

CRANFIELD UNIVERSITY

PAUL S. ROBERTSON

STRATEGIC ORGANISATIONAL
RISK MANAGEMENT

AN INVESTIGATION OF UK RISK MANAGEMENT PRACTICES

SCHOOL OF INDUSTRIAL AND MANUFACTURING SCIENCE

DOCTOR OF PHILOSOPHY (PHD) THESIS

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CRANFIELD UNIVERSITY

SCHOOL OF INDUSTRIAL AND MANUFACTURING SCIENCE

ENTERPRISE INTEGRATION

DOCTOR OF PHILOSOPHY (PHD) THESIS

1999 – 2004

PAUL S. ROBERTSON

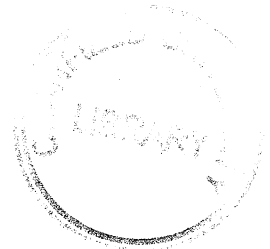
STRATEGIC ORGANISATIONAL
RISK MANAGEMENT
AN INVESTIGATION OF UK RISK MANAGEMENT PRACTICES

PROFESSOR CHARLES WAINWRIGHT

SEPTEMBER 2004

THIS THESIS IS SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS
FOR THE DEGREE OF DOCTOR OF PHILOSOPHY

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ABSTRACT

Strategic risk management within the UK is a professional field fraught with terminological debate, a lack of academic research and a need for illustrative tools in order to improve management systems. Treating risk as a social construct, this research approached strategic organisational risk management with the aim of examining interactions currently underway within industrial practice in the UK.

A thorough literature review has exposed the insufficiency of research within general risk management areas and, more specifically, the lack of research relating to strategic organisational risk management. To solve this, over 90 qualitative, in-depth interviews were conducted, amassing one of the most comprehensive collections of research material pertaining to UK risk management practice available to date.

This research has enhanced the current understanding of UK risk management practice within a number of distinct areas. Firstly the terminological debate has been addressed and its vagaries to some extent dismissed. Risk managers should use this terminological resolution to bring together similar professions rather than distance them through misuse of terms.

Through the interviews it has become clear that industrial events such as the Turnbull report and the events of September 11th 2001 have had very little effect upon actual risk management practices and priorities. Additionally the continuing importance of understanding context in the conduct of risk management has been emphasised. This stage of the process cannot be stressed enough. Context defines what we know, what we are capable of and the extent of the problem. Without it, all risk management processes are predestined to failure through a lack of understanding, and poor definition, of reality.

A new unified model of Strategic Organisational Risk Management (STORM) has been generated which, for the first time, begins to show the levels of interactions and complexity which risk managers face at the organisational level. The STORM model further illustrates the key elements which support and divide organisational risk management practice.

Identifying the deficiencies in current knowledge of strategic risk management practices, this research project has generated a tool supporting risk managers in understanding the complexities of their own organisations' risk management processes and practices. Moreover, it has created a significant starting point for future research.

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PUBLICATIONS AND DISSEMINATION

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Robertson, P. and Wainwright, C. (2001), “*Management Culture and Risk*”, presented at Disaster Management – Developing Best Practice, 18th-19th June, Coventry, UK.

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List of abbreviations

9:11	September 11 th 2001
AS	Australia
AZF	Azote de France
BCI	Business Continuity Institute
BIA	Business Impact Analysis
BSS	Barings Securities Singapore
CBI	Confederation of British Industry
CMM	Capability Maturity Model
DRII	Disaster Recovery International Institute
EPS	Emergency Planning Society
GARP	Global Association of Risk Professionals
HAZOP	Hazard and Operability Study
HSE	Health and Safety Executive
IoD	Institute of Directors
ICAEW	Institute of Chartered Accountants in England and Wales
ICDDS	Institute of Civil Defense and Disaster Studies
IEM	Institute of Emergency Management
IRM	Institute of Risk Management
IT	Information Technology
ITDR	Information Technology Disaster Recovery
KPA	Key Process Areas
NASA	National Aeronautics and Space Administration
NZ	New Zealand
SPSS	Statistical Package for Social Sciences
SRA	Society of Risk Analysis
STORM	Strategic Organisational Risk Management
TQM	Total Quality Management
UK	United Kingdom
UN	United Nations
UNDHA	United Nations Department of Humanitarian Affairs
WTC	World Trade Centre

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Chapter 1: Introduction

Chapter 1

INTRODUCTION

“All men, by nature, desire to know”

Aristotle

1.1 Introduction

This chapter introduces the research presented in this thesis. It explains the research background within the field as a whole and introduces the problem that is addressed. The aim of the research is outlined along with the research questions that the study intends to answer. There is a summary of the deliverables of the research and its contribution to knowledge.

1.2 Background to the research

The historical background of disaster management originates from the perspective of dealing with natural disasters and catastrophes. There has been a long-term process of development changing from a purely reactive approach to incidences, to a much more proactive and developmental approach. As the advancement of industry and technology continued a series of new manners of disasters, crises and risks were formed. Studies began to emerge that linked the physical causes of the events with the social effects

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involved and modern disaster management brought the two aspects together under the term socio-technical.

As the response to and, the management of, these major events became more proficient, studied and developed it became an easier process to address those issues which could cause these incidents. There was a realisation that incidents could be prevented in some cases, or at the very least their effects lessened. Risk management has become the process of addressing these issues in a structured manner. Research and practice surrounding disasters, emergencies and safety have all added to the understanding of risk management as it exists currently.

Although initially seen as a fringe business process the management of risk has proved invaluable to modern business both in reducing the impact of major events and benefiting the organisational decision making. This benefit and advancement for organisations has been recognised with a massive rise in the 'popularity' of the risk management concept. However, there is still not a great body of knowledge with which to support each and every aspect of the field. In the area of strategic risk management this has appeared particularly lacking. While some models and frameworks exist to explain certain elements, such as the training necessary within the industry or the effects of culture upon safety, there appears to be a very real gap in the academic knowledge regarding strategic organisational risk. In addition a number of recent events within the global field of risk management, and more specifically the UK field, have presented new challenges to organisations that are currently under appreciated by the level of academic research directed at them.

In order to contribute to the research and understanding of the field it was thought useful to examine a number of existing models with a view to their applicability in addressing strategic risk management at an organisational level.

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This thesis reports the findings of a PhD which formed a three year research project, originally commencing in 1999. It builds upon a number of other pieces of research and literature, notably the 'Ripple Model' also developed at Cranfield University by Morley published in 1999.

1.3 The research problem

The problem facing risk management professionals is a lack of research upon which to base their activities, a general lack of a model that approximates the risk management realities of the field and confusion over terminology, approaches and methods in the discipline. There is a distinct need for some form of descriptive model which can highlight the issues facing risk managers within a strategic organisational context.

In addition there is confusion surrounding what is currently affecting the development of risk management practices. Industry guidelines appear to be having some effect but there is no realisation of this within current literature. Recent developments within the risk management industry, such as the impending arrival of a national standard on risk management and a greater level of consciousness and attention paid by Government, may also be factors but there simply isn't the evidence to discern them.

Hence the central concern of the research project, upon which this thesis reports, was to investigate the current state of risk management practices within the UK and to develop, from existing knowledge and relevant frameworks, a practical model for use by risk management professionals.

1.4 Research aim, objectives and questions

At the outset of the research process it is imperative to develop a clear research aim, with a number of achievable objectives attained through the use of research questions. There is also a research deliverable as an output from this process.

1.4.1 Research aim

The overall aim of this research was to investigate UK risk management practices, to develop an understanding of the organisational issues involved and provide a structured model of the organisational interactions which affect the implementation of the risk management process at the strategic organisational level.

1.4.2 Research objectives

Having defined the aim of the research, a number of objectives were developed in order to meet this aim. The purpose of the objectives is to ensure that the research reported on within the thesis can fulfil the stated aim. These objectives are:

- To review the seminal literature, existing knowledge, current models and industry wide issues in relation to:
 - the various fields which contribute to the concept of risk management
 - the academic background to the study of risk
 - industrial issues regarding risk management.
- To develop a model that describes the characteristics involved in the implementation of a strategic organisational risk management process
- To ascertain how the various elements of the model would interact within organisations to affect the risk management process

Chapter 1: Introduction

- To evolve the model towards a useful tool for risk management professionals.

1.4.3 Research questions

In addition to the stated aims and objectives a number of research questions were generated. These provided the basis for the research activities and were developed to ensure that the research objectives were met.

1. What is the current understanding of the concept of risk management?
2. What factors are effecting change within risk management practices?
3. What models exist to observe these practices and changes?
4. What are the interactions that exist within organisations with regards risk management?
5. What influences these interactions?
6. How might the interactions and influences identified in 4 and 5 be used to represent the impact upon risk management within an organisational framework?

1.4.4 Research deliverable

The research deliverable is a strategic organisation risk management model. This model identifies and describes the features and issues of the organisational risk process and the interactions that exist within the model. It also describes the various limitations upon the organisation and the risk management process as a whole. It is intended to provide a tool for risk management professionals in the application and study of strategic organisational risk management processes.

Chapter 1: Introduction

1.5 The author

Within any research the author plays a crucial role in the formation, design, and fulfilment of the project. As such their background, influences and beliefs play an important contextual role in the understanding of the research.

The author was born and educated within the UK. However, throughout his education and upbringing the author lived in a number of different countries developing a general interest in learning and an appetite to explore and understand. The author's academic background began at Coventry University with one of the first intakes of the newly formed BSc (Honours) degree course in 'Disaster Engineering and Management'. This course of study was thoroughly multi-disciplinary in approach to both the practical and theoretical aspects of disaster management. Within the course structure the author spent one year of the four year course within industry, working with the World Health Organisation in Tunisia as part of a new initiative in Vulnerability Reduction and Risk Management.

This course of study and the time spent within industry built towards an interest in multiple fields of risk management across sectors. Over the previous six years the author has consulted and assisted within a range of businesses, from large multi-national oil and gas corporations to UK specialist consultancies. The author has been published within a variety of journals and professional trade magazines, and has been an invited speaker both within the UK and internationally.

This experience within industry and the background of the degree course at Coventry University are responsible for the authors continuing examination of the field of professional risk management practice.

Chapter 1: Introduction

1.6 Thesis structure

This thesis has followed a common research and reporting structure as highlighted below and in figure 1.1.

Chapter 2: Literature review

This chapter aims to review the seminal literature with regards risk management practice and theory. Current theories and existing models are investigated and some brief industrial examples serve to show some of the concepts developed.

Chapter 3: Research methodology

The aim of this chapter is to investigate the various research methodologies available and examine those most suitable for this research with details of the decisions that have been made in selecting the final approach. This chapter will assist in the understanding of the approach of this research.

Chapter 4: Pilot study

This chapter describes the initial stage of the new research. The aim of the pilot study is to gain a greater understanding of the issues regarding current risk management practices and to develop elements worth considering for the model development.

Chapter 5: Model development

In this chapter the STORM model is proposed based on the findings within the pilot study. The concepts from the pilot study, developed from existing models and theories are all integrated into an overall model of the organisational risk management interactions and elements.

Chapter 1: Introduction

Chapter 6: Main study

Using the new model this chapter aims to test and develop the model in line with current industry practices and pressures. From this investigation further refinements to the mode can be gained and a greater depth of knowledge of the process understood.

Chapter 7: Verification

This chapter aims to investigate the quality of the research process throughout the course of the project. Using current qualitative verification methodologies the research process is examined and a concluding *post-hoc* study is conducted into the industry response to the model.

Chapter 8: Discussion

In this chapter the literature is brought together with the pilot and main study findings to highlight the current themes within the field. Useful insights are gained with regards current risk management practices.

Chapter 9: Conclusions

This chapter presents the conclusions of this research. It shows that the research aims and objectives have been met and reflects upon the overall research project. The contribution to knowledge is shown and areas for future research are identified.

Chapter 1: Introduction

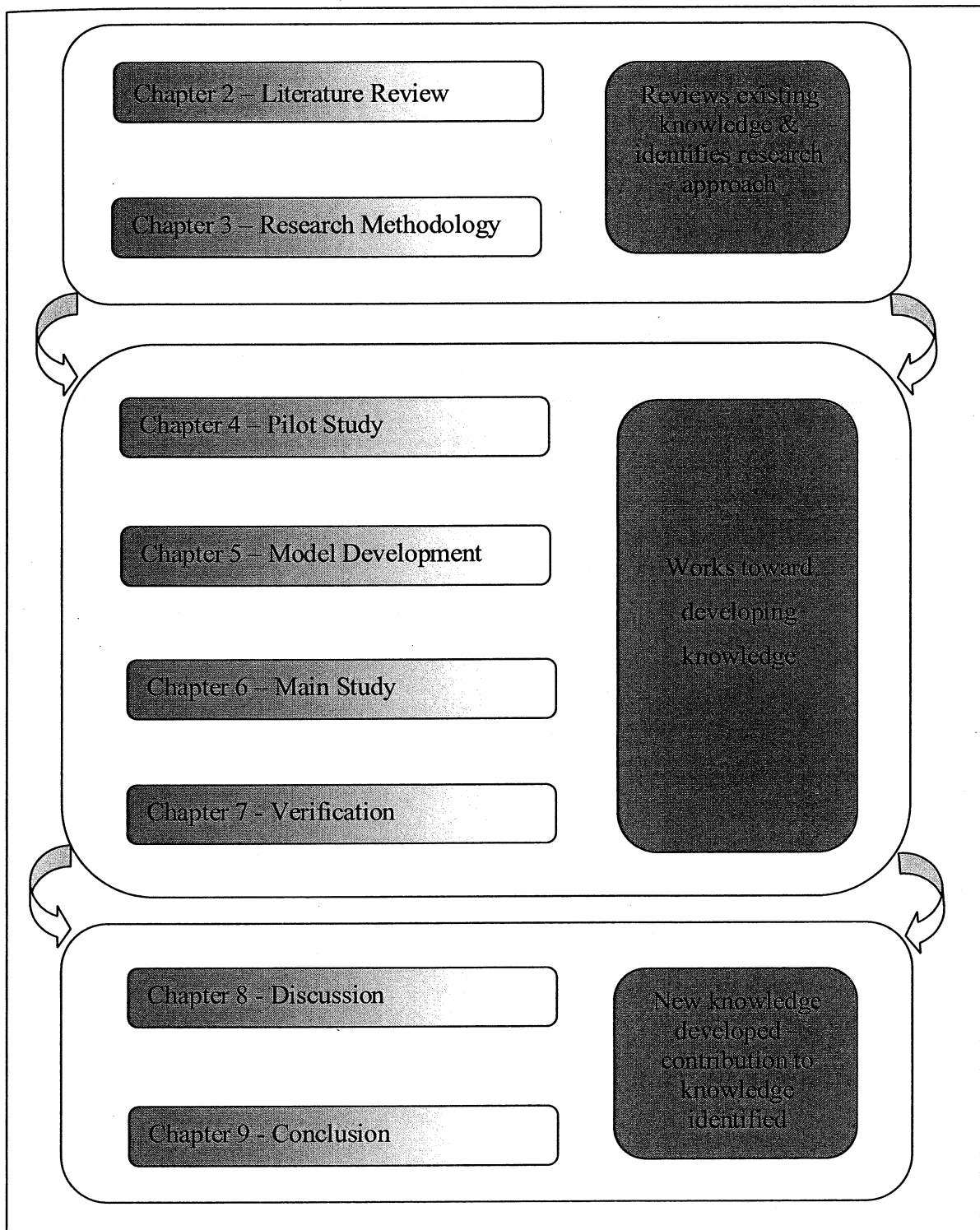


Figure 1.1 – Thesis Structure

Chapter 1: Introduction

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Chapter 2

LITERATURE REVIEW

2.1 Introduction

This section contains the supporting material upon which this research project has been built. The building blocks of previous research, theoretical discussion, practical application, real-world cases and current models all play their role in the construction of a representation of the state-of-the-art risk management practice within the UK.

