds that “risks only have reality within social systems which have expectations of decisions and actions, expectations which crystallise in demands for management systems for risk”. Furthermore, he contends that a shift within risk management from analysis and calculation to one of risk governance, is associated with institutional pressures to make risk management practice auditable (2007:153). This desire for auditability however has spawned the “use of needlessly detailed ‘standard check lists’ and pursued without regard to weighing costs against benefit’ (2007:153). Authors (Weick, 1993; Linsley and Kewell, 2015) have suggested however that an organisation needs a range of styles in order to provide an analytic focus that addresses both probabilities and also feelings and social constructions of risk (Power, 2007:154). Leaders then will give their attention that which is perceived as most salient – influenced by their previous experience and the current context; the climate of auditability however requires an account of the nuanced risk agenda which is created by how potential events are “perceived, classified, dramatised and mobilised” (2007:158) rather than a positivistic record of decisions.

The findings from the research into strategic and operational risk management (research question 2) and assurance of the system (research question 3) demonstrate that an organisation’s risk model thus needs to be able to support a nuanced approach to risk management and decision making, while demonstrating sufficient rigour and transparency for internal control; as “to lack internal controls, or for such controls to be judged ‘materially’ weak is to fail as a legitimate organisation” (2007:161). As a consequence, “risk is not simply to be managed but also articulated within a system whose operations are auditable and inspectable” (2007:162), where organisational

practices are publicly known by participants, and recognised by others. Thus auditability of an organisation requires its practices to be made legible as a whole (Scott, 1998); in the case of risk aspects, particularly those intangible assets, auditability is manufactured by "placing trust in the oral and written representations from internal and external experts" (Power, 1996). This was demonstrated most clearly in the research into the Balance of Investment for risk to strategy; where the Board members needed to be able to trust the data that was presented to them; and in turn be confident that there was underpinning rigour in the narrative they exposed to MOD Centre. Perforce then auditability is a social construction which uses belief in the precision of evidence presented along with trust in the presenter (Power, 2007:164). Managers operate primarily on the basis of signals, measures and representations within formal information systems; this readily auditable evidence informs the practitioner along with their professional judgement and tacit knowledge. Again this was revealed in this case study where the art of strategic management of risks was achieved through a blend of intuition along with assessment of quantitative data.

Finally, the literature suggested that in attempting to determine whether an organisation has the 'correct' balance between managing and auditing risk a key indicator might be their use of artefacts to represent it. In managing risk organisational actors are constantly engaged in the work of representing it (Power, 2016:275); risks as non-real possibilities literally do not exist and cannot be seen until they are represented and processed for management (Power, 2014). Thus artefacts, or 'tools', need to be created to represent them. In considering the purpose for which an organisation creates artefacts, Power (2016:281) offers five questions to consider whether the balance of focus lies with audit work or truly with the management of risks:

- Do the representations of risk in artefacts primarily precede the performance of risk management actions, or do they exist to record the actions?
- How much time do organisational actors spend in performing the management of risk actions as compared to producing representations of those actions?
- Are the representations significantly edited after those actions are taken?
- Are the artefacts immediately discarded after their use to orient action or are they stored for accountability?
- Are artefacts for risk management standardised to make them easier to understand by actors, or primarily to enable collation and aggregation with other artefacts?

These are useful questions to reveal where an organisation lies on the scale of 'attempting to understand an uncertain future' through to 'box-ticking'. The findings in this case study are not conclusive as the volume of work required by a single researcher precluded their detailed completion. That said, the impression gained by interpreting the observational data for the research questions is mixed. For research question 2 (strategic and operational risk management) the interpretation is that many risk management tools are created for reporting and auditing purposes rather than being used in the active management of risks; which leads to a sense of risk bureaucracy rather than useful management tools. That said there are encouraging signs, not least through the tools being piloted, of a change in this approach. For research question 3 (assurance of risk), which in nature is much closer to Question 4 in this model, the findings again reveal an approach that seeks to develop tools – both in holding-to-account and the RN Audit committee – that enable a living record of the status of risk management. "Sufficient" auditability in the model's question 4 suggests a relative judgement on what is good enough and thus, is the aspiration, it may lead the organisation away from audit for audit sake.

8.7. Risk Management System design

8.7.1. Q5: Where is my mind in this?

The first system design question, "Where is my mind in this; what do I want from risk management?", is drawn from risk literature reviewed in section 3.6.1, as well as findings for research question 2 on managing strategic and operational risks (chapter 6) and research question 3 on assurance of risk (chapter 7).

This section of the thesis contends that an effective risk management system needs to be able to accommodate a variety of nuanced management styles, whilst being demonstrably transparent on the rigour of the system that underpins decision making in order to demonstrate auditability (see Q4 section above). It might be considered that the expansive mindset associated with a nuanced cultural approach is at odds with the reductive remit of audit and internal control; if so, in adhering to the governance requirements to demonstrate auditability, an organisation would want to be careful so not to unduly constrain the nuanced mindset for risk.

The practical task of management requires organisations to take account of the different ways employees see risk, and to recognise the situated nature of their understanding of risk (Hutter, 2005:90). This involves comprehending that the various groups that the organisation comprises of may encounter a risk with differing perspectives. Taking

responsibility for risk management then, needs to include taking responsibility for recognising the differences (2005:91); an approach that Linsley and Kewell (2015) term "mindfulness". The findings from research question 2 (strategic and operational risk management) and research question 3 (assurance of risk) have shown that it is a contingent variable - the 'tone from the top' - which sets the conditions for the enactment of the framework of processes, meetings and people, and sets the culture of risk. Conditions which are defined by: how much time do I wish the organisation to expend on this (see section on model questions 14-16 below for more detail)? Will I be persuaded by a qualitative or quantitative argument (see model question 6 below) and thus what processes (see section on model question 7), tools (see section on model question 8), and skills (see section on model question 9) do I need in place?

In addition to the need to understand their mind set the findings have also demonstrated the need for the leadership to be clear on what it is that they want the risk management system to deliver: manage their strategic risks; make sense of their strategy for the coming decade or two; control their operational risks; or provide a framework that links up the three preceding options? While each one of those is achievable the findings have shown that what is 'in scope' for the particular risk agenda needs to be defined so that the associated risks can be identified, and thus the trade space for risk resource allocation bounded.

8.7.2. Q6: Calculative cultures

The second system design question "What culture will best support our decisions: qualitative, quantitative or mixed?", is drawn from risk literature reviewed in section 3.6.1, as well as findings from research question 2 on managing strategic and operational risks (chapter 6) and research question 3 on assurance of risk (chapter 7).

The literature review of chapter 3 into risk management included Slagmulder's (2017:180 -1) interview findings from five multi-national companies in Europe; where board-level respondents confirmed the importance of the 'tone at the top' (see previous section on Q5) for enhancing the information flow between different levels of the organisation, with the board being "instrumental in creating a risk culture at all levels…that encourages open communication and constructive challenging of assumptions". The findings from research questions 2 and 3 (chapters 6 and 7) have documented the debate over the extent of, and requirement for, "trust in numbers" (Porter, 1995); they revealed, as with Power (2007:120), "on deeper inspection this trust is more complex and varied". The findings supported Power's (2007:120) two

communities: “calculative idealists and calculative pragmatists”. The former typically regard numbers as aiming to represent ‘truth’, and who seek robust risk analysis. Pragmatists, in contrast, “are more tolerant about risk and control scoring systems” and can accept ‘crude approximations’ believing them to “steer behaviour and action in the right direction” (2007:121). Certainly in the case of managing operational risk, calculative pragmatists regard it as “more akin to a craft than science” where a soft approach “makes sense in environments where it is critical to identify and catalogue risks which lie at the limits of formal knowledge” (2007:121). The model’s question 6 prompts the system design authority to consider which of the approaches, or blend of approaches, is most appropriate for their organisation. The findings from observations of this nationally significant organisation was that the one that held sway was the pragmatist: with their synthesising the collected opinion held within the organisation.