The subject matter of disaster, the difficult nature of a simple definition and various methods used to view the concept are introduced. The currently *en vogue* fields of business continuity and risk management are examined. The human element within business and the nature of organisations are brought to the fore to show the importance of the social factors involved within these areas. Recognised business issues are examined with respect to their current and potential impact upon the industries to which they apply. A number of models with applicability to the field are brought forward for potential developmental interest and some previous examples of risk management incidents are used to highlight the key factors that appear to be at work within the field.

All of these subjects and discussions bring to light the current industry based upon past experience, research and cases. Not only do they serve as cornerstones of current practice but they can also demonstrate some areas of weakness in the current understanding of risk management. They also highlight some avenues for further investigation into UK risk management practice.

2.2 Disaster, crisis, emergency, risk and safety

The title of this section uses words that many would like to believe are simple, clear and easy to understand. However, as with many apparently straightforward fields, the reality is much more complex the further one tries to examine it (Bernstein, 1996). These terms, readily used on a daily basis within everyday life, hold a great deal more complexity and debate under the surface of their dictionary definition.

Not only is definition of the individual terms an issue, but also their relationship to each other and the professional fields to which they 'belong' is under constant dispute. Many crisis or emergency management professionals would argue that disasters are merely a difference in scale from their occupation (Dombrowsky, 1995). Through the maturation of the related fields there can be seen divergent paths of more specialised professional endeavour, yet their basic assumptions and premises remain highly analogous. Replacing terminology of one of the fields could easily represent another (Mitroff, 2001). Thus the development of the fields shows both the divergence of the fields, but also their common ancestry in the overall field of risk.

Of the various professional fields that have evolved there are two distinct topics that deserve individual recognition and review. Business continuity has developed as an organisational response to potential threats upon normal business operations (Elliot *et al*, 2001). Originally generated by the IT industry, under the term 'disaster recovery', the business continuity field has recognised the need to investigate further than an organisation's data during times of crisis and has formed a more holistic approach to businesses as a whole. Risk management remains a subject area fraught with definition and terminology difficulties, yet the core of the subject has remained constant throughout its existence. The discipline has generated a number of distinct off-spring, such as financial, insurance and emergency to name only a few, but whilst their specific methods of procedure may differ their processes remain the same.

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The differences between industrial sectors have become worthy of note as the various fields have progressed. Whilst some industries have taken on a zero tolerance approach to risk taking in order to improve safety, others engender risky behaviour within controlled environments to develop greater business opportunity (Renn, 1998).

2.2.1 Difficulty of definitions

Each of the words disaster, crisis, emergency, risk and safety appear to have simple definition upon first investigation. Yet, a conversation between professionals using the same terms will frequently lead to misunderstanding, disagreement and debate. This debate usually revolves around the central themes of scale, time (or speed of onset), resources, capability and the nature of the precipitating event itself.

To most lay persons the simplest definition of a disaster would be that of "...a sudden calamitous event bringing great damage, loss, or destruction" or perhaps "...a sudden or great misfortune or failure" (Britannica.com, 2003). Both of these definitions, provided by one of the world's most respected encyclopaedias, show the importance of time of onset of the event and the overall scale of the impact. Worldwide natural events regularly illustrate this apparently straightforward view of disasters in the form of earthquakes, floods, landslides or a myriad of other types of incidents. However, a 'calamitous event' does not seem to fully represent the human aspect of a disaster. As Western states, "At one level, a disaster becomes a disaster only when man and the environment he has created are affected. An avalanche in an uninhabited valley, or an earthquake in the Arctic are geophysical events, not disasters." (Western, 1972 pp.7). So not only must it be a major event, but there must be a population affected for an event to be termed a disaster.

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Other authors, such as Raphael use phrases such as “overwhelming events” or “circumstances... beyond their capability” to show that disasters must be events that overpower the abilities of the population or community affected (Raphael, 1986). Beverly Raphael continues in her discussion to emphasise that just because the event is overwhelming in nature it need not be sudden in its onset and can be a gradual and prolonged event (Raphael, 1986). Hence, a famine, originating over the course of years and with a number of causes, can be termed a disaster when a definition using the need for sudden onset could not have allowed it to do so. This use of a potentially prolonged period as part of the definition reopens debate upon the use of timescale within a definition.

The capability of the affected population or their ability to respond and recover is also brought to light as a significant factor in the definition of a disaster. This capability to respond brings into question the need to identify the abilities of an affected population before the expression disaster can be used (Dyson, 1983). Capability involves the “capacity or ability required to perform a specific task”, which shows that a number of things must be present for there to be a capability (Britannica, 2003). Thus, within the context of disasters, the capability to respond and recover would involve knowledge, physical resources and ability for these to be used through skills and training (Turner and Pidgeon, 1997).

Most of these definitions skirt around the fact that disaster must be a social phenomenon. Western, Raphael and Dyson all use terms such as ‘population’ or ‘community’ affected and Western explains that an event without a population cannot be a disaster, yet their definitions do not require a description of the population to exist (Quarantelli and Dynes, 1977). Their definitions do rest upon the premise that without the population being present there could be no disaster and to that extent there needs to be a definition that accounts for the community involved.

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To that end the United Nations (UN) developed a definition of disaster that still stands as one of the best all encompassing definitions used so far (Dombrowsky, 1995). The UN definition states, that “A disaster is a serious disruption of the functioning of a society causing widespread human, material and environmental losses which exceed the ability of the affected society to cope using only its own resources.” (UNISDR, 2000). This definition uses a number of the features present in previous examples, those of scale, capability and resources, but has disregarded the factor of time. In this way the definition can remain broad to cover all forms of societal disaster, and not merely the classical sudden onset events.

The simple language of this definition belies its importance and potential impact to terminology and the profession. If a disaster can only be termed as such if the community affected is incapable of coping then it leaves many calamitous events as tragedies but not disasters (Dombrowsky, 1995). Thus, events such as the terrible loss of life at Hillsborough stadium on April 15th 1989 would be termed a major incident, a catastrophe perhaps, but not a disaster. Similarly the major flooding in late 2000 throughout the UK was a sad chapter in the lives of many families in many parts of the UK, yet the emergency services – part of the UK’s emergency response community – coped adequately within their own resources to respond to it.

The UN definition, therefore, shows a significant need for the further clarification of the term ‘affected society’ and especially so within the context of the event itself (Oliver-Smith, 2000). Taking the two examples above there is a difference in the use of the term disaster if you view the communities in a different perspective. At Hillsborough it is possible to see the affected society as the football supporters rather than UK society as a whole. In this way the affected society clearly does not have the capability to cope with this type of event and will be left severely affected by the events of that Saturday afternoon. Additionally the flooding throughout the UK has a number of potential affected societies which could be examined separately from the overall UK society. To the local area it was a serious incident but the emergency services of each area coped

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with the immediate response will little difficulty. However, to each household the loss of family heirlooms, treasured possessions and even a sense of security left many unable to cope within their own resources and many authors would argue that each of these cases is a disaster (Alexander, 2000).

Based on this plethora of definitions, and the surrounding debate over terminology, it was proposed that the term disaster is a 'sponge concept' (Quarantelli and Dynes, 1970, pp.328). This phrase was developed to show those words within the English language which have multiple and distinct meanings. Using this 'sponge concept' Quarantelli and Dynes put forward the notion that the word disaster can actually refer to the agent, the impact, the psychological evaluation and the social disruption caused, thus describing a number of physical, sociological and technical meanings all within the same word (Quarantelli and Dynes, 1970, pp.328).

Many authors have attempted to redefine disaster, to create one holistic all encompassing definition that would satisfy the whole gamut of researchers, academics and practitioners (Dombrowsky, 1995. Oliver-Smith, 1999). Yet others, such as Turner and Pidgeon, would argue that the search for a complete definition is in fact flawed in itself (Turner and Pidgeon, 1997). They propose that "...there seems to be no single, precise notion underlying the common usage of the term, waiting to be encapsulated perfectly by means of a few words of definition" (Turner and Pidgeon, 1997, pp.68). In fact they suggest that the "...definition of the term has generally been bound up with the purposes and interests of the investigator using it" (Turner and Pidgeon, 1997, pp. 69) thus producing the sheer variety and volume of differing definitions of disaster. In this way the authors suggest that using a fixed definition, agreed by bodies external to any research movement, would be the most suitable method of affixing a definition to the term disaster.

Alexander continues this argument maintaining that there are a lack of sufficient reasons for differentiating between the various disaster definitions and terms as they are synonymous (Alexander, 2000, pp.7). Alexander continues to intimate that the entire

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definitional argument is lacking in real importance and, to some extent, is irrelevant to the overall field. As long as one definition is stated and used consistently the exact wording is less important than the ability to understand what the definition includes, and crucially, what it excludes (Dombrowsky, 1995). To this end the UN definition of disaster seems wholly appropriate in selection as it has been developed by an international body with a great deal of international input, it is clear in its wording and, through the use of examples, it is quite clear what events can and cannot be termed disasters.

In comparison to the definition of disaster the terms of both crisis and emergency are comparatively simple to identify. Britannica states that a crisis is “an unstable or crucial time or state of affairs in which a decisive change is impending; *especially*: one with the distinct possibility of a highly-undesirable outcome” (Britannica, 2003). This appears to be a fairly concise examination of the term, yet there is debate surrounding exactly what does constitute a crisis and where the limits to a crisis can be drawn (Keown-McMullan, 1997).

Three key elements to a crisis were originated by Hermann in 1972. Hermann stated that a crisis was characterised by a high threat of adverse result, short decision-making time available, and a degree of surprise in the arrival of the incident (Hermann, 1972). Without these three factors Hermann argued that researchers or readers of the subject could only infer from the context that the situation concerns some ‘critical’ or ‘urgent’ problem” (Hermann, 1972, pp.4).

Following the proposal of the three components further definitions were raised using quite different points of genesis. Fink expanded upon the classical dictionary definition mentioned above and added that whilst a crisis is an unstable or crucial time or state of affairs in which a decisive change is impending, it also has “the distinct possibility of a highly desirable and extremely positive outcome” (Fink, 1986, pp.15). He continued to

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argue that the difference between a positive or negative outcome in a crisis was a 50:50 prospect (Fink, 1986, pp.15).

This positive aspect to crisis is one long-established within certain vocabularies worldwide. The Chinese symbol for crisis, *wei-ji*, is in fact two symbols combined – that of danger and also that of opportunity. However, some authors neglect the opportunity side of the meaning, focusing on the negative and harmful effects and in this way they seek to negate the destructive but not take an active part in developing the constructive element (Papadakis, Kaloghirou and Iatrelli, 1999).

Two highly prolific authors within the field of disaster, crisis and emergency management, Paul Shrivastava and Ian Mitroff, highlight that the key element of crisis is in its potential effects upon an organisation's "most important goals of survivability and profitability" or continued functioning (Shrivastava and Mitroff, 1987). Thus, the definition is extended to include the element of scale of the potential impact. This is a theme consistently used by authors such as Fink, Hermann, Shrivastava, Mitroff and Pauchant, and as such should be considered as a highly significant delineator in the characterisation of a crisis (Mitroff and Pauchant, 1990).

From collation of the material in the field, the existing dictionary definition and the characterisations suggested by the aforementioned authors there appear to be five major dimensions which an incident must fulfil if it is to be termed a crisis. A crisis must be:

- escalating in intensity
- coming under close scrutiny (from external forces)
- interfering with normal operations
- jeopardising the positive image of the organisation
- damaging to the organisation's 'bottom-line'.

Each of these terms were, in fact, originated by Fink, however it took a number of years following his publication for the adoption of these definition factors to take place (Fink, 1986).

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The term emergency follows a very similar path to that of crisis, and to some it could be termed the 'little brother' incident to a crisis (Drabek, 1991). Where crises can threaten the very survivability of an organisation the impact of an emergency can be detrimental, yet not necessarily fatal, to the organisation's capabilities and operations (Mitroff, 2001). Hence, an emergency is merely a crisis that lacks the ability to threaten the overall survival of an organisation.

There are, however, two issues raised upon further examination of this field that require resolution. Firstly the dictionary or commonly held definition is that an emergency is "an unforeseen combination of circumstances or the resulting state that calls for immediate action" (Britannica, 2003). This definition lacks any level of scale that seems to have proved so important in all of the previous definitions. However it is likely that the key to the definition in terms of scale is based upon the context (Alexander, 2002). If the organisation or agency in question is a small company the scale of the event necessary to cause an emergency will be quite different to that required by a government or state (Nat. Governors Assoc, 1979).

Secondly the issue of preparedness, or more correctly the lack of it. Both the dictionary definition of emergency and the previous examination of crises as the next stage of an emergency state that the incident must be 'unforeseen' or with suddenness. Yet a number of authors would contend that emergencies can in fact be managed through a process, beginning before the incident has occurred. For examples of this read works by authors such as Alexander (2002), Drabek (1991) and Mitroff (2001) along with a plethora of others already mentioned. This management of emergency goes from preparedness before an incident, to response, recovery and rehabilitation and shows that emergencies are not straightforwardly characterised by their unexpectedness. It is more in keeping with the definition of crises that an emergency is purely an incident which has not yet become a crisis.

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Risk is a term used very widely in the modern world without a great deal of thought about its real meaning (Douglas and Wildavsky, 1982). Derived from the Italian word *rischiale*, meaning to run into danger, and the French word *risque*, the word is almost constantly used interchangeably with hazard, probability and danger (Jones, Cawood and Durham, 2001). However, each of these terms already have technical definitions within a multitude of professions such as engineering, insurance and finance and using them interchangeably with risk would clearly lead to misunderstanding and confusion.

Short and Clarke sum this dilemma up succinctly in stating that “conceptual problems plague the study of risk. Commonly used terms acquire technical meanings and technical terms are used far beyond their generating domains” (Short and Clarke, 1992, pp.5). Therefore the more that a technical term is used as a common descriptor the more likely it is to be misused and lose its definitive quality.

Many authors and organisations have attempted to fix a definition of risk, and two agencies stand out as being worthy of mention. Firstly the UN put forward a definition in a distinctly techno-centric way with risk being defined as “expected losses (of lives, persons injured, property damaged and economic activity disrupted) due to a particular hazard for a given area and reference period” (UNDHA, 1992, pp.16). This agency goes on to emphasise the importance of a mathematical calculation to measure risk as “a product of hazard and vulnerability”. We shall return to this mathematical aspect of the definition shortly.

The second agency worthy of mention is one at the very centre of the terminological debate regarding risk – the Society of Risk Analysis (SRA). For four years a subcommittee of the organisation worked towards a holistic and clear definition of risk and at the end of the process the working group conceded defeat without finalising an unambiguous description (Kaplan, 1997). Their recommendation was that each author and researcher provide their own definition, as long as they provided adequate explanation and followed that definition consistently (Kaplan, 1997).

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The society did finally settle upon a definition, yet it brings out more issues requiring investigation that it solves. The definition states that risk is “the potential for realisation of unwanted, adverse consequences to human life, health, property, or the environment; estimation of risk is usually based on the expected value of the conditional probability of the event occurring times the consequence of the event given that it has occurred” (SRA, 2003). This definition was brought about upon the realisation that the society needed to set a precedent for other authors and researchers to follow, yet they still maintain that any definition can be used as long as it is stated clearly and followed reliably.

One of the achievements of this definition is to draw attention to the issue of probability. As seen in the above definition it is the “potential for realisation of unwanted, adverse consequences” that plays an important role in determining risk. Therefore, risk is, to some extent, determined by the likelihood and potential effect of impact which are both characterisations that can be in some way measured (Jones *et al*, 2001). It is in the introduction of probability that some of the worst cases of misuse of terminology occur and where “semantic confusion is legendary” (Kaplan, 1997, pp.407).

There are three distinct meanings of probability within common and technical usage in modern language. The first is the statistician’s explanation which can also be called frequency. This refers to the results of a repeated action forming a rate of recurrence for a given or studied event (Rowntree, 1991). This is a physical number or quantity that can be tested by experimentation, recorded and calculated mathematically. The second classification is Bayesian, named after Reverend Thomas Bayes, which states that probability is the degree of confidence which individuals possess about a given circumstance, which does not exist in the ‘real world’ and only exists as a subjective concept within each individual (Bernardo and Adrian, 1994). This has been called ‘subjective’ probability in the past but this word is misleading as it suggests, in contemporary idiom, a lack of scientific rigour which is not the case with Bayesian theory (Kaplan, 2001). Instead Bayesian is better described as “confidence in evidentiary-based

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probability” (Bernardo and Adrian, 1994, pp.22). Thus Bayesian probability does not need an experiment to exhibit actual frequencies of outcomes, but a degree of certainty in existing information. Finally there is the mathematician’s meaning of probability. In this connotation probability is represented by a curve of data points in which a mathematician is interested in the properties of the curve not the interpretation or the extrapolation of real-world information from it (Rice, 1995).

Although this examination of probability appears to be a diversion from risk it is in fact a significant determinant in our view of risk as a mathematical, technical or social issue. If we return to the UN definition and the statement that risk is “a product of hazard and vulnerability” the organisation have made a decision to look at risk as a mathematical function and use calculations accordingly. The UN then continues to state that a given hazard multiplied by a given vulnerability of a community will give a mathematical outcome of measurable and comparable risk (UNDHA, 1992).

This supposition that risk is primarily a mathematical function is an incredibly contentious within the field. This would mean that risk is an absolute figure which can be measured under any circumstance and compared against an entire series of other ‘risks’. It is in this way that professional fields such as insurance or finance use the term risk (Moore, 1983). However, when dealing with non-numerical issues of any kind regarding risk the allocation of figures is “at best nonsensical and at worst a downright lie” (Douglas, 1982, pp.18). To achieve a figure capable of being calculated there must be an assignment of numbers in some form, which is a subjective process in itself and negates the purpose of an objective medium (statistics).

Douglas proposes that the most important aspect to understand regarding risk is that it exists as a social phenomenon (Douglas, 1992 and Douglas and Wildavsky, 1982). Douglas developed a proposition that risk, by its nature as a social issue, is an elusive volume of space that exists between a community and a hazard. The greater the distance between population and hazard the lesser the risk and vice versa (Hayes, 1992). In this

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use of the term the quantification of risk is totally obstructive to the treatment of a social predicament. The question of risk then becomes how to separate hazard and community, or how to describe the void between the two factors. To assist in this process various authors developed the concept of 'acceptable risk' (Douglas, 1992. Douglas and Wildavsky, 1982. Hayes, 1992. Hurst, 1998 and others).

The acceptability of a given risk is explained as a highly subjective decision made by every person hundreds of times each day (Douglas, 1992). If we recognise that risk is the gap between hazard and population then every individual is faced with risk decisions such as whether to cross the road, or even get out of bed as every act known to man is surrounded by hazards – natural or man made. The key to the concept of acceptable risk is the tolerance of voluntary risk such as crossing the road, yet the intolerance of involuntary hazards being brought closer to the population (Douglas and Wildavsky, 1982). These involuntary hazards could be increased levels of pollutants in the air, or the placement of a nuclear reactor near a residential area, and it this type of risk which social scientists seek to study, record and manage (Bryson, 1997).

Crucial to this concept of voluntary or acceptable risk is the idea of control. "Since anything and everything one does might prove hazardous, we should ask why we face some unknown risks gladly and bristle at others" (Douglas, 1992, pp.19). Through examining the nature of accepted risk such as that proposed by social scientists, including Douglas, it is clear that risk really is a 'social construct' and should be treated as a social issue in addition to the technical aspects of the given hazard (Salter, 1997).

Once risk has been classed as a social phenomenon the description of safety as the "immediate and individual level of potential risk" is relatively simple (Reider, 1974). In this way safety becomes an output, or a method, of the management of risk. An example can be seen on any UK construction site in the enforced use of hard hats – the hazards are present, the risk exists that someone may be injured and to reduce that potential risk a safety measure has been adopted (Pidgeon, 1997).

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The dictionary definition, again supplied by Britannica, agrees with this social and individual perspective on safety, stating that safety is “the condition of being safe from undergoing or causing hurt, injury, or loss” (Britannica, 2003). Subsequent professional definitions have deviated very little from this explanation and even then it has only been a variation upon the social theme based upon the industrial or professional context. It is the industrial context of safety and risk management that has defined the organisational issue of safety culture in recent years (CBI, 1990). Safety and organisational culture and behaviour is an important issue beyond that of mere definition and will be examined in subsequent sections.

2.2.2 Development

The field of disaster management appears, at first glance, to be very young, still changing and still generating new and divergent offshoot fields of professional interest. However it is almost certainly the world that has changed around disaster management and not vice versa (Britton, 1986). Even the most ancient of texts, the Bible, contains a description of disaster management in action through the story of the flood and Noah’s ark. There was preplanning, preparation, response, recovery and rehabilitation, all factors that form integral parts of modern disaster management (Mitchell, 1996). Yet it has only been in the technological age of the last two centuries that disaster management has emerged as a distinct field of study (Quarantelli, 1978).

The development of disaster management has been characterised in the response to, and study of, a number of major incidents. Samuel Prince’s 1917 doctoral study of the Halifax munitions ship explosion and its impact upon the local community is widely regarded as the seminal case of modern disaster research (Prince, 1920). The explosion devastated a large portion of the city in the initial blast and the ensuing fires raged for

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days. The final number of lives lost is still undecided but certainly totals over 1,600 (LeBlanc, 1992).

It was in this incident, and the post-event research, that modern disaster management was developed. Research was conducted into social effects of the explosion, the community response, the construction of housing, the effects of poverty in the area and a myriad of other topics previously neglected. Through this research it became clear that a process was at work in the background of the disaster event. The disaster cycle became the method for depicting this process (see figure 2.1).

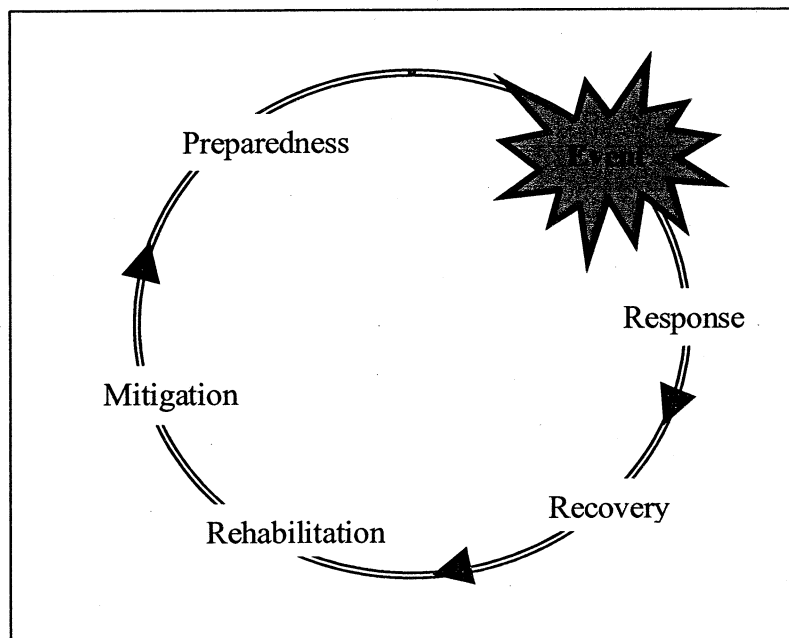


Figure 2.1 – The Disaster Cycle

The cycle was developed to show the importance of the continuous process surrounding disaster, and allow for intervention to occur at any stage to better prepare, respond and recover from incidents, hopefully preventing a disaster or lessening its impact (Mitchell, 1996). The relationship between technical event and social impact was now placed at the centre of research into disasters. It is this relationship that became a new and key classification of types of disasters – socio-technical (Drabek, 1991). Barry Turner and Nick Pidgeon first coined this term in response to the growing trend in technical failures

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leading to societal disaster (Turner and Pidgeon, 1997). It had, however, been a term under discussion for many years following incidents such as the explosion at Halifax, the gas leak at Bhopal and many other industrial incidents.

The classification of a socio-technical disaster marks an important movement in disaster management to recognise the interaction between community and industry (Quarantelli, 1987). In many industrial accidents it has not been merely the failure incident itself that has resulted in the disaster but the combination of social factors leading up to that incident and following the accident event (Perrow, 1999). In the case of Bhopal the gas leak was indeed a serious event, but if the local shanty towns had not be so highly populated, or even allowed to exist – albeit they did so against local regulations – the effects of the leak would as likely not have been classed as a disaster (Shrivastava, 1987).

Once the recognition of the link between modern social and technical issues resulting in disasters had been made there was a clear path to be developed for researchers, practitioners and policymakers in developing a preventionist approach to disaster and risk management (Quarantelli, 1978). This focus upon how best to prevent disasters led, almost immediately, to the splintering of the disaster management agenda into constituent parts such as hazard, emergency and risk management (Mileti, 1997). During this process two specific fields of professional endeavour were developed which are of definite interest to this research project, business continuity and risk management.

2.2.3 Business continuity and risk management

Although the terminology and field of business continuity appears to be a new and highly fashionable professional practice it is worth noting that its principals have existed for far longer than its title (Elliott, 2001). The UK's Business Continuity Institute (BCI), one of the first of it's kind of professional bodies in the world, defines business continuity as an "holistic management process that identifies potential impacts that threaten an

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organisation and provides a framework for building resilience and the capability for an effective response which safeguards the interests of its key stakeholders, reputation, brand and value-creating activities” (BCI, 2002a). This definition contains a number of important concepts that distinguish it from previous, if similar fields.

Firstly business continuity is regularly confused with disaster or data recovery which is primarily an information technology (IT) field (BCI, 2002a). This is still not a resolved situation and the debate still rages between IT professionals and more social or organisations’ business continuity specialists (Doswell, 2000). As a result the IT profession involved in disaster recovery is now more generally referred to as ITDR (information technology disaster recovery), to try and avoid confusion. The difficulty in creating a distinction between the fields exists because of the commonality of their goals, and yet a completely different approach to achieving them (Elliot *et al*, 2001).