It is appropriate at this point in the thesis to synthesise the discussion on culture in this section with that of auditability detailed previously in section 8.6.4; reference to the literature review is helpful here. In addition to what he terms as first-order measurements – namely those relating to economic events – Power (2004a:773) identifies a world of second-order measurement which includes, amongst others, risk management. Second-order measurement “consists in extensive and dense systems of circulating statistical objects in a hyper-reality of calculation” (Vollmer, 2003). The world of second-order measurement is not solely the preserve of experts, with many routine or lay measures of performance employed throughout every aspect of our lives. “These measures have a commonsense appeal and could said to be popular or democratic. Embodied in charters for public service, the intention is to empower citizens by making the performance of public services more transparent” (Power, 2004a:773). It is in this vein that risk management is employed within Navy Command; the challenge is to identify what constitutes a genuine object for quantitative assessment, what should be handled qualitatively, and what should be left un-measured. For notwithstanding the criticisms of specific measurement systems, and the cultures of objectivity they represent, a generalised tolerance for numbers prevails. While it has become readily accepted that “there is more to managing than measuring, at the same time the latter retains its grip” (Power, 2004a:779). Power’s assessment is that “we probably measure more things in more detail than is functionally necessary and we do so for reasons that are often cultural and psychological, rather than technical” (2004a:780); organisations, including Navy Command, needs to guard against this tendency. Because an organisation has a risk management system, with control systems and employees

whose purpose it is to create management information, there is a danger that it may wish to control everything. Instead what is important is that the risks to the things of value (see section on model question 1) are managed in a way that meets the leadership's needs (see section on model question 5) – that is with appropriate tools (see section on model question 8) to facilitate informed decision-making that can be represented to the internal and external auditors (see section on model question 4).

8.7.3. Q7 and Q8: a framework of meetings, processes and tools

The second and third system design questions are "What framework of meetings, processes are required; when do I need to use diagnostic and when to interact?" and "What tools will best support each decision; is our IT up to it?" Both of these questions are drawn from risk literature reviewed in sections 3.5.2/3.5.3, as well as findings answering research question 2 on managing strategic and operational risks (chapter 6) and research question 3 on assurance of risk (chapter 7).

Findings on research question 2 (strategic and operational risk control) and research question 3 (on assurance of risk) provided a wealth of insight into the framework of meetings, processes and tools employed within Navy Command during the case study; with challenges of interplay between the various systems and protagonists exposed. In effect the risk management system was turning data into knowledge. Knowledge codification is the process of making experience explicit (Suddaby and Greenwood, 2001:938); knowledge commodification develops this by making that knowledge abstract such that it assumes a more "universal and portable form" (2001:939) which is what is required when a topic is to be discussed by a wide range of stakeholders, both internal and external to Navy Command. The findings showed that risk knowledge is exchanged within a framework, the purpose of which is to "coordinate various functions and sources of information to improve consistency and precision in addressing risks across an organisations" (Demortain, 2016:46).

The detail of Navy Command's risk framework was covered in chapter 6; central to the effectiveness of the framework are the 'tools' that are used to represent the risks being considered. Risk tools come in various guises, however they all seek to tap the 'folk risk' intelligence in an organisation; as such their contribution comes from facilitating consensus through a "process of challenge" (Power, 2007:80). The findings showed that risk tools, more often than not, provide visual calibrations using colour coding to capture management attention and prompt plans for risks with the highest impact and/or likelihood or combination thereof; they help create a conversation where none had

existed before (2007:81). Organisations however, find it difficult to articulate and implement those action plans; action columns in risk spreadsheets are often cosmetic (Sharman 2006); there has certainly been evidence of that during this case study, most notably the data contained with the ARM risk database. The challenge then is to represent the risks that the board needs to consider, without conveying too much of a hyper-rational sense of orderliness but facilitating board members to articulate their concepts of risk and to support governance monitoring of the agreed response plans.

Kewell and Linsley (2017:15) state that the "ability to assess risk, instill trust and foster reassurance represent timeless, quintessentially human properties"; Kydd (2000) claims that few social processes can take place without recourse to these interrelated considerations. Processes that assess and communicate risk must make use of the ability to tacitly identify, and then emote, responses to danger (Adams, 2004); the term Umwelt is used as an overarching descriptor (Partan and Mahler, 2002). For humans umwelt involves acting more on a collective basis, necessitating group interaction, reciprocity and trust (Partan and Marler 2002; Adams, 2004). Increasingly in organisations these interactions are facilitated by software solutions that promise enhanced interoperability and custom-built decision support facilities. Presumably the original business case for adopting ARM risk database software was couched in similar terms; and the case study revealed some views that 'fixing ARM' was the way to 'fix' the organisations risk management system. There is however a premium for adopting software into new ways of working: more human capital is involved in learning how to interface with the system, and knowledge is re-categorised in ways that increases rather than decreases risk opacity; thus an appropriate change effort is required including adoption of an appropriate organisational culture (Scott and Perry, 2006:4-9; Wagner et al, 2006; Bamberger, 2010). Without these enablers technological innovations become overburdened with a weight of innovation they can't meet and seen as scapegoats – along with the associated 'experts' – for failure (Higgs et al, 2000). The findings have demonstrated this is the case for ARM; it has become the scape goat of risk management's short comings. The evidence from the study suggests that rather than seeking a new improved software system the organisation would be better served investing time in creating a few pertinent tools (examples in chapter 6 findings were; strategic risk template interpretation guide; risk exposure over time waterfall schematic; methodology for trading within risk appetite) that will support the conversations they need to have; hence questions 7 and 8 in the risk design model.

8.7.4. Q9: The risk function

The final system design question "What role(s) is/are required from the risk function: business, facilitator and/or internal control?" is drawn from risk literature reviewed in section 3.5.5, as well as findings answering research question 2 on managing strategic and operational risks (chapter 6) and research question 3 on assurance of risk (chapter 7).

The findings of chapter 6 and 7 provide a wealth of evidence on how the risk function currently operates within the organisation's calculative and organisational culture; as the organisation's risk 'specialists' it is appropriate that a risk design model makes explicit reference to the role.

The literature reviewed showed that in order for risk leaders to maintain legitimacy and gain influence Mikes, Hall and Milo (2013) identify four competencies for them[44] to develop, based on research in two banks: (a) trailblazing new opportunities to use their expertise; (b) toolmaking, in order to develop and deploy tools that embody and spread expertise; (c) being a team player and using personal interaction to incorporate others' expertise and convince them of the relevance of your own contribution; (d) translation of management information, so that decision makers understand the complex content. Toolmaking and translation were found to have the highest impact; thus the risk management function should be constantly striving to assist decision makers with tools that support the discussions that they want to have, and to assist them in translating what the information is purporting to tell them. The findings of this case study reported in chapters 6 and 7 confirm the findings of Mikes et al (2013); offering to pilot new guidelines for briefing risks in holding-to-account sessions, as well as developing new management information waterfall schematics to assist Navy Board agenda discussions were both examples of gaining influence through toolmaking that assisted executive decision making.

The creation of roles within an organisation is part of the politics of 'doing something' in response to an organisational problem; creating a dedicated role is "part of problem definition and its subsequent management" (Power, 2005:139). In terms of risk, Lee (2000:3) suggests that what is required is:

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[44] Their article actually broadens the applicability of these competencies to all functional leaders; I merely limit it to those in risk as this is germane to this thesis.

> "someone who can coordinate the company's risk management efforts…it is more synthetic rather than an analytic task…a leader, facilitator and integrator. In this role, the [risk function] serves as a coordinator, more than a manager, of risks".

Thus while Navy Command currently has a risk manager who oversees the internal control accuracy of data, and the risk owners are performing the business role, design model question 9 prompts consideration of whether a facilitator is required to deliver the particular area of risk management required by the senior leadership.

8.8. Complementarity with other control systems

8.8.1. Q10: Alignment with other MCS

The first of two system complementarity questions "How well is risk management information aligned with that for other management systems (performance; financial)?" is drawn from management control literature reviewed in section 2.3.1, as well as findings answering research question 1 on management control systems use in portfolio risk management in chapter 5.

The literature review included an area of conceptual development of Simons' (1995) theory, namely that of the Levers being in balance and internally consistent (Grabner and Moers, 2013; Kruis et al (2016)). Kruis et al (2016:40) offer that to be in balance all four levers should be internally consistent and, while not necessarily of equal importance, each should align with the strategy and context. Internally consistent in the context of management control is defined by Grabner and Moers (2013: 408) as having congruence between control systems, such that there is interdependence between them. Thus through achieving internal consistency between risk and these other control systems the organisation will achieve a fit (Milgrom and Roberts, 1995:180) between controls that will give a coherent system. The findings in chapter 6 highlighted the importance of the risk control system being interdependent with the other key control system of performance and financial resource management, so that the decisions made within each system were informed by information held within the other controls; failure in this respect would result in risk based decisions being out of kilter with performance (and this missing the optimal contribution to the object of value at risk; see section on model question 1) and not being based on a resource-informed position.

8.8.2. Q11: Blending art with science

The second of the two system complementarity questions "How do we blend the art of strategic choices with science of underpinning operational data?" is drawn from risk management literature reviewed in section 3.3.3, as well as findings answering research question 2 on management of strategic and operational risks (reported in chapter 6).

The review of risk management literature considered Verhezen and Dequae's (2017:280) model for risk that involved the interplay of mindset and function on two risk types: strategic and preventable (which equates to operational in this case study). Their model showed how preventable risks, are treated by the risk management function identifying tolerable exposure positions, often with the mindset of an adherence to internal control governance; in contrast strategic risks can be viewed within the context of the organisation's overall appetite for risk, with the leadership artfully considering choices to deliver the best value. Verhezen (2010: 187) holds that "moving beyond a compliance-orientated organisational culture... is part of good corporate governance… [as it is] …informal mechanisms based on relationship building [that] are more likely to achieve moral excellence [in delivering the future organisation]". The findings in this case study showed that in managing their preventable risks Navy Command strove to adhere to compliance 'standards', in order to maintain the legitimacy of the underpinning data that informed both the Balance of Investment and subsequent prioritisation work on the Portfolio Management Group's top risks; but also that this reductive approach also posed a challenge in establishing a formal audit trail through to the more expansive 'art' approach of managing the strategic risks. As the case study concluded work was still in progress to better understand the linkages between preventable and strategic risk – the organisation acknowledging the importance, hence question 11 for model design.

8.9. People aspects

8.9.1. Q12: People perspective

The first of two people questions "What's the perspective of each stakeholder towards risk management; how will it shape our approach?" is drawn from management control literature reviewed in sections 2.3/2.4, as well as findings answering research questions 1 – 3 reported in chapters 5-7.

Firstly, management control theory is replete with considerations of the people element of management; chapter 3 reported on Tessier and Otley, (2012); Broadbent and Laughlin (2009) as well as Adler (2011) theories, concepts and frameworks that have at their heart the influence of the person – both manager and employee.

The findings of chapter 6 in answering research question 2 also provided insight into the different perspectives held by senior leadership and the employees within Navy Command on risk management, in particular on the quantitative 'science' and qualitative 'arts' approaches to managing risks. Whilst 'culture' is addressed under model question 6, it should be born in mind that it is people who are at the heart of a culture. Thus the need when designing and implementing a risk management system to consider model question 12.

Further evidence of yet another perspective was provided when answering research question 3 (assurance of risk) through the insight into the role of Non-executive directors (NEDs) in managing risks, and the role of NEDs in the risk oversight process. Thus model question 12, when considered, needs to encompass all levels of the organisation, both internally and externally, and executive and non-executive.

8.9.2. Q13: What is the risk appetite

The second of two people questions are "What is our risk appetite?" drawn from risk management literature reviewed in sections 3.5.5, as well as findings answering research question 2 on risk management in chapter 6.

One particular aspect of the literature review that was largely absent from the case study findings was an expression of a risk appetite. Slagmulder (2017:180) reports the formalisation of a risk appetite remains a fairly rare practice; as was observed in this research Navy Command, in keeping with the general practice in the wider MoD including its Head Office, did not have an appetite statement. Without this expression of 'appetite' it is hard to see how the organisation expresses how close it is to reaching or breaching its tolerance for the total amount of risk exposure on its four categories of impact (Finance; Capability; Reputation; Health & Safety); hence the requirement for question 13.

8.10. Time aspects

8.10.1. Q 14 – 16: What are the time requirements?

The final theme of the risk management system design model is that of time. Three questions relating to time are: "When does this risk need to be considered/scheduled for a follow-up review; How much agenda time is required for adequate discussion; and How much time do the risk function and owners need to prepare for the discussion?" The evidence is drawn from management control literature reviewed in sections 2.3.1, as well as findings answering research question 1 on management control in chapter 5.

The literature review of management control theory (chapter 2) revealed a specific issue relating to the use of Simons' (1995) Levers of Control theory: that of time constraints faced by top managers and its effect on their processing capability. Schick et al (1990:215) stated that "information overload occurs when the demands on an entity for information processing time exceed its supply of time". Monitoring multiple control systems can require tremendous managerial attention, thus top management has to choose where to focus their attention (Widener, 2007:776). Arguably time management by the senior leadership and the challenge of processing management information is the most pervasive of the findings from all three of the findings chapters. The sequencing of agendas (model question 14) to inform the next forum in the sequence of processing information, and provision of adequate agenda time (model question 15) to consider the information presented were reported both in management control (chapter 5) and management of risk (chapter 6) findings. The case study observations showed that time has a co-dependency on volume of management information presented; one example is the senior officer who hadn't had time to prepare for the meeting because the information had been presented in a 120-page document. Hence the final question of the model (question 16) on adequate preparation time.

8.11. A critique of the integrated approach

The 16 questions of the risk management system design model have an underlying implication that an integrated approach to risk management is achievable. This section considers the counter-thesis.

The concept of integrated risk management at the firm level, is one which promises more efficient use of scarce [resource]" (Power, 2009:849); he describes it thus:

> "risk management and mitigation processes should be explicitly related to organisational and sub-organisational objectives. Prescriptively, organisations should seek to identify all material risks to their objectives, [then] design controls and mitigations [to]produce a residual risk consistent with a target risk appetite, and monitor the entire process, making feedback adjustments as necessary. The model is that of a thermostat which adjusts to changes in environment subject to pre-given target temperature."

Power, however, sees integrated risk as flawed in three ways: (1) a singular organisational appetite for an enterprise-wide view is problematic.; (2) internal controls ideals instill an expansive aspiration for the management of everything (Power, 2004b); (3) it is incapable

of articulating and comprehending interconnected critical risks (Power, 2009: 850). The next three paragraphs address these flaws in turn. In terms of appetite, Scott (1998) sees it as over-simplified and lacking detail on the complexity through the use of a reductivist representation of the pertinent information (Robinson, 2007). At the heart of risk appetite is the amount of risk an entity is willing to bear; which can be rationally determined by senior management using a judgement that combines risk analysis (be that quantitative or qualitative) and risk management. The latter flawed with value-laden ideas of tolerance and acceptability (Power, 2009: 851).

In countering the problematic singular risk appetite, Hood (1996) imagines a pluralistic institutional model where there is conflict between different appetites held within different parts of the organisation that needs to be addressed. The process of appetite synthesis is undoubtedly a "significant senior management challenge" (Power, 2009:851), perhaps one that might be addressed in an organisation's "calculative culture" (Power, 2007; Mikes, 2009) through the introduction of an "appetising process" (Power, 2009:851). In sum, Power (2009:851) suggests that organisations are constituted by varieties of risk appetites which will change over time, thus a single 'risk appetite' statement may at best only "be an approximation of the collective view". However, if viewed as dynamic construction involving the "values and situational experience" of the organisation's business leaders (2009:854), it could provide the focus for an improved 'risk culture' through enhancing the quality of the debate.

The risk management system design model thus retains an explicit question on risk appetite; Navy Command's approach to risk management does not currently require one but the initial stages of a pilot on appetite gave early signs that it might be possible to operationalise this concept within the organisation in the guise of an ongoing appetising process.

The second criticism, that of an expansive remit to control everything, is due in part to a rational approach that was envisaged as a correction to "silo mentality" and so would enable more efficient use to be made of resource (2009: 851). However, integrated risk was introduced with a controls-based approach which demands an "audit trail" logic, and promotes a 'box checking' mentality, and which has been extensively criticised (2009:851). Power argues the need for a shift from rules based audit trail compliance towards the "critical imagination of alternative futures". The challenge as he sees it is to "expand processes which support interaction and dialogue, and de-emphasise due process" (2009:852). With clear focus from the leadership on what the purpose is of risk management (model question 1), the hope is that the organisation can avoid falling into the

trap of attempting to manage the risk of everything, and concentrate on that which it can, and should, manage.