Both ITDR and business continuity aim to “return an organisation to an operating normality” as quickly as possible following an event preventing them from carrying out their core business tasks (Leather, 2001, pp.4). However, they differ in their approach to how this can be achieved. The IT profession maintains that disaster recovery leading to business continuity is about the safeguarding of organisational data and the salvage of that information to ensure no loss of service. Whilst business continuity professionals maintain that while the data is important the other factors involved in the organisation are in fact of greater value, those being the personnel, the organisation’s credibility or reputation, the relationship with clients and other stakeholders and a multitude of other more social factors (Leather, 2001).

Once we can establish that business continuity is a social process, or at the very least that it is a great deal wider than just IT, we can see its relationship with the previously discussed fields of disaster, emergency, crisis etc. The Institute of Directors (IoD) recognised the need to confirm business continuity as a vital process in organisational management in its publication on the subject, further cementing the field’s magnitude and impact upon current business practice (IoD, 2000).

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To fulfil business continuity an assessment of the organisation or community under examination must be performed and there are a number of methods of conducting this assessment (DRII, 1998). Many systems exist ranging from the highly quantitative to the subjectively qualitative and each has their proponents and objectors (Doswell, 2000). These systems include the “Threat, Vulnerability and Controls Matrix”; a system which uses qualitative descriptors such as high/medium/low to determine the level of threat which a given hazard presents to a predetermined community or business (DRII, 1998). Alternatively there is the ‘Function-Risk/Threat Matrix’ which requires a listing by function of all actions of the organisation and each is then scored by potential for impact from a preset list of hazards (Adam, 1995). This matrix is known by a number of titles and can be found in almost every text surrounding business continuity, in some form or another, and yet these matrices focus upon the hazard and not the critical needs of an organisation or community.

In order to address the actual needs of a community, population or organisation there needs to be an assessment of the critical functions of that group (Elliot *et al*, 2001). It is these functions that business continuity is seeking safeguard and “it is imperative that there is an assessment and subsequent hierarchy of importance of business functions” (Childs and Dietrich, 2002). This assessment is carried out through the performance of a Business Impact Analysis (BIA) (Elliot *et al*, 2001). The business impact analysis has three goals:

- to establish the value of each organisational unit or resource as they relate to the function of the total organisation
- to provide the basis for identifying the critical resources required to develop and business recovery strategy
- to establish an order or priority to restoring the function of the organisation in the event of a disastrous incident.

(DRII, 1998, pp.2.49)

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The BIA can be qualitative and quantitative in its means of research and delivery, and is most successful when fully utilising both. In this way an organisation or community under investigation will be described in both function and form, and not merely be a financial representation of potential damage (Hiles, 2002). “The various forms and guises of BIA examined in the literature available differ widely across the field and in this youthful industry changes are ever present, yet the goals remain the same – to illustrate and analyse the organisation, to better prepare it for response and recovery from harmful events” (Elliot, 2001, pp.12).

Risk management has a similar confusion to, if not greater still than, business continuity. In previous sections we have the debate surrounding the definitions with the subject area and this is vital in seeing the role of risk management not only as a language but also as an over-arching term under which many fields can be placed (Renn, 1998). The definition of risk as a social construct, far from being a debate over semantics, represents the importance of the term and field (Salter, 1997). The definition serves to show that risk is “a social process of examination; the discovery of the relationship between hazard and a population or community of interest” (Adam, 1995, pp.18). It then follows that risk management is the method of controlling that relationship in some way, to assist in the prevention or lessening of impact of a hazard upon a community.

The first national standard for risk management, AS/NZ 4360, was produced in Australia and New Zealand in 1995 and is still regarded as one of the finest and simplest set of principles and guidelines in the field (BCI, 2002a). The standard sets out the management process for the handling of risk all based within a preventionist approach, using risk as a social construct and seeking to develop social responses to hazards in order to mitigate their effect (AS/NZ 4360, 1995).

The standard details a highly generic process that can be used in many different environments for diverse communities or populations. The process is represented by a number of steps, as laid out in figure 2.2. As with many descriptive models or

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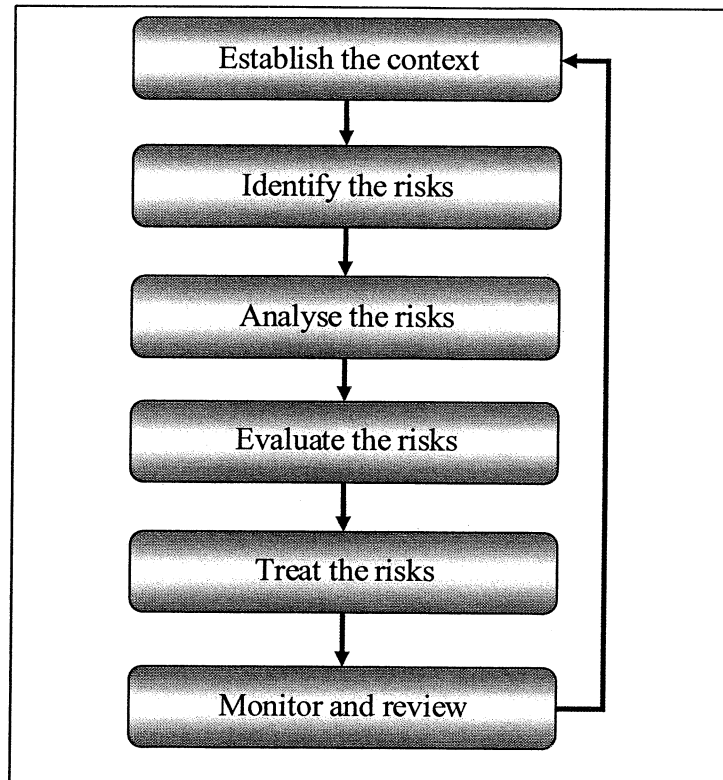


Figure 2.2 – The Risk Management Process

representations the illustration itself is greatly simplified compared to the concepts it contains (Bryson, 1997). The same is true of the representation in figure 2.2. At first inspection this process gives the impression of being a simple proposition; establish a context, identify risk, analyse risk etc. Yet the debate leading up to the definition of risk was not simple and consistently showed the difficulty involved in conceptualising risk (Dombrowsky, 1995).

Within each stage of the risk management process there are a multitude of questions, investigations and analyses to be conducted (Jacobs and Worthley, 1999). Although the process appears straightforward the focus upon hazards and not risks has resulted in many organisations being “caught up in their own predetermined ideas of what risks they face” (Moore, 1983, pp.17). By starting the risk management process with some pre-existing concepts of what risks are faced by the organisation the process is subverted into a ‘rubber stamping’ exercise with decisions already made by those in the position to

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analyse the risks and present the findings to the organisations decision makers (Short and Clarke, 1992).

The crucial significance of the risk management process is that it begins a step before any other risk model or tool – at the stage of context. Those involved in the decision making process need to define a number of different contexts; that of the organisation, its environment, the legislative confines and any number of other factors (AS/NZ 4360, 1995). External and internal organisational contexts must be investigated. External to the organisation, what factors are influencing the current decision making process? What is likely to change these contexts within the planning time period? Internally, what are the current strengths and weaknesses of the organisation? Where do the skills lie, and where are they developing (Johnson & Scholes, 1997)?

“The power of context definition should not be underestimated” (Bernstein, 1996, pp.199). Context is the description of current circumstance that allows the organisation and the risk to exist. Without a depiction of that setting both the organisation and risk are only capable of being measured against themselves and, at that point, fail to influence the social nature of risk (Adam, 1995). The hazard and the community both have contexts in which they exist and to deny this information to the analysis and decision making portion of the process is to remove the ability to manipulate the context potentially negating the risk before it has even developed (Bernstein, 1996).

In addition to the specific field of risk management as detailed in the Australian standard, and a number of others developed since its publication, the family or hierarchy of risk management is in need of re-examination (Perry, 1998). Once the definition of risk is accepted by the theorist, practitioner or researcher involved as being a social construct the other fields of disaster, crisis, emergency and safety management all follow a similar route as that of the risk management process. The only crucial difference between them all is the first all-encompassing step of the process in ‘establish the context’. The context

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can determine the urgency, scale and time period of the hazardous event itself and also define the organisation or community affected.

Due to the generic capability of the risk management process it can be argued that all of the other fields are in fact subsets of the overall risk management family (Quarantelli, 1998). This hierarchy has little impact upon the implementation of the professions, but it does allow for a terminological shift from disaster or crisis management to disaster risk management and crisis risk management. Thus defined, risk management as a process becomes the overall means of study, with exceptions being made for each field under the establishment of context.

2.2.4 Sector differences

The maturity of the various fields already discussed has taken place over many years and within varying sectors this development has taken on different forms and depths of study. This difference between industry sectors, whilst the fields themselves continue to develop concurrently, is one cause of the difficulty already witnessed in definition and understanding between similar professions (Dombrowsky, 1995). In order to advance the generic field of risk or disaster management there is a need to understand some of the differences in nuance and development within each sector.

Those industries with a high reliance upon technology and safety through technology have traditionally been the forerunners of disaster management development. This classification can include the nuclear industry, oil and gas and the chemical industry; all sectors which require a great deal of safety and precision to exist let alone prevent accidents. Through incidents such as the Three Mile Island incident, the Bhopal gas leak, the chemical explosion at Azote de France (AZF), and many more, we can see that the risk management conducted within these industries is not foolproof.

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Perrow argues that by the very nature of improving safety and risk management we as individuals normalise our risk taking behaviour, and this results in a normalisation of risk across industry (Perrow, 1999). He suggests that as high-technology industries become ever more technology based, and supposedly safer, “there is a greater level of dependency (tight coupling) within the safety system which, when breached, can lead to catastrophic failures” (Perrow, 1999, pp.8).

Other fields within the same industries have examined the importance of the human element both from the point of view of ‘human error’ and of improved training and selection. Reason began to examine highly safety-critical industries upon the supposition that so many accidents were being blamed upon so-called ‘human error’ (Reason, 1990 and 1997). He proposed that human error was better described as “systematic failure leading to the opportunity for an operator, or other, mistake to precipitate a disastrous event” (Reason, 1990, pp.174). Reason’s work in this field has been noted as of specific interest to this research project as he suggests a number of models with which industry can be addressed. Reason’s Resident Pathogen Model is examined later in this chapter.

In an attempt to address the human operator aspect of the high-technology industry some authors have proposed a greater emphasis on training, assessment and evaluation of those likely to be placed in highly-critical positions with these industries. Researchers such as Flin, Slavin and Cox, amongst others, developed more techniques for measuring the ability of those placed in highly safety critical positions, notably within the oil and gas industries (Flin, 1996. Flin and Slavin, 1996. Cox and Flin, 1998).

Yet the sector specific development is not limited to those industries with a high degree of physical safety. There have also been significant steps taken within the financial and insurance sectors. As previously noted the definitions of risk and the surrounding concepts have distinct meanings within the finance and insurance sectors. Risk within the financial sector is an interchangeable word for over-exposure; the potential inability to meet the costs of current investments (Cornelis, 2002). To this end the study of risk has

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been focused upon “the control of investments and the levels of restraint necessary within an organisational system to ensure compliance with the stated policy on risk taking, or the willingness to be at risk” (Bernstein, 1996).

Within these financial sectors there have been a similar supply of incidents with which to study and advance our understanding of risk management. “The collapse of Barings Bank in 1995, provided a chilling reminder of the necessity of risk management protocols and control systems. The latest event to highlight the plight of risk management within this sector occurred early in 2002 with a \$691m (£474m) loss amassed in the Allfirst bank in Baltimore, a subsidiary of Allied Irish Banks. Again this was a financial institution with strict guidelines and policies on risk management, however these were carefully bypassed, circumvented and ignored to devastating effect” (Robertson, 2003, pp.289). Events such as these show the continuing need for development of risk management practices within this sector and for further study of the implementation of these practices at the operational level (Bank of England, 1997).

From these industrial sector differences it can be argued that the sectors are highly similar, differentiated only by the implementation or operational phase of the treatment of risk (Bryson, 1997). One key fact that is highlighted by the studies involving high risk industries is the importance of the human element, the operators and the culture in which they exist.

2.3 Human system

Within the literature there are a number of references to the ‘human system’, referring to it as a social institution, an organisational behaviour and an environmental or legislative context. Drabek develops the concept of the human system as a source of reactive, post-event research into the effects of various disasters (Drabek, 1986). Whilst Quarantelli

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argues through a number of papers that investigation of the human system is crucial throughout the cycle of disaster (Quarantelli, 1978. Quarantelli, 1995. Quarantelli and Dynes, 1977).

The human system is broadly described in the literature as the “structure, organisation and interaction of people in a given community” (Drabek, 1986, pp.6). Or even more broadly by other social scientists as any system of interaction dependent upon people and not technology (Quarantelli, 1978. Fischhoff *et al*, 1981. Turner and Pidgeon, 1997). With this in mind the definition of human system can be opened up to include any community or population under investigation, or more correctly the mechanisms of interaction of any community or population (Granot, 1998).

Within the context of the human system there constantly appear two distinct terms that necessitate further exploration; organisational behaviour and culture. These two topics are closely related within the human system, and share a number of attributes, yet they have some significant differences as will become apparent.

2.3.1 Organisational behaviour and the effects of culture

“To study organisational behaviour is to study the factors that affect how individuals and groups act in organisations and how organisations manage their environments” (George and Jones, 1996, pp.4). This definition is clearly very broad indeed and it has been designed as such to accommodate the plethora of subjects involved internally to the organisation through its staff and stakeholders, and externally through the system in which it exists.