The third challenge for integrated risk raised by Power (2009:853) is the assertion that integrated risk is "fundamentally unable to process and represent internally systemic risk issues, since that would require an imagination beyond [its] design parameters". He lays the reason for this at the feet of the large professional services firms who tend to operate "with standardised and abstract elements that are generic enough so as to be applicable to a wide range of entities" (2009:853). In many ways this speaks to the entire essence of the thesis' risk management design model; a model based on a contingency perspective where the leadership considers and reviews what it is they wish to achieve with risk management and then craft a system using the questions contained in the model to devise a system that is internally consistent within itself and with other management controls within the organisation.

In summary Power (2009) himself offers a number of aspects to consider in addressing the challenge of achieving an effective integrated approach to risk management; all of which can be assisted through the thesis' risk management system design model as proposed in this chapter:

- Avoid reductivist representations of oversimplified information, or acknowledge them for what they are: prompts for a debate;
- A collective risk appetite is useful in promoting a risk culture, however it should be seen a dynamic process that draws out the views and experience of the participants;
- Avoid 'box checking' and promote a culture which envisages futures;
- Promote interaction and dialogue;
- Avoid standard and generic packages: tailor it to your organisation's needs.

8.12. Summary

A summary of the findings sections and literature review sections that contributed to each question is provided here:

Question Number	Question	Relevant Literature Review section	Evidence from Findings section	Discussion covered in section
	Purpose of risk management			
1.	What of value is at risk?	3.4.1	6.3.3 6.7	8.6.1
2.	How do we make sense of the data to form a narrative?	3.4.2	6.7 6.3.3 6.5.3 7.2.2	8.6.2
3.	Are we acting in the best interests of the organisation?	3.4.3	7.4 8.2.3	8.6.3
4.	Can we demonstrate auditability of our approach to stake holders?	3.4.4	7.7 8.2.3	8.6.4
	Risk system design			
5.	Where is my mind in this; what do I want from risk management?	3.6.1	6.1 6.3.1 6.5.1 7.1.1 7.2.1 7.2.2	8.7.1
6.	What culture will best support our decisions: qualitative, quantitative or mixed?	3.5.4	6.1.2 6.3.2 6.5.2 7.1.1	8.7.2
7.	What framework of meetings, processes are required; when do I need to use diagnostic and when to interact?	3.5.2	6.1.3 6.3.3 6.5.3 7.1.2	8.7.3
8.	What tools will best support each decision; is our IT up to it?	3.5.3	6.1.3 6.3.3 6.5.3 7.1.2	8.7.3
9.	What role(s) is/are required from the risk function: business, facilitator and/or internal control?	3.5.5	6.1.4 6.1.3 6.3.4	8.7.4

Question Number	Question	Relevant Literature Review section	Evidence from Findings section	Discussion covered in section
9.cont	What role(s) is/are required from the risk function: business, facilitator and/or internal control?	3.5.5	6.5.3 6.5.3 6.5.4 7.1.1 7.2.1 7.2.2	8.7.4
	Complementarity with other control systems			
10.	How well is risk management information aligned with that for other management systems (performance; financial)?	2.3.1	5.2.3 5.2.4 5.2.5 5.2.5	8.8.1
11.	How do we blend the art of strategic choices with science of underpinning operational data?	3.4.3	6.3.2	8.8.2
	People			
	What's the perspective of each stakeholder towards risk management; how will it shape our approach?	2.3.2 2.3.4 2.4	5.3.3 5.3.5 5.3.6	8.9.1
13.	What is our risk appetite?	3.5.5	6.5.3 6.6	8.9.2
	Time			
14.	When does this risk need to be considered/scheduled for a follow-up review?	2.3.1 2.3.1	5.2.4 5.2.4	8.10.1
15.	How much agenda time is required for adequate discussion?	2.3.1	5.2.4	8.10.1
16.	How much time do the risk function and owners need to prepare for the discussion?	2.3.1	5.2.4	8.10.1

Table 8-1: Record of literature, findings and discussion relating to questions contained within risk management design model (source: the author)

9. Conclusion

The thesis opened with the context of the Royal Navy as an organisation of national significance; one that was instrumental in allowing the government to fulfil its role of *governing* its citizens. In order to undertake its duties responsibly the navy needs to manage its risks; this thesis aims to analyse the risk management systems and processes and, as a professional doctorate, to suggest improvements where appropriate. The extant literature offered insight from both management control and risk management perspectives, but the review of this literature revealed gaps in the knowledge including: applicability of management control theory in the management of risks; the frameworks, tools and processes that work within this specific organisation; and the influence of the role of the risk function, culture and leadership on the effectiveness of the organisation's ability to control its risks; and how risk management is enacted and should be designed. A case study approach was adopted as a research methodology to address the four research questions.

This concluding chapter summarises what it is to be an organisation of national significance; the findings of the first three research questions on how risk management was conducted, and the discussion on how a risk management system should be designed. Practical and theoretical implications of the research are recorded, ahead of the final section considering the limitations of the study and potential avenues for future research. The chapter is structured thus:

9.1. Introduction

The thesis offered that organisations are of national significance when they contribute to government fulfilling its role of governing the nation. Dean (1999:18) suggests that governing involves the "direction and conduct of the governed"; and thus it can be referred to as the art of government "which requires craft, imagination, shrewd fashioning, the use of tacit skills and know-how, [and] the employment of intuition". Therefore, the study of governing is the study of "organised practices through which we are governed and through which we govern ourselves". This study has researched the management control

associated with the *organised practices* pertaining to risk management in one particular organisation of national significance: The Royal Navy.

9.2. Summary of results

9.2.1. RQ1 How are management control systems used in portfolio risk management?

The first research question was: How are management control systems used in portfolio risk management? Palermo (2017) stated that use of MCS in risk management has not been explored; this thesis has shown how management control systems theory, in particular Simons' (1995), and Ferreira and Otley's (2009) work has applicability to the practice of risk management through providing insight into one particular context of national significance – the Royal Navy. As well as the gap identified by Palermo, the thesis also provided evidence of the role of complementarity, thereby providing further support for the work of Mundy (2010), Grabner and Moers (2013) and Kruis et al (2016) on benefit of complementarity and internal consistency; in this case, to avoid risk management being an unwelcome adjunct. A reflexive approach (see section 4.8 for a detailed discussion on how this approach led to the development and adjustment of research questions and their interpretation) to research question 1 revealed the complexity of management control, drawing the thesis towards the need for a framework that encompassed both formal and informal controls and the perspectives of different elements of the workforce; Adler (2011) appeared to fit the purpose. The research also supported the contingency theory approach to studying management control; supporting Chenhall (2003) and Woods (2009) findings and identifying a discrete aspect of organisational structure, namely leadership, that merited explicit reference due to its impact on the other aspects of risk management systems design, and thus the *governing* of the organisation.

A summary of the key findings is presented in Table 5-3.

9.2.2. RQ2 How are strategic and operational risks controlled?

Central to an organisation's leadership success in *governing* is the management of uncertainty and the coordination of resources to control strategic and operational risks that is consistent with the vision and the strategy; decision-making and risk identification are key precursors for success (March and Simon, 1958). This thesis has provided insights into how Navy Command's leadership has adopted a "mindful" approach (Linsley and Kewell, 2015) to leading on risk, which influenced a pragmatic calculative culture through a framework of processes, meetings, controls and tools. In terms of

strategic risks (reported in section 6.2) perhaps the most revealing analysis was on the role of the risk function (Mikes, 2011) and the tools they provide (Hall et al, 2011); this revealed that a risk function facilitator (Mikes, 2011; Kaplan and Mikes, 2016) not only helped Navy Board members identify their strategic risks, but also as an engaged tool maker (Hall et al, 2015) facilitated better discussions between risk owners and those responsible for response plan actions. Of note the DBA research programme contributed two new tools into Navy Command (reported in section 6.2.3: risk 'exposure assessments' and 'risk over time waterfalls') that enhanced the senior-level dialogue regarding strategic risks.

Findings on risk to strategy (reported in section 6.4), in terms of risk management system design, showed that success was contingent on a combination of: appropriate roles of the risk function (Kaplan and Mikes, 2016:13); culture in managing risks (Mikes, 2009:20) with evidence of two cultures existing side-by-side (Mikes, 2011:242); and use a suitable framework for engagement on risk work (Mikes and Kaplan, 2015:39-40) – enacted by a "mindful" leadership (Linsley and Kewell, 2015). It is the contention of this thesis that the risk system design element of leadership mindfulness is a leading contingent variable that determines how the other facets of system design make their contribution.

Findings on the control of operational risks revealed the many challenges associated with making resource-informed decisions, not least of which again was appropriate tools (Hall et al, 2015). In this study Navy Command was still refining its approach to prioritising resources to mitigate operational risks. With the senior leadership having shown interest in developing a methodology involving operationalising a risk appetite through conducting as a pilot study, this development was curtailed due to programmed termination of case study access.

A summary of the key findings is presented in Table 6-5.

9.2.3. RQ3 How is risk management assured in Navy Command?

In answering research question 3 (How is risk management assured in Navy Command?) the findings have provided insights into both the purpose and system design of risk management within Navy Command. They reveal an organisation whose leaders believe that the purpose is to take a strategic view of what is of value and then mitigate the risk to achieving it; an organisation that strives to deliver a narrative that makes sense of uncertain information; a narrative where the leadership acts with a moral compass to take a long term strategic view, and then endeavours to overcome the short

term challenges in such a way as to be consistent with that view. It is another example of how the leadership is using Simons' (1995:34) beliefs system to convey their values, purpose and direction as a social control of strategic and operational outputs in the spirit of Tessier and Otley's (2012) development of Simons' (1995) theory. They are, thus, findings of an assurance system which is demonstrably auditable for the stakeholders, but one that is motivated by more than just ticking boxes.

A summary of the key findings is presented in Table 7-1.

9.2.4. RQ4 What should be the framework for portfolio risk management in Navy Command?

The thesis offered a model, shown in Figure 8-2, comprising five themes to address when designing or reviewing the risk management system for Navy Command; namely: (1) The purpose of risk management; (2) System design considerations; (3) Complementarity between control of risk and other controls in the organisation; (4) People aspects; and (5) Time considerations. The model was developed to provide structure when designing a bespoke risk management system for an organisation, one that is integrated to other facets of organisational life rather than just the 'of-the-shelf' risk management methodology offered in practitioner literature (OGC,2007 and subsequent editions being the example used by MoD/Navy Command). The thesis discussed previously, in chapter 1 on the public sector context, that formal risk management processes, techniques and roles have become increasingly diffused in the public sector (Fone and Young, 2000); whereas private-sector-derived approaches constitute a 'new world of generic risk management' (Hood and Miller, 2009:3) that are considered to be an aspect of good governance (Palermo, 2014). New risk management has two features to emphasise: (1) it is generic and abstracted from specific circumstances in order to convey ideas of formal procedure and order (Power, 2007) and comprises 'go anywhere frameworks that aim to standardise and formalise organisational processes' (Hood and Miller, 2009:3); and (2) it is integrated and holistic with an implication of achieving a shared corporate approach to identifying and managing risk across the organisation (Palermo, 2014:324).

The model developed in this thesis address the challenges of 'new' risk management; challenges raised in the literature review section 3.6, summarised here by Mikes' (2012:19) assertion that risk management guidelines:

(1) talk to the high ground but fail to address the complexity;
(2) are incongruous;

(3) have context-dependency;

(4) ignore the politicised nature of real organisations.

The model developed in this thesis acknowledges those challenges and addresses them by:

(1) incorporating the complexity from the models of Ferreira and Otley (2009) and Alder (2011);

(2) addressing the requirement for congruity with other management systems through explicitly highlighting the concept of complementarity from Kruis et al (2106) and Grabner and Moers (2013);

(3) acknowledging the importance of context through inclusion of a contingency perspective drawn from Chenhall (2003) and Woods (2009);

(4) providing 'political' input by explicitly including consideration of the different stakeholder perspectives, and to an extent the implications of time and agendas.

Thus, when Palermo (2014:325), states that in the public sector "regulatory initiatives formalise generic processes to be adopted…but public sector organisations need specific risk management tools that address the organisational complexity of public service delivery"; he suggests "there is a need to examine the organisational context in which risk management is enacted". The model in this thesis addresses those needs, as it was derived from taking a management control perspective for the research into one public sector organisation of national significance, thus very much situated in organisational life and with the actors – the management and other employees - brought into focus from drawing on Tessier and Otley's (2012) management control framework. Having examined, and developed new, risk management tools for use within that organisation the model also makes explicit the need for the specificity Palermo (2012) mentions.

With the integrated risk management design model of Figure 8-2, the thesis offers a model as a new way of considering how an organisation approaches risk management through making explicit the intrinsic benefit of the various components of effective risk management: (1) clarity of purpose and the need to know what of value is at risk; (2) ensuring that the selected risk framework and role of the risk function is consistent with the mindset of the leadership and the risk culture they create; (3) to ensure that the various control systems in use are 'complementary' to each other; (4) that the perspectives of those involved, including their appetite for risk are understood; and (5) and that time, that most precious of commodities, is factored into the system. In short,

an organisation should use frameworks, control systems and expertise in a way that is appropriate to the 'object' at risk. By depicting this through the use of a model it is intended to help convey the knowledge gleaned from the research in a way that it may be possible for others to extrapolate and test within their own fields of expertise.

9.3. Research contribution

This thesis makes contributions to both practitioner and academic communities, and thus has theoretical and practical implications.

9.3.1. Theoretical implications

For the academic community there are contributions in both theoretical and methodological implications; without wishing to limit the richness of the material contained herein, I draw attention to those that are perhaps most salient:

- The benefit of complementarity in an organisation's management control systems; thereby providing support for Mundy (2010), Grabner and Moers (2013) and Kruis et al (2016) as discussed in section 8.8.1 (complementarity of risk management with other management control systems).
- The various roles that the risk management function can perform, and the importance of their contributing tools and understanding that the decision makers find useful if they are to be influential. (Mikes, 2009; Hall et al, 2015); as discussed in sections 8.7.4 (risk function) and 8.7.3 (risk framework of meetings, processes and tools).
- The addition of the role of leadership's mindset as a fourth contingent factor for public sector risk management as proposed by Woods (2009) and defined by Linsley and Kewell (2015); as discussed in section 8.7.1 (mindset of the leadership).
- The insight provided into contributing knowledge by conducting this investigation using a reflexive approach for a qualitative interpretive case study, and the juxtaposition between reality and knowledge (Walsham, 1995; De Loo and Lowe, 2017;). A more detailed discussion can be found at sections 4.2 (on assumptions about knowledge and the use of theories), 4.5 (for the research design considerations that arise from the assumptions on knowledge), 4.7 (on the criteria chosen by which to assess the quality of the research) and 4.8 (for the use of reflexivity to research shortcomings).

9.3.2. Practical implications

For practitioners the thesis contains the key implications of:

- The need to bear in mind the object that is at risk and the value it provides the organisation; by this means risks – both negative and positive opportunities – can be brigaded together for an object(ive) and a priority decision made that best supports achieving it in the context of other objectives to be achieved. A fuller discussion is covered in sections 8.6.1 (risk in relation to what), 8.6.2 (sense-making of that object/risk in the context of the wider organisation), 8.6.3 (while acting in the best interest of the organisation), and 8.8.2 (blending 'art' with science where necessary).
- Management control of risk should not be performed in isolation, as this approach doesn't have the context of other valuable management information on performance and resources; rather a systematic approach, which employs 'complementarity', will provide senior decision makers with a more holistic set of information and allow the implications of changes in performance, resource or risk positions to be better understood. As discussed in sections 8.6.2 (sense-making) and 8.8.1 (aligning risk management with other management control systems).
- The mindfulness of the leadership towards risk is a determining factor on the effectiveness of the overall model adopted by an organisation. A nuanced approach will accommodate the various styles and sub-cultures within the organisation, but such freedoms come at a price for being able to demonstrate 'auditability'. This thesis argues that a preferable art of leadership is one which attempts to move the organisation's employees away from a mindset of risk management 'compliance' towards an understanding of the leadership's appetite for risk and supporting strategic choices. The fuller discussion on this is covered in sections 8.7.1 (leadership's mindset), 8.7.2 (calculative cultures), 8.6.2 (auditability) and 8.9.2 (risk appetite).
- Finally, perhaps the most notable contribution is that of a new model to assist practitioners in the design of their risk management systems; a model born out of the synthesis of the management control models reviewed in chapter 2 with the knowledge gained through reflexive case study research within the Navy Command organisation. The need for a model is discussed in section 8.3; the model defined in section 8.5, and the criticisms of an integrated approach which it overcomes in section 8.11. For a complete understanding of the theory and

evidence that underpins the model, readers should refer to the summary table in section 8.12.