Organisations, whilst being made up of individuals have the capability to exhibit behaviour much as individuals do (Pauchant and Mitroff, 1988). A number of social scientists, psychologists and even psychoanalysts such as Sigmund Freud, contended that

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if many of the aspects of personality are unconscious to individuals the same is potentially true of organisations; some of their most important aspects are unconscious (Zaleznik and Kets de Vries, 1975. Freud, 2002).

In this realisation that organisations in themselves may contain some of the attributes normally associated with individuals it becomes clear that the social nature of risk will interact with organisations in much the same way as individuals and communities (Fink, 1986). Tierney, along with a number of other social scientists contend that believing in the ability to fully understand organisational behaviour is flawed as we still cannot fully conceive of the depth of personality or intricacy which is involved in complex organisations (Tierney *et al*, 2001). Thus the field and study of organisational behaviour is never complete but “characterised by a greater understanding of specific features of organisational behaviour leading to further knowledge of the whole” (George and Jones, 1996, pp.11).

These specific organisational features include such issues as culture, learning, diversity, perception, communication, teamwork, leadership and industrial movements such as total quality management (TQM), all aspects that recur within corporate academia and practice. In fact the study of organisational behaviour is “vast and dispersed over many subjects, with inconsistent points of origin” (Huczynski and Buchanan, 2000, pp.22). In fact many different disciplines have added to the field of organisational behaviour, from social scientists to management specialists to accountants and philosophers. All of these professionals have appended their own structures and methods of understanding organisational behaviour within their own contexts.

Culture is one facet of distinct interest to disaster and risk management professionals as it crosses the boundaries between the organisation and the individual within the human system (Schein, 1985). Organisational culture has been widely studied and there exists a fundamental paradigm within the research: that an organisation consists of individuals

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each with a distinct and separate culture or working method, whilst researchers still attempt to categorise the organisation as a whole (George and Jones, 1996).

Schein's cultural model has been particularly influential in offering both a definition of culture and suggestions for an approach to the study of organisational culture (Schein, 1984 and 1985). Schein defines culture as the "basic assumptions and beliefs that are shared by members of an organization", a definition which, although varied throughout the rest of organisational literature, remains generally unchanged in its meaning and use in the study of organisational culture (Schein, 1985, pp.7). The notion of shared beliefs and values is widely accepted by the literature and the field as the cornerstones of culture yet the understanding of culture does become more complex as the concept of safety culture becomes introduced (Adams, 2003). The investigation of safety culture as a distinct entity was kick-started by the increasing complexity involved in the analysis of modern disasters. It became evident through the analysis of incidents within the highly safety-critical and high-technology industries that at a contextual level, there are a number of common characteristics to each event (Toft, 1992).

As a result of this disaster management involvement a great deal of attention has been paid to the contributory causes in accident instigation including the realisation that the complex nature of causation has necessitated a "commitment to the recognition of the social and organisational contexts of incidents and accidents" (Toft, 1992). Reason contends within his Resident Pathogen Model that latent or cultural failures only become apparent when they coincide with a trigger event (Reason, 1997). Therefore in the study of the incident it can be "a common misconception to study the trigger and not the cultural element" which allowed the trigger to bypass organisational control components (Reason, 1997, pp.194). Following this realisation Reason, supported by other accident causation authors such as Turner and Pidgeon, argued that those concerned with disaster management and prevention must redirect their efforts to the identification of cultural and latent failures rather than the active or 'front line' failures apparent in socio-technical disasters.

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Organisational culture has not, however, been a simple subject to address. Culture, with its emphasis on shared beliefs, values and norms seeks to harmonise, across the organisation, a common belief in safety. In order to function at peak capacity the organisation must believe in its own safety, yet this belief can become self-perpetuating and ultimately not reflective of the actual risk faced by the organisation. "Through the successful development of corporate culture individuals within the organisation can become blind to its hazards" (Rasmussen, 1980, pp.22). In developing, and to an extent enforcing, a consistent corporate culture across an organisation there is a real danger that defiance or disagreement with this culture becomes an 'underground' or resistance movement giving individuals the opportunity to find subversive means of expressing their own beliefs rather than the those of the organisation (Linstead, 1995).

Thus the difficulty exists between the need to engender a culture of safety and the problems associated with enforcing or promoting a culture that does not reflect reality, or the individuals to which it must apply. The term safety culture itself does deviate somewhat from our previous understanding of an organisational culture. Rather than being merely a series of common beliefs, shared values and norms, the safety culture must be the interface between industrial 'best practice' and the environment in which it is taking place (Turner, 1997). Hence it must exist throughout the organisation but most notably at the operational level.

In this understanding of culture we can see that it has a number of effects and interrelations within organisations that must be appreciated in the study of disaster and risk management. Corporate culture must assist the safety culture, without promoting an unwarranted self belief in safety. Additionally the culture must extend throughout an organisation, most importantly to the operational level, and not reside only at a strategic, administrative, policy level (Smallman, 1996).

2.4 Industrial drivers

During the period of development of disaster and risk management, concurrent with the research and study of organisations, incidents and their social import a number of regulatory and societal changes have taken place which have significant structural impacts upon organisational risk management. The report from the Institute of Chartered Accountants in England and Wales (ICAEW), first published in 1999 was the first guideline from any chartered body for the inclusion of risk management throughout the process of organisations. The document was nicknamed the Turnbull Report after the chairman of the working party Nigel Turnbull, and is still referred to within industry by that title.

Boardrooms in the UK have also had to contend with the impact of a number of high-profile incidents affecting organisations' perception and reputation. This has led to a greater emphasis being placed upon risk management processes, although the depth of these processes within organisations is still questionable, as is their breadth across sectors and industries.

Finally the tragic events of the 11th of September 2001 in New York will never be forgotten. The significance and profundity of the events of that day to the fields of risk and disaster management are still being calculated. The impact of this day, and the subsequent business and social recovery, has in some ways fundamentally changed the approach to risk management in the UK, and yet in other respects it was a negligible, if tragic, industrial force.

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2.4.1 The Turnbull report

In September 1999 the Institute of Chartered Accountants in England and Wales published the 'Internal Code; Guidance for Directors on the Combined Code', otherwise known as the Turnbull Report (ICAEW, 1999). This report was based on the premise that "a company's system of internal control has a key role in the management of risks that are significant to the fulfilment of its business objectives" (ICAEW, 1999, pp.4). In turn this premise was supported by much of the material from recent research into corporate governance issues and a general call from industry for actual guidance in how to tackle risk management (Drennan and Beck, 2001).

The Turnbull report stated that "the board's deliberations [on risk] should include consideration of the following factors:

- the nature and extent of the risks facing the company
- the extent and categories of risk which it regards as acceptable for the company to bear
- the likelihood of the risks concerned materialising
- the company's ability to reduce the incidence and impact on the business of risks that do materialise
- the costs of operating particular controls relative to the benefit thereby obtained in managing the related risks.

Furthermore these factors must be included in the requirement by the ICAEW for companies to "identify, evaluate and manage their significant risks and to assess the effectiveness of the related internal control system" (ICAEW, 1999, pp.9).

These statements appear to be clear, concise and useful to organisations in understanding the necessary approach they must take in dealing with risks. Yet at no point during the report is there a prescription upon the means with which to carry them out (McGuinness, 2000). A key factor in the decision to develop and publish the Turnbull report had always been the need to allow organisations to conduct the process of risk management using their own methods and tailored to their own needs, however the result has been argued by

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some as a 'statement of best intentions' rather than actual guidance (Drennan and Beck, 2001, pp.4).

The Turnbull guidance came into effect as a requirement for all stock exchange listed companies in late year 2000 and, as such, has a great deal of potential for changing the nature of risk management in UK organisations. What this impact has been so far is still far from clear and hotly debated. The Sharman report of 2001 broadly praised the principles of the Turnbull report and recommended that it be adopted "as a basis for ensuring strong internal controls and management within the processes of government" (Sharman, 2001, pp.22). Whilst other reports and studies would indicate that these developments in corporate governance are far behind the global best practice as to make them outdated before their implementation (Smallman, 1999). Which ever is the case it remains to be seen how Turnbull has changed the face of risk management practice in the UK.

2.4.2 Reputation management

What can be seen as a business' most valuable intangible asset is that of its reputation. Reputation influences the buying behaviour of its customers and, to an extent, the success of a company (Nakra, 2000). The true value of a corporation's reputation is often not realized by the company's executives until adverse instances cause it to become the centre of attention (Nicolazzo, 2001). Reputation management as a subject has only recently become a topic in its own right, previously being merely one constituent part of the corporate communications field.

The rise to prominence of reputation management is due to a number of high-profile incidents which transgressed the normal bounds of emergency or crisis management to become greater issues for the corporate bodies concerned as whole. Incidents such as the Belgian Coca-Cola poisonings in 1999, the crash of an Air France Concorde jet in Paris

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in July 2000, and many others all serve to show the danger that organisations face far beyond the incident itself.

Each case has a valuable tale for strategic risk managers. The non-fatal poisoning of a number of children in Belgium was eventually traced to the only commonality in the cases, the soft-drink Coca-Cola, yet the exact cause and nature of the toxin remains undetermined. The damage to the company's reputation came from the simple refusal to acknowledge their product as the source of the toxin and the Government enforced recall of 65 million cans, and a lack of comment from senior management only served to heighten the lack of trust that was building between European consumers and Coca-Cola (Robertson, 2003).

Whilst the incident involving Coca-Cola was certainly a serious concern for both consumer and company, under different contextual circumstances this may not have been such a problem, reputational or otherwise. In the preceding months Belgian consumers had been embroiled in a continuing scare over dioxins within the food chain and as a result consumer confidence in food and beverage products was understandably jittery. Thus, context becomes crucial to the understanding of reputation management (Stauber and Rampton, 1995).

The crash of the Air France Concorde following the puncture of a tyre and debris penetrating the underwing fuel tanks was a tragic loss of life and a sad end to an era of aviation history (Byers, 2003). The immediate response of grounding the similar aircraft was understandable, the investigations into accident causation and remediation methods for the existing aircraft routine, what was not expected was the impact to British Airways's fleet of Concorde aircraft. The Concorde brand had managed to span the two different airlines even though the two fleets of aircraft had been subjected to quite different engineering remediation over the years for similar issues (Robertson, 2003). Hence the issue of reputation management is not only contextual to the environment but also to the brands concerned.

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From the cursory examination of only these two instances a number of issues can be developed which impact upon the operations of the strategic risk manager and the field as whole. However, what is not clear is the actual influence these issues are having within risk management in the UK.

2.4.3 September 11th 2001

The events of the morning of September the 11th 2001 will forever be etched into the memories of all who bore witness to that day's tragedy. The terrible loss of life in the World Trade Centre towers, the Pentagon and the four flights involved need no introduction or embellishment. However, the "impact of these events upon the risk management profession in both the short and long terms seem potentially highly profound" (Luongo, 2002, pp.3).

In the short term it would appear that the effects locally and globally within the profession were dramatic from accounts given by many of the disaster recovery and risk management professionals. From anecdotal evidence, risk management professionals were in high demand in the immediate aftermath. Yet there seems little academic reference to the effects that the event had upon the industry as a whole. Indeed there seems to be some indications that companies 'closed ranks' following the event and sought in-house expertise and solutions to risk management issues rather than seek external suppliers or involved extraneous risk professionals (BCI, 2002b).

Globally the events in New York had knock on effects upon all international business. Over fifty eight percent (58%) of all UK organisations had their business disrupted by the events and repercussions of that day, with almost thirteen percent (13%) being classed as seriously affected (London Prepared, 2003). This is clearly an effect that has found its way into the boardrooms of many organisations in an effort to safeguard those "most

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important goals of survivability and profitability”, as already mentioned as part of the crisis management phase (Shrivastava and Mitroff, 1987).

One distinct effect has been upon the focus of senior management upon risk management issues. As many professional journals are proclaiming senior management is more receptive than ever to spending resources to plan for major crises (Childs and Dietrich, 2002). Additionally there has been a great deal of rhetoric surrounding the events of September 11th in the mass media and as a sales tool for many companies seeking part of the risk management budget, yet it is still too early for long-term studies to show the real impact of the events of that day. Quick industry research serves to show some of the current developments within the industry, such as a lack of any real change to business processes in the aftermath to New York (Synstar, 2002). Hence the issues of how September 11th 2001 is changing the nature of UK risk management still needs to be addressed.

2.5 Models

2.5.1 Introduction

Throughout the development of the field of risk and disaster management both researchers and practitioners have developed models to illustrate their understanding of the processes involved. A number of models have set themselves apart over time showing their usefulness in describing the population or community of interest and shedding light upon the field of risk management as a whole. Three models of particular interest are discussed here for their usefulness to this research project. What follows is a brief examination of each of these models, their genesis and their prospective uses within the research project.

2.5.2 Reason's Resident Pathogen model

This model was developed, to a large extent, from anecdotal or case study evidence from a series of studies of 'socio-technical' organisational accidents. That is, accidents involving multiple levels of a system including both technological and human elements in the accident process, both causal and eventual. These processes are visually illustrated in some of the infamous high-profile accidents such as the chemical spill in Bhopal, the explosion of the Space Shuttle Challenger and the capsizing of the Herald of Free Enterprise ferry off the Zeebrugge coast.

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2.5.2.1. Latent and active failures

Similar to many accident causation models the Resident Pathogen model approaches these events from the viewpoint of the predominance of human error as the cited cause of accidents (Lehto and Salvendy, 1991). However, Reason expands this by determining two distinct types of error; active and latent failures.

Active failures are those created by the actions or inactions of front-line personnel and can usually be seen as the last event prior to an accident or as the first event causing the accident. Whereas latent failures are those events which occur some distance away from the accident temporally, usually by those in higher positions within the organisation. These types of failures may create the conditions which foster the previous type of active failure.

2.5.2.2. Pathogens

The model is based on the analogy of latent failures being likened to pathogens affecting the human body. Pathogens can exist without causing any disease but they produce conditions more likely to foster the disease itself. Hence any number of latent failures could exist within an organisation for many years before an active failure leads directly to an actual accident. This is a concept already highlighted within the discussion surrounding culture and organisational behaviour.