9.3.3. Post script thoughts on the sustainable impact of the new risk model

By way of a post script I offer some thoughts on the sustainable impact of the research I have undertaken, and in particular the new risk model offered in section 8.5.

Having worked in the head office of Navy Command for several years on two occasions, I am aware of the somewhat transient nature of most of the processes in that building. Most employees work there for a couple of years then move on; rightly focused on outputs of generating and delivering today's Fleet or developing and delivering the next generation, they adapt processes to best suit the needs of the hour.

The design of the risk management system that I helped create over the course of the DBA was practical and applicable under those conditions, however it may not endure in its' present form for long; but I do believe that the depth and the breadth of 'risk' conversations I had over the three years of research mean that Navy Command is irrevocably moving towards a more integrated risk management system than previously used. The model is an attempt at codifying the key lessons from those three years, albeit in a very shortened form of a summary; for a reasonable comprehension of what the model is endeavouring to depict at least chapter 8 of this thesis needs to be read – and ideally much more.

I take encouragement from two examples of change, which lead me to believe that risk management within Navy Command is moving towards a sustainable better place. Firstly, in the summer of 2018 a risk specialist was recruited to act as the senior advisor on board-level risk, with the additional duty of overseeing performance management reporting. In this one appointment Navy Command has now fused two of the three essential management information systems, plus provided additional human resource for the highly effective risk facilitator role – Questions 9 and 11 in the model. Secondly, the Portfolio Management Group under the chair of COSHQ now sits in Risk Committee mode, providing focused risk advice on objects of value to the Navy Command Operating Board and in turn the Navy Board. They can address 'What of Value is at Risk? (Question 1) while the Audit Committee advises on sufficiency of auditability (Question 4).

Three of the model's five elements are thus in hand; I mention in the further research section that I believe an integrated risk system needs a risk appetite statement that can be operationalised, and this remains true for Navy Command. The final requirement for

the new risk management design is for the leadership to remain alive to the need for sufficient and timely agenda time for risk.

9.4. Limitations of the study

There are three main potential limitations I envisage with this thesis. Firstly, the research conducted in this case study required privileged access to material of the highest classification and sensitivity, commensurate with the nature of the contribution to national Defence undertaken by this organisation of national significance. Thus with the utmost imperative not to inadvertently disclose information of national importance it is possible that the author has erred on the side of caution and not divulged detail that might be expected from a case study into an organisation's risk management approach.

Secondly, the research approach of reflexive interpretivism required the author to reflect back to the participants his interpretive findings of what he had observed in order to help assess the validity of my work (see Reissman criteria for validity in next section). The work is thus potentially open to accusations of being 'tampered with' and altered to give a more favourable view of participants to help their careers. In addressing this, all I can state is that never once was I asked to alter my findings to give a different perspective; and indeed, I trust that the fairly bleak portrayal of where the risk management system was at the beginning of the case study period lends support to the thesis giving a 'warts and all' account.

Finally, the third limitation is one of generalisability, or transferability of the findings to other organisations. It must be acknowledged that the interpretation of the 'data' collected within this case study is very much influenced by the context of the organisational setting: public sector and delivering security on behalf of the nation. In section 9.6 below on recommendations for further research it is suggested that the findings of this case study could be tested within other organisations of national significance to determine their wider transferability.

9.5. Assessing the quality of the research

The quality of the findings, analysis and discussion in this thesis can be judged against the Golden-Biddle and Locke (1993) criteria of:

- Authenticity: through the thesis having demonstrated a vitality of a lived experience;
- Plausibility: how well the thesis connects to the readers' own experience;

- Criticality: how well the thesis prompts readers to challenge their assumptions and beliefs about risk management, its purpose and the constituent parts of an effective risk management system.

In terms of assessing the validity of my work I ask that Reissman's (1993:64) criteria, shown here, may be used:

- Persuasiveness: readers of the thesis report that is seen as 'reasonable and convincing'; where theory is supported by the account given, and alternative interpretations of the data are considered.
- Correspondence: I took back the 'results' to those being studied, to find out what they thought of the work as an interim report; the responses were favourable and encouraging.
- Coherence: my thesis content is consistent with how I used that data and wrote it up; and how I used my thesis to inform selected audiences is consistent with the contents.
- Pragmatic Use: will be demonstrated by the extent to which my thesis becomes the basis for others' work;

9.6. Suggestions for further research

There are a number of suggestions for further research arising from this study. Firstly, the applicability of the three new products delivered in this research – risk management system design model; risk exposure statement; and risk mitigation over time 'waterfall' model' - could be researched in other organisations of national significance, or indeed other large organisations. This then would be a test of whether the findings in this thesis are potentially generalisable or transferable to other organisations.

In terms of researching the system design model (Figure 8-2), future research could look at any one of the five themes[45] contained in the model, but perhaps the most novel aspect is the thesis' proposal of a fourth variable of *leadership* to Woods' (2009) public sector risk management framework; and thus one that might merit closer examination. Future research of this type would be useful for understanding the nuances that might attach to each theme.

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[45] (1) clarity of **purpose** and the need to know what of value is at risk; (2) ensuring that the **design** of the selected risk framework and role of the risk function is consistent with the mindset of the leadership and the risk culture they create; (3) to ensure that the various control systems in use are **'complementary'** to each other; (4) that the perspectives of the **people** involved, including their appetite for risk are understood; and (5) and **time**.

One line of investigation that did not reach maturity in this case study was a methodology for producing pragmatic risk appetite statement(s) that followed the work of Quail (2012). Undoubtedly Navy Command were interested in having a tool that would assist with decision-making on operational risks, but the research programme drawing to a natural conclusion precluded this work being taken forward to mature pilot study; this would be helpful in further developing risk management capabilities.

10. References

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11. Appendices

11.1. Appendix 1: Organisation Structure for Navy Command

1. The high-level organisation structure shown in Figure 11-1 shows the line management relationships for officers of Flag rank[46].
2. Full Command of the Royal Navy is vested in the First Sea Lord (1SL) as a 4* Admiral.
3. At 3* level there are 2 divisions:
    a. Fleet Commander who exercises Full Command (delegated by 1SL) of all Fleet Units, Battlestaffs, the Royal Fleet Auxiliary, Fleet Air Arm and the Royal Marines with the aim of ensuring the generation of RN units for task in accordance with the Command Plan, and for the operational effectiveness.

    b. Second Sea Lord (2SL) who leads the Strategic Headquarters of the Royal Navy to deliver Navy Command outputs as determined by the Navy Command Plan and available resource. 2SL is also the Royal Navy's Principal Personnel Officer (PPO) responsible for maintaining the Moral Component of the Service now and in the future.

4. 2* directors are a layer of management that exercises strategic oversight and portfolio-level responsibilities reporting to the 3*s in Navy Command, whilst interfacing externally with a variety of authorities outside the Command. A summary of their responsibilities is shown in Table 11-1 with fuller explanations provided below:

2*	**Short Summary of Areas of Responsibility**
ACNS(Pol)	Navy Board business. Sets RN Strategy. Liaison with Head Office. Regional Forces, Media and Communications. RN engagement with international partners.
FD(N)	Portfolio Office. Resources and Plans. Finance. Governance. Executive Business.
ACNS (Cap)	Develop Function. Maritime Capability. Capability Sponsor.

[46] A rank held by a person who is either an Admiral, a General in the Royal Marines, the Chaplain of the Fleet or an equivalent grade in the Civil Service.

COS HQ (currently dual rolled with ACNS (Cap)	Coordinate across NCHQ. Pan-HQ information management and prioritisation. Safety policy and Senior Security Risk Manager. Chair Portfolio Management Group of 1* officers
ACNS (Pers) / NAVSEC	Personnel. Flag Officer (Reserves).
ACNS (Spt)	Logistics and Infrastructure. Engineering Support. 2* Command of the 3 Naval Bases
ACNS (Ships)	Deliver Function. Capability management of ships. Operating Duty Holder for in service ships.
ACNS (A&C)	Deliver, Generate and Assure Maritime Operational Aviation Capability. RN Operating Duty Holder for Aviation & Air Operating Authority.
ACNS (SM)	Representation in Scotland. In Service Capability Management of submarines. Operating Duty Holder for submarines.
FOST	Training. Individual, unit and platform collective training. Recruiting.
COMOPS	Command of the Flotillas, 3 CDO Bde RM and all subordinate Units Force Generation and current Operations
CMF	Deployable 2* Commander.
CAF	Deployable 2* Commander.

Table 11-1: Summary of 2* responsibilities

a. Finance Director (Navy) FD(N) who is the Senior Finance Officer, charged with the integrity of the financial system and processes relating to resource consumption within Navy, and the authoritative source of financial management advice to 1SL.
b. Assistant Chief of Naval Staff (Policy) (ACNS Pol) who leads the development of the Royal Navy's policy position and the Service's strategy to reach the Future Naval Vision, incorporating Strategic Communications, International Engagement and national influence. ACNS(Pol) supports the Navy Board, both collectively and individually, and 1SL in particular, on matters that are within 1SL's management authority and which extend across external boundaries.

c. Chief of Staff Headquarters (COS HQ) is a dual-hatted responsibility with the role of ACNS Capability (ACNS Cap). The role is responsible to the Second Sea Lord (2SL) for the overall direction and coherence of staff effort. With FD(N), COS HQ leads the Balance of Investment (BoI) activity through the Portfolio Management Group (as chair) to agree coherence and affordability for options to be presented to the Navy Command Operating Board.
d. ACNS Capability (ACNS Cap) is the capability sponsor for all maritime Capabilities throughout their life and is responsible for ensuring that the capabilities the Navy procures are sufficient to deliver success on operations today and in the future in response to changing threats.
e. ACNS Ships is responsible classes of future vessels, as well as through life management of those currently in-service, in order to deliver Command Plan objectives and outcomes.
f. ACNS Submarines (SM) is responsible for the in service capability management of submarines including sponsorship of specified classes of future vessels, as well as through life capability management of those currently in service and warfare development necessary to deliver Command Plan objectives and outcomes.
g. ACNS Aviation, Amphibious Capability and Carriers (A&C) holds policy and regulatory responsibilities for managing risks to a level that is as low as reasonably possible level, while providing authoritative guidance and/or advice to subordinate commands. This includes working closely with ACNS (Ships) for Ship-Air Integration.
h. ACNS Support (ACNS Spt) is responsible for assuring the delivery of specialist support solutions across Navy Command.
i. ACNS(Personnel) is responsible for ensuring that there are sufficient, capable, motivated and suitably deployed people in the Naval Service to man the Fleet and meet the needs of Defence employers, both now and in the future. A secondary responsibility held is that of Flag Officer (Reserves) which directs the management of the Maritime Reserves.
j. Commander Operations (COMOPs) has responsibility for the operational command of all Royal navy units in Fleet time, when not they are not under the operational command of the Chief of Joint Operations (CJO).
k. Flag Officer Sea Training (FOST) is responsible to 2SL for the governance and delivery of recruiting and individual training for Naval Personnel, and to

Fleet Commander for unit and platform collective training across the Royal Navy.

l. Commander United Kingdom Amphibious forces (CAF) as Head of Fighting Arm acts as Senior Amphibious Advisor to 1SL, Fleet Commander and 2SL; responsible for providing leadership and management oversight of the Royal Marines (RM) in regard to the Conceptual Component (how we fight), Moral (why we fight), and Physical (what we fight with) Components of the RM Capability. In the associated role of Commandant General Royal Marines (CGRM) there is responsibility to advise 1SL, Fleet Commander and 2SL on RM careers, structures and Regimental matters. Finally, as CAF, to command UK, Allied or Coalition forces worldwide, as a Joint, Maritime or Land Component Commander when assigned under directives issued by CJO, Fleet Commander or other Commanders.

m. Commander United Kingdom Maritime Forces (CMF) is responsible for the generation, validation and deployment of Maritime command and control and is to be prepared to command UK, Allied or Coalition forces worldwide, as a Joint or Maritime Commander when assigned under directives issued by Chief of Defence Staff (CDS), CJO or the Fleet Commander.

5. Each 2* director may have a number of 1* officers reporting to them who will oversee staff activity within that directorate ensuring that it is consistent and coherent with work being progressed in other directorates.

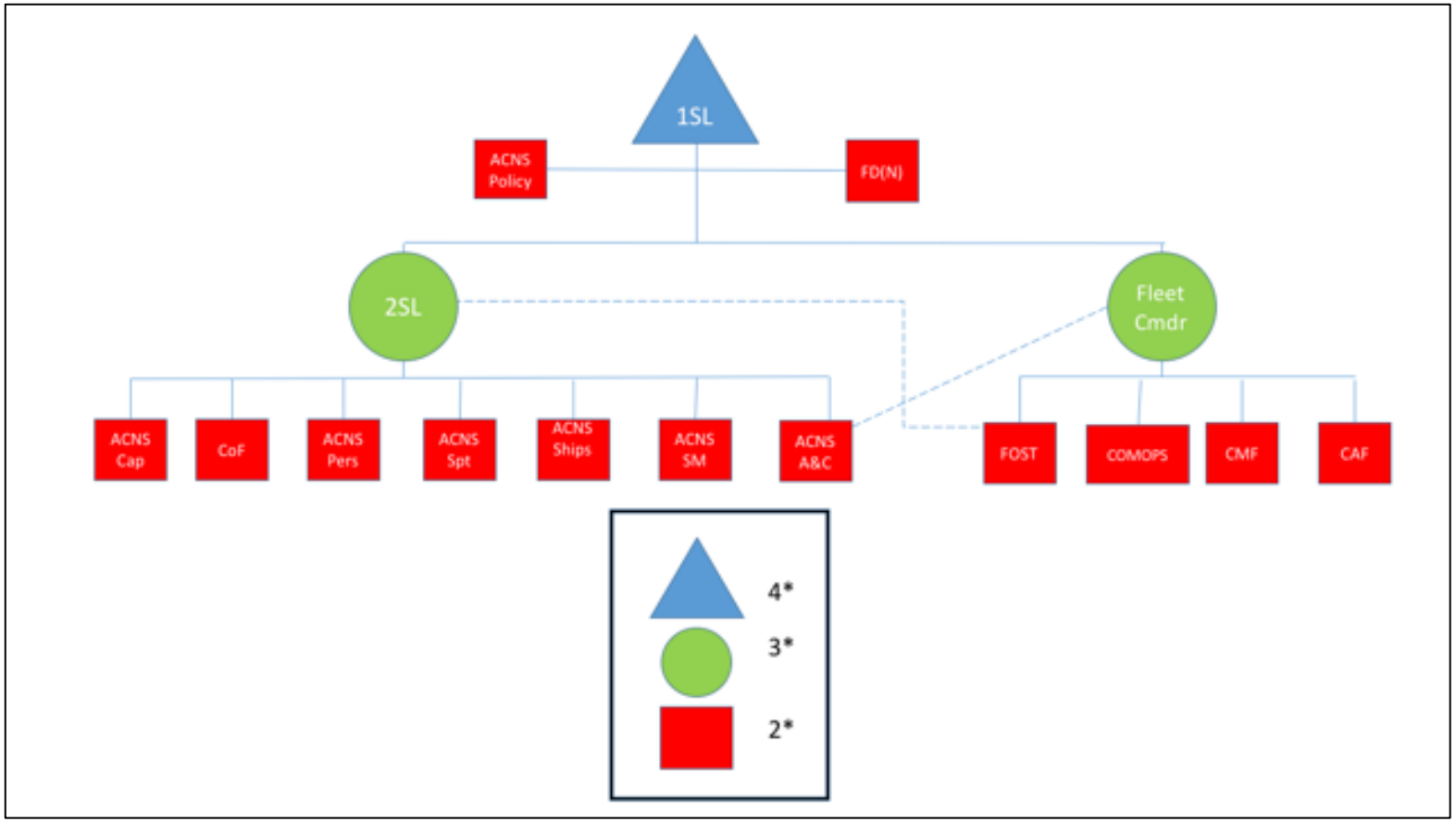

Figure 11-1: Line management of key leadership roles in Navy Command

11.2. Case Study Database format

Serial	Quarter	Date	Event	Consent Form	Authoriser	Themes	Data Source	Data Note	Data Note No.	Data Note Remarks	Memo	Memo No.	Memo message
1	1	13/07/2016	**NCOB**	Yes	Skittral	Attention	Observation	20160713_NCOB Observer Form	1	Focus is on Ouput Risks	20160713_Memo 001_NCOB meeting 13 Jul 16_Final	1	**Board is learning how to give optimal attention to the risks it has oversight of; through inteeractive discussions of the diagnostic data it is presented with.**