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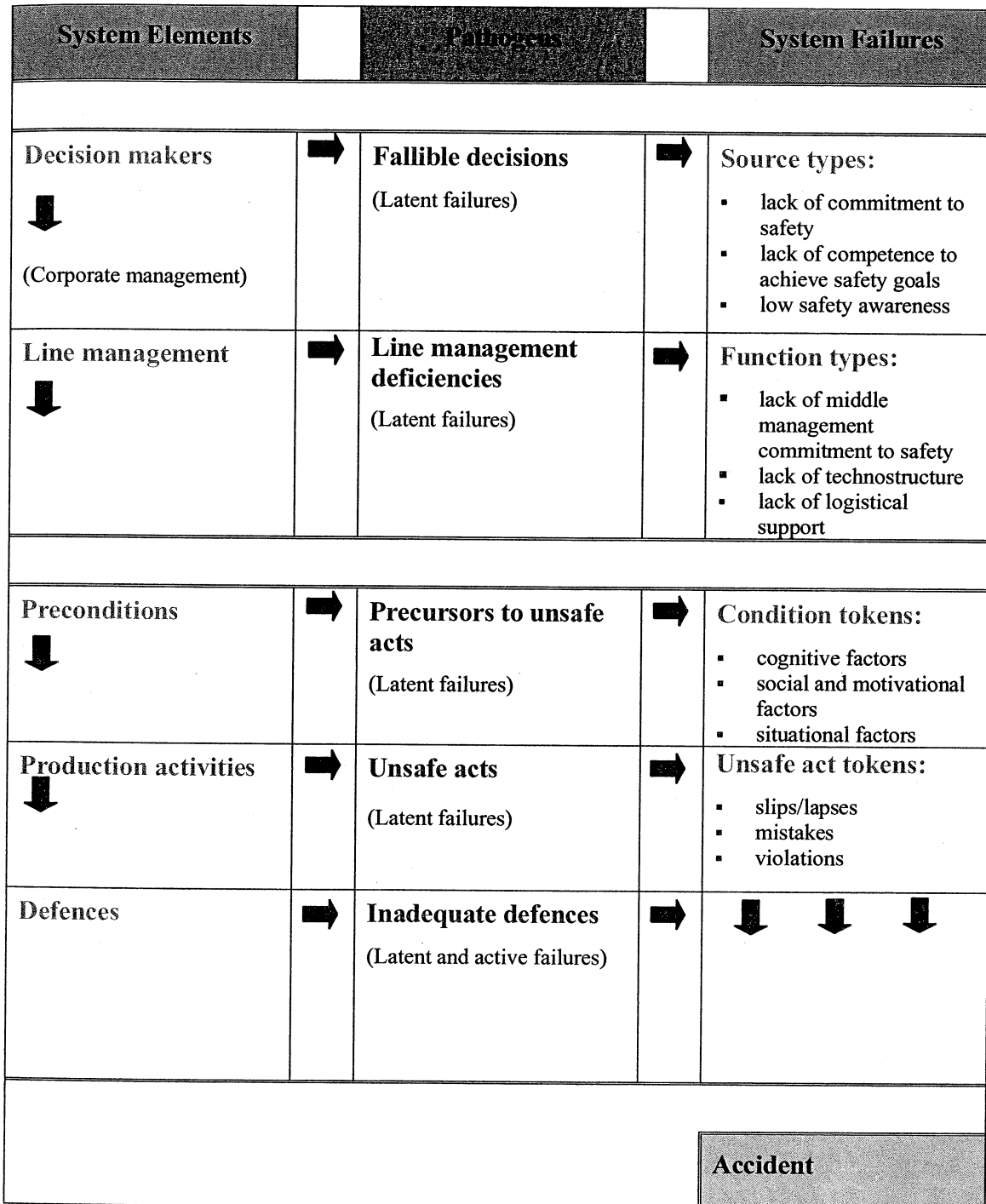


Figure 2.3 – Reason's Resident Pathogen Model

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The model is based upon a number of assumptions:

- the probability of an accident is a function of the number of pathogens present in the system
- complex, less transparent systems contain more pathogens
- simpler, more transparent and less well-defined systems require fewer pathogens to bring about an accident
- people in higher positions have greater potential for spawning pathogens
- local triggers are harder to anticipate
- resident pathogens can be proactively identified given adequate access and systems knowledge
- efforts aimed at identifying and neutralising pathogens have the greatest potential for improving safety.

The model (figure 2.3), works these two types of failures into a process identifying the types of failures prevalent at each level of the system. Notably, the model provides the delineation from simple accident causation to the active and latent elements. By defining the importance of latent elements Reason embedded the concept of human systems in this field and helped to generate the study of organisational culture as a latent existence within companies.

However, although Reason advocates an open systems approach the model does not specifically identify the influence of individuals or groups beyond the scope of the organisation under scrutiny. Hence, external factors with the ability to spawn pathogens are not recognised. This exclusion is indicative of Reason's work as a whole, as he tends to focus exclusively upon the intra-organisational processes. Contrary to this, other work, such as the ripple model, based itself upon the development of interactions between an organisation and its environment. In subsequent work Reason (1997) did go on to highlight the need to involve external influences upon the organisation in the evaluation of accident causation factors, yet this discussion was not carried forward into the model itself.

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The model has been applied on a number of occasions within high-technology industries. It has a proven track record with Reason's own work for assisting in the identification of latent, cultural elements underlying the accident causation trigger itself. The model could certainly be useful in the delineation between latent and active organisational factors.

2.5.3 Ripple model

The Ripple Model, developed at Cranfield University by Morley (1999), was based upon a number of other works and research included in this review but with the aim of viewing the factors influencing the creation of safety culture and not directly impacting or changing them. It sought to fill a gap described by the author as the lack of a model which would "explain the failure of many organisations to develop an organisational culture which would support safety initiatives" (Morley F, 1999, pp.i).

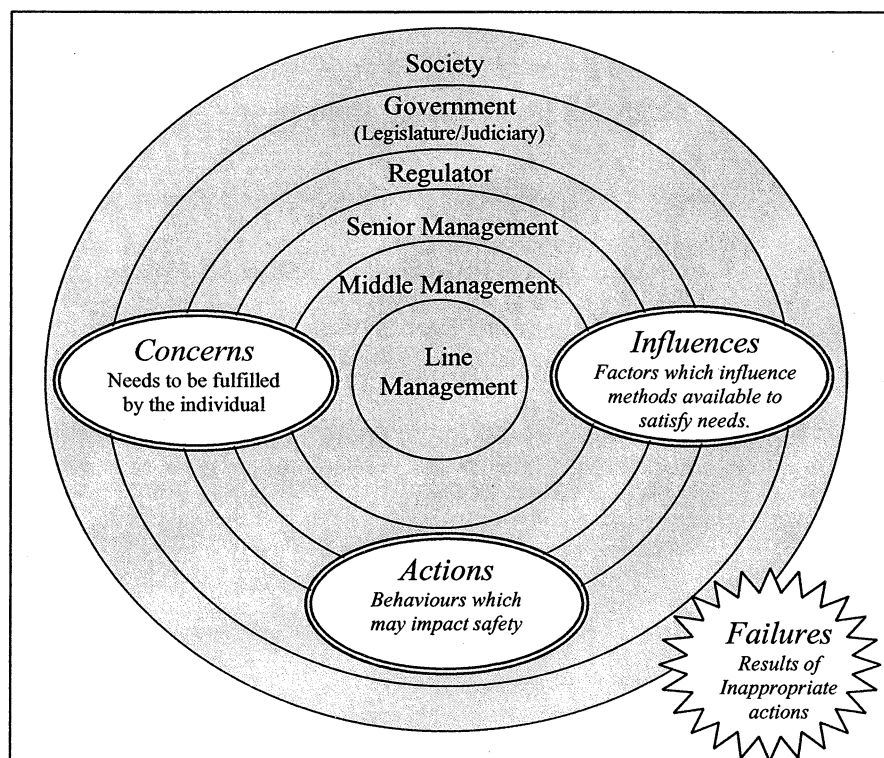


Figure 2.4 – Ripple Model of the creation of safety culture

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Morley's aim was the creation of a model to provide a framework for understanding the factors which underlie the development of a positive safety culture across industries. Yet this model has a significant impact upon all organisational culture models and concepts, most especially those relating to risk, as the concept of a safety culture is social as is risk.

The model:

- identifies the factors which contribute to the development of safety culture
- identifies levels within the system where these factors can be influenced
- aims to understand the sphere of influence individuals at each level may have on safety culture by identifying the issues which face these actors in conducting their tasks.

The model (figure 2.4) uses the metaphor of a stone thrown in a pond causing ripples emanating from the point of entry and continuing unchecked until they ebb. The point of entry can represent any point within an organisation from which a factor has impacted the surrounding levels of the organisation. In continuing the use of the pond imagery some ripples have the ability to be greater than others, dependent upon the impact they have upon the surface.

By carrying this idea over into the field of safety culture it means that any action, behaviour, value, attitude or belief within each system can ripple over into each other system. It is important to stress that the level designated as 'line workers' in the model may not always be the central point as the ripple could begin in any instance from any of the systems. The 'line workers' section being at the core is then merely a representation of the core of the business, the point at which the organisation can not be broken down any further in management terms.

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2.5.3.1. Open system

This is a truly open systems approach using levels beyond the normally top level of 'senior management', which recognises the impact that current, future and external activities will have upon any organisation. This is particularly evident when relating to legislative or regulatory changes such as the advent of the 'Turnbull Report', which are throwing stones into the pond/model at an ever increasing rate (Bergman D, 2000).

The six levels of the model are comparatively self-explanatory:

- Line workers - individuals at this level perform the essential work of the organisation. They are a resource used to achieve the senior management's objectives.
- Middle management - individuals are responsible for implementing policy through the administration of operational resources. They do not set strategic direction for the organisation.
- Senior management - individuals are responsible for strategy and establishing policy. They are unlikely to manage personnel directly but will likely have individuals at lower levels reporting directly to them.
- Regulator - within the regulatory authority individuals are responsible to ensure that the organisation, and the industry, functions within the limitations set out by Government.
- Government - for the model the Government level consists of individuals responsible for creating and interpreting legislation. The legislative function serves to communicate the level of acceptable risk within a given industry.
- Society - this level consists of all members of the general public whether a user/consumer of the organisation or not. The power of this group should not be underestimated by modern organisations.

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2.5.3.2. Concerns, influences, actions and failures

This model raises the question of what impact specific individuals have on safety culture and it is a question that has remained relatively unstudied without models and research such as this. It appears that upon considering the 'ripple' concept the interactions between parts of the system are complex and that at each level a number of contradictory goals are likely to compete for resources (Morley F, 1999). As such, simply stating a list of idealised actions to be carried out at each level would be a naïve oversimplification. Therefore, three system elements have been characterised as being important for the influencing of safety culture:

- concerns - the needs which are to be fulfilled by individuals at each level
- influences - those factors which determine the methods that are available to satisfy needs
- actions - behaviours which may have a positive or negative impact upon the human system.

A fourth element is also added to retrospectively affect the other three:

- failures - the result of inappropriate actions or inactions at various levels of the system.

This model interacts greatly with open system theories and as Morley states "it is only in understanding how social forces interact with physical forces that we can keep a given system from descending into chaos" (Morley F, 1999, pp.129). This model and others serve to reinforce a point made throughout this research project; that while we have studied what constitutes a 'good' safety culture and a preventative human system many organisations have failed to demonstrate this type of behaviour. This could be explained, in part, by the lack of any existent framework for change, a framework or methodology to assess current progress and expand upon it, to improve and augment existing practice.

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Morley's model was developed and tested across a wide range of industries to ensure its generic nature to safety and risk culture. Each level within the model was examined and the four descriptive elements (concerns, influences, actions and failures) were shown to be active across the entire model pool. Thus each of the levels and each of the elements combined provides a direct twenty four segment coding structure for future data coding, allowing each element to be broken down within each level.

2.5.4 Capability Maturity Model

The Capability Maturity Model (CMM) is a process improvement model, originally designed for software development by the Software Engineering Institute in the USA, in 1986. Various versions of the software have been released since 1991, the latest in 1999, when CMM was integrated into a wider software process package. Essentially it is a five level framework which guides organisations through the development process towards a culture of excellence (Figure 2.5).

2.5.4.1. Key Process Areas

The five levels of maturity indicate the process capability. The levels contain Key Process Areas (KPA's), which are ways of achieving goals. The KPA's identify a set of activities that are performed collectively to achieve an important set of goals for process capability enhancement. They are organised by their common features, and address the implementation issues. Within those common features are key practices, which describe the infrastructure or activities. The levels of maturity are characterised by their process areas.

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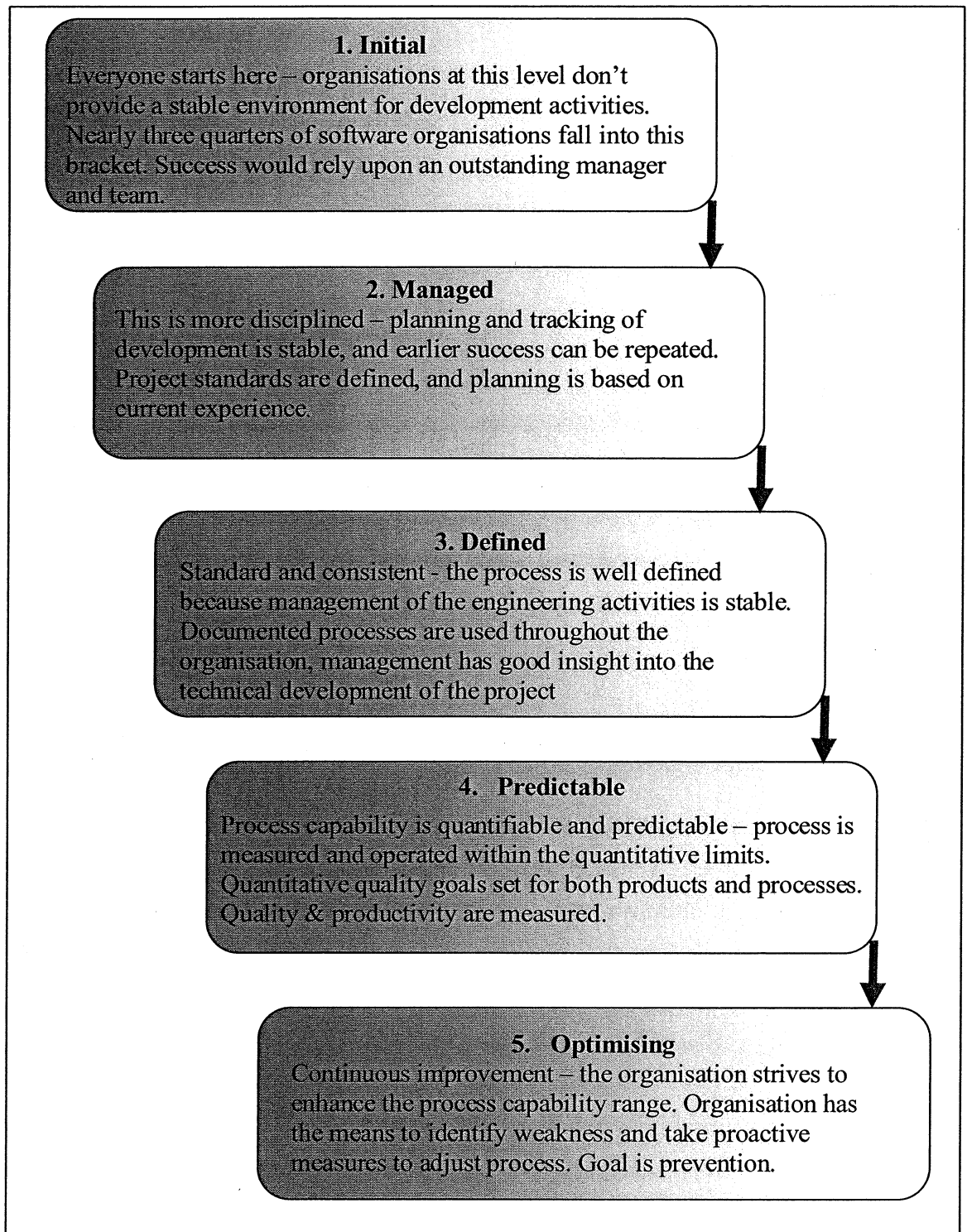


Figure 2.5 – The five level framework of the Capability Maturity Model

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The framework for process improvement provided by the CMM can go a long way toward improving the ability of an organisation to be successful project after project. However, there is a danger that within process improvement, as CMM was designed, the constant goal of improvement in the framework can become the objective instead of focusing upon the goal of improving the organisation and measuring it with CMM (Persse, 2001). Thus it should be used as a guide, a benchmark tool from which to focus improvement efforts. Following the use of CMM in a number of different industries, including a number of implementations within the emergency management context, CMM has proved its worth as a benchmarking and improvement monitoring tool (Jones, 2003).

2.6 Industry snapshots

2.6.1 Introduction

In order to illustrate some of the issues developed through the literature and to demonstrate the real-world circumstances that surround the theory and practice of risk management some snapshot analyses cases follow. The exploration of these cases is not intended to be exhaustive or to refute existing enquiry but to highlight a number of issues surrounding strategic risk management, notably the effects of culture, latent failures, pathogens, accountability and the risk management process. These cases provide the research project with a link to reality and a reminder on the importance of strategic risk management.

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2.6.1.1. Selection of cases

The two cases that follow were selected using various criteria. Firstly they needed to provide a studied historical time-line of development from well before the incident itself, to allow the understanding of a pathogen trail (Reason, 1990). Secondly they had to be events that had been scrutinised in great detail already to allow for a wealth of information on the subject and hence no great reliance upon a limited field of knowledge open to bias. Finally the events had to be of a significant magnitude to have elicited a major review of the system concerned and the processes which led to the creation of the incident.

For the reader who may be unfamiliar with the actual cases that follow there will be a brief outline of the events immediately leading up to the incident, the incident itself and the relevance to the current discussions. These explorations into the incidents could never hope to match the depth of scrutiny that has already been levelled at each incident, they are merely intended to show relevance to the risk management process.

The two cases selected are from quite different industries, with very different genesis and outcomes. The first is the explosion of the Challenger Space Shuttle during takeoff in 1986 and the second is the collapse of Barings Bank following the massive losses incurred between 1992 and 1995 by the trader Nick Leeson. These two instances have vastly different origins and effects yet the organisational processes involved that led them to the point of failure are important if we are to understand the strategic risk management process.

2.6.2 The explosion of the Challenger Space Shuttle

On January 28th 1986 the Space Shuttle Challenger, on mission 51-L, exploded 73 seconds after launch instantly killing the seven NASA crew on board and reducing the shuttle to little other than fragments. Following days and weeks of intensive scrutiny the

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official report concluded that the explosion was due to the failure of an O-ring seal on a booster rocket, leading to the escape of hydrogen and the resultant explosion of the remaining fuel (Rogers, 1986). However, whilst this was the precipitating trigger which caused the explosion the report, and many other documents published at the time, also investigated the reasons behind this technical failure and discovered an entire series of management and technical decisions, actions, inactions and beliefs that led up to the point of launch that morning (Feynman, 2001).

It became clear in the aftermath that existing problems with the O-rings malfunctioning at low temperatures were known and understood by NASA and the manufacturers of the booster rockets, Morton Thiokol (Rogers, 1986). This portion of the investigation then formed most of the press articles at the time, painting a picture of the management as incompetent at best and evil at worst. These analyses “conveyed an imagery of evil managers, so that the incident appeared to be an anomaly; a peculiarity of the individuals who were in responsible decision-making positions at the time” (Vaughan, 1996, pp.11). Yet in further analyses since the event from authors such as Vaughan (1996), Casamayou (1993) and one of the official reports own authors, Feynman (2001), clearly shows that this was not the entire story. In fact there was a series of factors involved and the technical issue had, perhaps, “the least importance of them all” (Feynman, 2001, pp.8).

2.6.2.1. Decision making

Decision making was blamed consistently for the decision to launch in the knowledge that the O-rings were susceptible to failure in the conditions given that day (low temperature). Yet behind these decisions were a number of beliefs that were commonly held within NASA, and their suppliers, at the time. These beliefs were “so ingrained to the organisation(s) that they were undoubtedly a culture” and as a result the decision to launch was by no means an anomaly but a normalised balance of ‘acceptable risks’ (Vaughan, 1996, pp.34). These acceptable risks were detailed in manuals within the administration, with entries for weight, temperature, accuracy and a myriad of other

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tolerances within which the organisation would still proceed. Living with a huge quantity of 'acceptable risks' just to operate on a daily basis the organisation 'normalised deviance' (Vaughan, 1996, pp.42). That is they created a normal working environment and culture based on deviance from the norm.

2.6.2.2. Context and conflicts

Not only did a culture develop within the administration and its suppliers but the wider context of the era played a significant role in the decision to launch (Feynman, 2001). Pressure was being placed upon NASA for significant results in their expeditions into space. The American public opinion and joy of having succeeded in putting men on the moon and in space was ebbing and, as a consequence, the vast funding required by the administration was increasingly under threat (Perrow, 1999). A delayed or failed launch could have considerable impact upon future funding and public support as a whole.

Conflict was also evident in the interactions between management and engineering levels of the administration and their supplier. Those managers who did not come from an engineering background did not fully understand the data presented to them by the engineers pre-launch and the engineers did not manage to persuade the management that launch at such low temperatures was far outside the operating limits of the O-rings (Perrow, 1999). With this lack of understanding came the knowledge that the decision for launch rested upon the shoulder of the managers and the pressures for launch overpowered any information they received from the engineers. Not only was the risk behaviour normalised deviance it was also a display of management power over subordinate departments (Perrow, 1999).

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2.6.3 The collapse of Barings Bank

February 26th 1995 saw the collapse of Britain's oldest merchant bank, Barings, due to insurmountable losses totalling in excess of eight hundred and twenty million pounds (£820million), far outstripping the capital and investments of the bank. The losses were directly and quickly attributed to one individual within the Singapore office, Nick Leeson. Over the course of three years Leeson had made consistently bad trades leading to losses, yet he had managed to fool the organisation and management into supporting his losses with further investment and cover the losses in highly creative use of accounts open to him (Rawnsley, 1995).

In his position at Barings Securities Singapore (BSS) Leeson had taken on the role of general manager, yet he then went on to trade, after passing the trading exams, and managed the accounts (back office) as well. This gave Leeson a role unprecedented within any Barings company – he had no management senior to him in Singapore and through the matrix-management system within Barings he had no direct line manager elsewhere either (Bank of England, 1996). An internal merger was also underway which was taking a great deal of management time away from day managing to rearranging the organisation's structure. This merger was almost certainly a major distraction to the London offices and as such a further assistance to Leeson's activities at BSS (Bank of England, 1995).

Throughout the investigations into Leeson's activities and his subsequent prosecution it became clear that whilst an individual was to blame for the losses themselves the Bank and its management shared responsibility. The Bank of England official report on the collapse stated that they considered "that those with direct executive responsibility for establishing effective controls must bear much of the blame" (Bank of England, 1995, pp.13.11). There were a number of issues within the organisation and the management that are of particular interest.

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2.6.3.1. Controls

Shortly after arrival at BSS in 1992 Leeson set up an account numbered 888888 which he later claimed to have used to cover up losses by one of his junior staff members (Leeson, 1997). This account was then traded upon and accumulated his losses over the next three years. Although there was a system in place to review each account, Leeson's unique position with BSS ensured that no one was supervising him or his accounts (Bank of England, 1995).

Leeson had managed to take on the role of general manager in Singapore but quickly assumed the two further roles of head trader and accounts, a conflict of control that was left unnoticed or unchanged by Barings' management for the subsequent three years (Rawnsley, 1995). Through this lack of individual control Leeson was able to simultaneously use account 888888 to trade, and lose with, and still manage accounts in such a way as to cover the losses. In order to physically cover the losses made Leeson had to obtain the capital from other parts of the business. To do this he requested sums of money to cover costs that the company was not obligated to, instead the costs should have been passed to customers without any expenditure from BSS (Rawnsley, 1995). Additionally the sums being requested were vastly inflated from any real potential costs that these expenditures would have incurred. Neither of these facts were remarked upon or noticed by London management.

In 1994 the main Barings' companies were developing a specific risk management function to the organisation, instead of the previous emphasis on the general managers being responsible for traders' risks. While risk controllers were appointed to positions in London, Tokyo and Hong Kong there was no similar position created in Singapore (Bank of England, 1995). Had any one of these individual failures of the organisation to control the activities of BSS been addressed before November 1994 it is possible that the two hundred and eight million pounds worth of losses may have been survivable by Barings (Rawnsley, 1995).

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2.6.3.2. Risk and reward

In addition to the issues of control a number of organisational factors were brought to light in the subsequent investigation and analysis. Notably, the apparent success of BSS and Leeson's operations. The market BSS was trading within is considered a low-risk and low-return marketplace, trading in futures and options orders, and arbitraging price differences between Nikkei futures traded in Singapore and Japan's Osaka exchange. This low-risk/low-return was not expected to make a great deal of profit, especially during a time that other businesses were finding it difficult to make profit on these markets (Rawnsley, 1995). However, "when Leeson posted twenty eight million pounds of false profit on this market for 1994 there should have been alarm bells ringing somewhere" (Rawnsley, 1995, pp.33). This profit did raise some eyebrows, but an internal audit concluded that the profits were due to Leeson's exceptional abilities and there was concern he could be 'poached' to work for a different company.

A significant role was played by the 'risk versus reward' culture of Barings at the time (Fay, 1996). The risks within the Leeson's markets was considered low, and the subsequent reported profit resulted in considerable rewards for the traders, heaped upon their already lavish wages (Rawnsley, 1995).

2.6.4 Conclusions

From these industry snapshots we can see a number of the factors that were highlighted within the literature. Issues such as culture, risk management processes, controls an context have been emphasised within actual cases, showing the links between literature and industry. The value of these snapshots is in providing some guidance for the research project in terms of coding and interpretation of existing models.

2.7 Gaps in knowledge

The discussions surrounding existing literature, industrial drivers and even previous cases of failure are punctuated by those topics about which we still lack a true understanding or clear explanation. As we examine terminology within the subjects it becomes evident that the language upon which these professions trade is confusing and rife with the potential for uncertainty. Even the definition of risk itself leads to a terminological debate before further discussion of the field can be entertained to ensure agreement of basic vocabulary. To paraphrase George Bernard Shaw we, as risk managers are a series of professions “separated by a common language”.

In addition to the difficulty proposed by language there appears to be a lack of research that transcend industrial sectors. Whilst safety critical industries have spawned research into modes of failure and methods of management there appears to be relatively few investigations of holistic risk management practice. It is this level of risk management, examining strategic organisational issues and not merely sector specific hazards which is of particular interest to this research project.

In recent years there have been a number of major industrial changes and events which have taken place. Each of these events has been heralded within the field as having a tremendous potential impact upon the profession and the application of risk management. As examples; the Turnbull report and the events of September 11th 2001 were both anecdotally considered to be turning points in corporate risk management practice. These are just two industrial changes which have been debated and deliberated upon within the risk management industry, yet there has not been any significant academic research into what impact these events, or others, may have had into driving or changing UK risk management practices.

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These events, and their potential for change in the risk management industry, lead us towards a further deficiency in our knowledge. If these events have not been widely researched and examined then what is changing the nature of UK risk management practice? What is driving forward best practice and how businesses and professionals are treating risk? There are numerous industrial articles and trade journals which contain anecdotal or subjective indications yet there seems to be a lack of academically based research into the current practice of risk management in the UK.