Table 11-2: Case Study Database (as devised by the author)

11.3. Template used to record data

Data Note (0)** **Case Study Database number (0**)** 2016****_DBA Data Date created: ** *** 2016 *** MEETING ** *** 2016**	
Purpose	
Attendees	
Participant Observer Consent	
Event Outline	
Outline continued	
Themes	
Follow Up	
Remarks	

Table 11-3: Template used to record data (from the author)

11.4. Template used to record interpretations of event data

Memo ( ) **Date Created:** **Case Study Database Number ( )** **Data Source:** **EVENT:** **What happened? (200 words)** **How can that description be improved by using a concept?** **What other data is needed to make the analysis more solid?** **What further reading is required to improve the analysis?**

Table 11-4: Memo template used to record interpretations of event data (from the author)

11.5. Template used to record personal thoughts on research

Memo (***)
Field Note (Number)
Case Study Database Number (**)
Date created:
Period: (date) to (date)
Method Notes (*data collected; who, where, when*)
Theoretical Notes (*hunches, hypotheses connections critiques of what I'm doing, seeing*)
Personal Notes (*feelings about the research, who I'm talking to, doubts, pleasures*)

Table 11-5: Field Note template used to record personal thoughts on progress of research (from the author)

As detailed above in section 5.5.1, common to all three templates was a footnote that served as an aide-memoire of the themes that were of interest to the researcher, as prompted by literature review.

11.6. Semi-structured Interview Protocol

An interview guide, or protocol (Kvale, 1996:129) was produced for use in the conduct of semi-structured interviews, primarily to help answer Research Questions 1and 2. An interview protocol was devised based on reflections from initial literature review, which was reviewed and updated for each subsequent interview in order to align with the skills and expertise of that particular interviewee and, where appropriate, explore a subject of interest raised by a previous interviewee. All interviews were conducted after a signed Consent Form was obtained; this was incorporated into the opening part of the interview where the scene was set by the researcher outlining the purpose of the study.

An example of the initial Interview Protocol is shown here in Table 11-6:

This Version:	Research Q1 amended in light of prep for Interview 1 (CRO)			
Topic	**Interview Question Number**	**Interview Question**	**Memo Number**	**Research Theme**
1 Overview of the Risk Management Approach in Navy Command: the annual cycle	1.1	How does information on risk 'flow' through Navy Command into the MOD?		
	1.2	Where are decisions made on risk within Navy Command?		
	1.3	What MCS are present in Navy Command?		
	1.4	Do they meet diagnostic criteria (Table 2)?		
	1.5	How do senior managers give attention to diagnostics (Table 3)?		
	1.6	How is Navy Command risk policy and strategy disseminated?		
	1.7	How is the scope of Navy Command risks defined?		
	1.8	How are boundaries set (Table 8)?		
	1.9	How do you think Navy Command's use of diagnostics might be flawed? [Table 4]		
	1.1	How do any of the MCS used in Navy Command meet interactive characteristics and conditions?		
	1.11	How do you see managers and staff roles in interactive and diagnostic systems? (refer to table 7)		
	1.12	How do any of the MCS used in Navy Command define strategic boundaries?		
	1.13	How do you see any of the managers and staff's roles and responsibilities in conveying strategic boundaries? [prompt with Table 9]		
	1.14	How do you see any of the managers and staff's roles and responsibilities in conveying beliefs? [prompt with Table 10]		
	1.15	How do you see Internal Control working within Navy Command regarding risk management [prompt with table 11]		
	1.16	Are there any other aspects of how Navy Command manages risk that we've not discussed that you feel is important?		
Topic	**Interview Question Number**	**Interview Question**	**Memo Number**	**Research Theme**
2. Risk Management by Risk Owners: managing a risk to a tolerable position	2.1	How was the risk first identified as 'worthy' of senior management attention?		
	2.2	How do managers interact in managing the risk (Tables 5 and 6)?		
	2.3	What are the roles of managers and staff in using diagnostics for, and interactions on a risk (Table 7)?		
	2.4	How is the context for your risk and objectives provided?		
	2.5	How has the target risk position been agreed - the belief about the risk?		
	2.6	How is the management information used to aid decision making on the risk – the diagnostics available to support decision making?		
	2.7	How are decisions made on risk in your area?		
	2.8	How are the response plan owners engaged in forming a mitigation plan - what interactions take place?		
	2.9	How are the limits for escalation set and communicated - the boundaries for		
Topic	**Interview Question Number**	**Interview Question**	**Memo Number**	**Research Theme**
3. Attention: Use of Levers to enhance Return on Managers' time and effort	3.1	Do employees know what opportunities do not contribute to the organisation's strategic mission?		
	3.2	Do managers know what it would take for the organisation to fail?		
	3.3	Can managers recall their diagnostic measures with relative ease?		
	3.4	Is the organisation free from drowning in paperwork and process?		
	3.5	Do employees watch the same performance measures that the bosses watch?		
	3.6	What's the boss interested in; are employees watching it too?		
	3.7	If an employee saw something relevant:		
		What would they do?		
		Who would they tell?		
		What would provide them early warning?		

Table 11-6: Example of Semi-Structured Interview Protocol (from the author)

11.7. Consent Forms for Meetings and Interviews

Case Study Database Serial (0**)

A Case Study into Risk Management in Navy Command – Information for Participants

General Information (to be distributed to all participants)

There is a RN-sponsored research study being conducted by Captain Thomas alongside, and integrated with, a change programme within Navy Command to improve risk management practices; as such there are a number of routine meetings that you attend in the course of your duties where Captain Thomas will be observing proceedings. The information obtained will be treated in-confidence, except that with your permission anonymised quotes may be used. Neither your name nor any other personal identifying information will appear in any publications resulting from this study. The information gathered will only be used for the above purposes, and ahead of the study findings being published there will be an opportunity to review the draft to ensure no sensitive information is contained therein.

Meeting Consent Form (to be used for all meetings being observed)

Title of meeting:

I, as chair/secretary (delete as appropriate) of the above meeting, confirm:

- I have been informed of and understand the purposes of the study;
- I have been given an opportunity to ask questions;
- I understand I can ask the researcher to withdraw at any time without prejudice;
- Any information which might potentially identify me or other participants of the meeting will not be used in published material;
- I agree to the researcher named below to observe this meeting for the purposes of the study as outlined to me.

Researcher requesting observer status: R K Thomas

Participant name:

Participant signature

Date.

Figure 11-2: Template for written permission to observe a formal meeting (from the author)

A Case Study into Risk Management in Navy Command – Information for Participants

General Information (to be distributed to all participants)

There is a RN-sponsored research study being conducted by Captain Thomas alongside, and integrated with, a change programme within Navy Command to improve risk management practices; as such there are a number of routine meetings that you attend in the course of your duties where Captain Thomas will be observing proceedings. The information obtained will be treated in-confidence, except that with your permission anonymised quotes may be used. Neither your name nor any other personal identifying information will appear in any publications resulting from this study. The information gathered will only be used for the above purposes, and ahead of the study findings being published there will be an opportunity to review the draft to ensure no sensitive information is contained therein.

Interview Consent form (to be issued to all volunteers for interview)

Issue	Respondent's initial
I am aware that this research study is a sponsored professional doctorate commissioned by the Royal Navy with the aim of improving risk management practices within Navy Command	
I have had the opportunity to ask any questions related to this study, and received satisfactory answers to my questions, and any additional details I wanted.	
I understand that I may withdraw from the interview at any point. Should I indicate that I wish the interview to be terminated all notes taken previously in the interview will be immediately destroyed.	
I am also aware that excerpts from the interview may be included in publications to come from this research. Quotations will be kept anonymous.	
I understand that written notes will be taken of my responses in the interview, and that these will be destroyed once the degree has been awarded.	
I understand that relevant sections of the data collected during the study may be looked at by the academic supervisors of the research programme. I give permission for these individuals to have access to my responses to the extent necessary to fulfil their supervisory role..	

With full knowledge of all foregoing, I agree to participate in this interview.

I agree to being contacted again by the researchers if my responses give rise to interesting findings or cross references.

☐ no

☐ yes

if yes, my preferred method of being contacted is:

☐ telephone

……...

☐ email

……..

☐ other

……...

Participant Name:		Consent taken by	
Participant		Signature	

Figure 11-3: Interview Consent Form Template (from the author)