2.8 Summary

This chapter has detailed some of the seminal works and concepts which establish and define this field of study. There has been a discussion surrounding some of the issues involved in current risk and disaster management, notably the difficulty in raising a consistent definition. An examination of the development of the current fields has shown the risk management process as being of particular definitional and structural interest.

A number of the current issues facing industry have been brought to light and there appear to be minimal current answers to the questions they raise. Especially if the general question is asked; how are they affecting risk management practice? Additionally, the existing models, whilst being of interest in their own rights, each show deficiencies if we try to apply them to our goals of strategic risk management. Therefore, their use is constructive in the application of existing knowledge but development of a new model may prove necessary to fully encompass the field, as described by the research findings. Bearing these findings from the literature in mind and in the knowledge that some models to assist the research do exist, it appears that there is a gap in our current understanding of the field. We have theory and some practical models, but neither of these fully satisfies our understanding of contemporary risk management practice within the UK, and they certainly do not provide an appreciation of the effects of recent events within the industry.

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Chapter 3

RESEARCH METHODOLOGY

3.1 Introduction

This chapter is an investigation into the various research methodologies available and an examination of those most suitable for this research with details of the decisions that have been made in selecting the final approach. The methodology used to carry out any research is of critical importance as it will determine the entire process of setting out and answering the research question. Integral to the determination of the process are a number of contextual issues that need to be examined before an appropriate research design can be found.

3.1.1 Participant Confidentiality

Before any methodological discussion is undertaken and any research process is decided upon, it is essential that the confidentiality of the participants is assured, and stated, from the outset.

Due to the highly sensitive nature of the data collected, relating in many cases to legislative requirements, company policies, commercial advantages, business processes and structures (as mentioned in Chapter 2) it is imperative to note from the outset that all organisations and individuals involved in this research must be assured total confidentiality and anonymity throughout the process.

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During the research some of the sectors or business areas in which participants work, or organisations are involved, may be mentioned where it is appropriate and necessary to do so. Here it is essential that the confidentiality must remain so that no single individual or organisation can be identified.

3.2 Deductive and Inductive Approaches

To form the basis of any research, the method of reasoning, of approaching that research, must be decided upon. This reasoning will define the approach to the research as a whole. The two systems of reasoning described here form the basis of nearly all types of research and of logical reasoning. Deductive reasoning could be termed as the ‘traditional’ scientific approach, which involves drawing conclusions from specific outcomes. This can be observed within the realm of physics in the folk tale of Newton’s discovery of gravity. Newton sat under the tree and an apple dropped upon his head, hence he deduced that a force must have been acting upon it, which was gravity. Thus, one specific outcome can draw a specific conclusion.

Contrary to deductive reasoning, there are situations where specific conclusions cannot be drawn so easily because of more complex outcomes or conditions that are being observed. In these cases, the researcher may draw a general conclusion from the outcomes presented and this conclusion may not necessarily be the absolute truth, merely a part of it. For example, Newton may only have observed the apple falling as the harvesting of the apple was taking place. Hence, he may have to include a number of complex factors in his reasoning of why the apple fell. In this form of inductive reasoning it is always possible that further research may dispute or refute the initial conclusions. Inductive reasoning and research has been most useful for socially-based research as people, no matter how carefully chosen, sampled or balanced, harbour a great variance which makes deductive thinking perilous.

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This is not to say that each is exclusive to the other and there is a great deal of interest in how they may interact and add value to the outcomes and conclusions of the other. This section outlines both of these forms of research and considers their use in the research strategy for this project.

3.2.1 Deductive Research

Deductive research starts from the more general and works towards the more specific (Trochim, 2000). This could be viewed as a top-down approach (see figure 3.1) as the process begins with a general theory, problem or question which needs to be investigated relating to the overall topic of interest. This is then refined and narrowed to a hypothesis that can be specifically tested for proof or fallacy. Indeed, some authors may refer to this method as the 'falsification method' (Blaikie, 1993) as a scientist sets out a hypothesis in order to refute it and, hence, prove its fallacy. This sets out one answer; that the hypothesis is not true.

The hypothesis set out must be in a testable format, hence it must be capable of being operationally examined (Robson, 2002). It must set out exactly how the variables involved can be measured and compared, and identify a specific relationship between the two variables involved which can then be described by the outcomes of the testing.

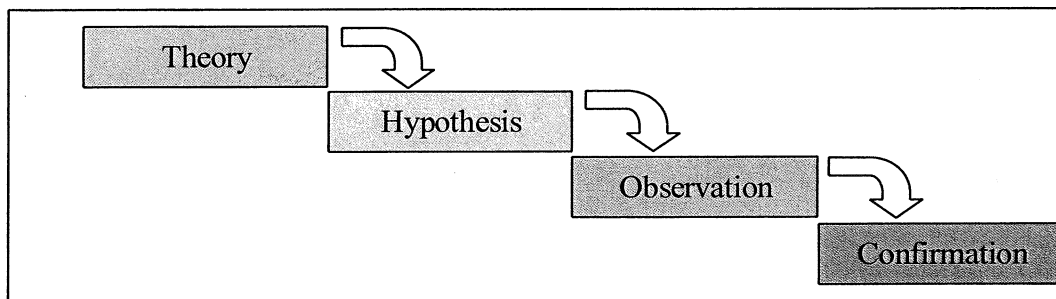


Figure 3.1 – Deductive Research Process

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This hypothesis is then observed or tested using some form of enquiry or experiment which produces data or information that can either confirm or deny the applicability of the hypothesis and, consequently, the theory. Of course, the data produced may show the need to modify the hypothesis in light of the outcomes which might not be a categorical rejection of the original, but a change that allows more definite results to be found. It may then be necessary to repeat the previous steps to fully confirm, or prove wrong, the hypothesis.

As many people, both lay and those involved in scientific research, may view this as the classical method of research it is important to note some of the inherent weaknesses that the approach can harbour. Whilst the process of conducting and testing the hypothesis is seen as highly deductive and scientific, the starting point of the entire process, the theory itself, isn't called into question. The theory is therefore a subjective entity which will influence the hypothesis and the outcomes from the very outset. Some authors, such as Blaikie, argue that this subjectivity means that the very theory upon which all of the investigation is based is, in essence, inductive. Without addressing the issue of the development of theory then deductive reasoning becomes, merely, one more facet of inductive reasoning.

Additionally the narrowness, need for specificity and lack of scope for development during the research process means that research cannot react to external factors as they occur. If an issue was not considered at the outset, during the development of the theory and hypothesis, it therefore cannot be tested.

3.2.2 Inductive Research

Inductive research can be seen as a reversal of the process undertaken in deductive research shown in figure 3.2. Inductive research starts from specific observations and moves towards broader generalisations and theories. This could be described as a bottom-

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up approach. This approach describes the process of making observations from the research area of interest, and, from these, begin to detect patterns and regularities. These patterns can then be developed into tentative hypotheses that can be explored, finally ending with the development of some general theories.

The emphasis throughout the inductive research process is placed upon the method of analysis used, as this will directly influence the outcomes of the research and the theories developed. A number of methods of analysis are detailed later in this chapter.

Whereas the deductive approach means that a researcher must develop very specific questions and hypotheses that require answering, the inductive approach investigates, through open questions, and most importantly, with an open mind. This approach must take place without prior bias or assumptions being made upon the research. It is therefore essential that the data must influence the development of hypotheses and theories rather than the researcher. Additionally the inductive approach is based upon the supposition that all science comes from observation (Blaikie, 1993), such as the example of Newton, and that these observations are grounds for the development of knowledge.

A number of reservations have been raised by authors such as Blaikie and Trochim with regard to using an inductive research method. Most notably, this is the difficulty and danger of drawing hasty correlations from the observations. Simply because the observations made in the research are true, does not necessarily lead to a direct

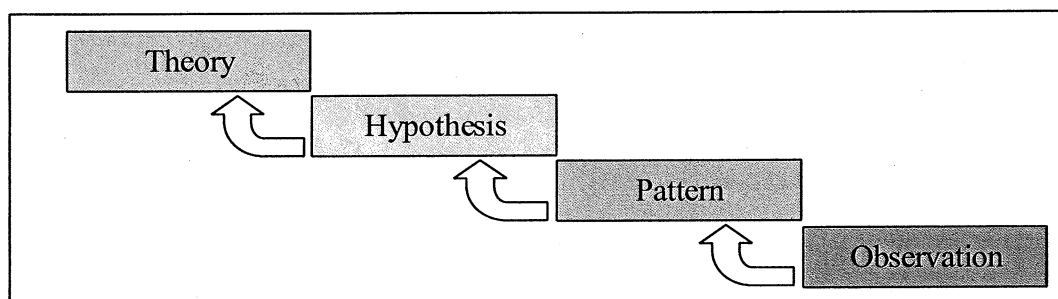


Figure 3.2 – Inductive Research Process

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correlation or relationship, meaning that the conclusion may still be false. Thus, the observed phenomena could, in fact, be the result of other, as yet unexamined, factors. It may just be that the results observed do correspond in a similar manner, and hence show a correlation of sorts. An example may be the observed correlation between employment and gender. An organisation may have unusually high (over 90%) rate of male employees, compared to female, but does that necessarily mean that the company is sexist? Or are there other factors at work that have not been examined?

In order to reduce the possibility of incorrect conclusions being made during inductive research, the number of observations can be increased. Consequently, this adds more weight to the conclusion upon every observed agreement with the initial conclusion. However, it can only ever decrease the likelihood of an incorrect conclusion and never eliminate it, so the difficulty remains of when to stop the observations and assume that the conclusion is as correct as it can be. In fact, in order to make the conclusion 'flawless' the observation would have to continue ad-infinitum and this is not practical within the real world of research. Therefore, all inductive research has to come with a caution that its conclusions apply over the period of observation and within the context of that observation.

In light of these short-comings it is worthy to note that inductive reasoning still provides an open-minded approach to research, where the data/observation is allowed to drive forward the research hypotheses and theory. This is especially important where socially-based, experimental, or fact-finding research is concerned as the knowledge is derived from the observed reality and not from an already deduced belief (Trochim 2000).

3.2.3 Uniting Deductive and Inductive Research

Whilst the two methods of reasoning, and hence research, may appear to conflict by nature they do both have important roles in a research process. Even though a project

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may appear to be purely deductive in its approach (such as the testing of a very specific hypothesis to a certain set out of outcomes; especially prevalent in medicinal drug testing) most, if not all social research involves both inductive and deductive research at some point in the process (Trochim, 2000). This can be seen as due, in part, to the arguments laid out in section 3.2.1 – that the very development of a theory is an inductive process.

So the two methods can actually feed into one another as a cycle. Even the most controlled experiments exhibit patterns within the observations and data that can lead to new refinements to the original theories or develop new ones. One such model of cyclical interaction was put forward by Wallace (referred to by Blaikie, 1993) which is shown in simple form in figure 3.3. It is therefore possible to begin research at any point during this cycle. The argument that the initial theory, even in deductive research, is developed inductively supports this proposition as the research can be picked up from any point and can use both inductive and deductive methods.

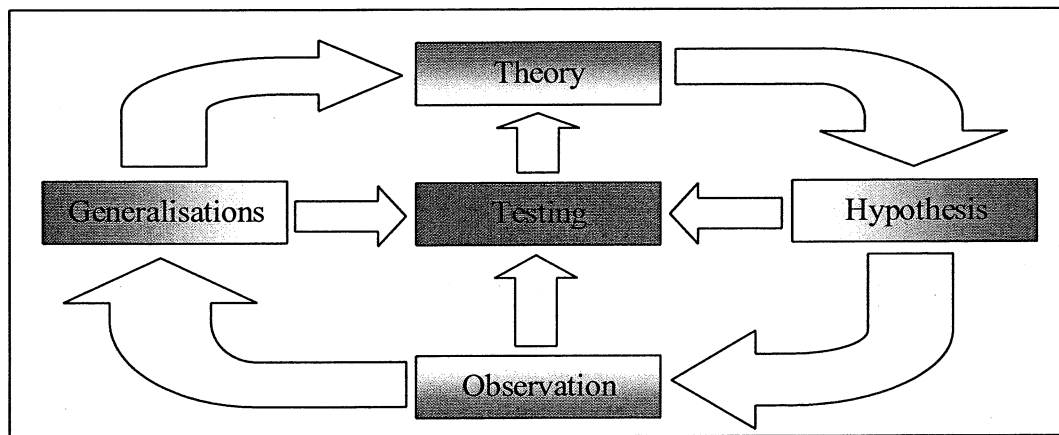


Figure 3.3 – Uniting Deductive and Inductive Research

For instance, it may be true that some inductive activities need to be conducted as an exploration of the field before a theory can be formed. Similarly, a theory may need refinement as the research is undertaken in order to include emerging themes or areas of

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interest. To include this element of 'feedback' in the system Wallace introduces the central stage of 'Testing' which can feed new themes or emerging results back into the original theory.

Based on the principle that both inductive and deductive reasoning can be used effectively, and in combination, for research, this project applies the two methods throughout. The initial need to find out what issues are having an impact upon the field of risk management means that a fairly inductive and exploratory approach is necessary. However, some existing knowledge, literature and previous experience and practice means that the inductive process can take into account some existing informal hypotheses and does not need to start from a complete blank canvas. Additionally, the research can be more targeted in terms of sample groups based on the need to find appropriate and relevant data.

3.3 Potential Research Strategies

There are a wealth of potential research strategies which could be chosen for any research project and these will define much of the approach to the project as a whole. They will indicate whether an inductive or deductive approach should be used. Blaikie states that the research strategy is the step linking the researcher with the actual method of collecting data. Whilst the inductive or deductive approach has an impact upon the reasoning used and formulation of hypotheses, the research strategy defines how the project as a whole can be tackled and how to actually source the data from the research interest (Trochim, 2000). This section sets out a number of potential strategies available and outlines the reasons for the choice of research strategy for this project.

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3.3.1 Case Study

Case studies have become a common technique in research projects, so much so that they are now described as a form of research strategy, although this is not actually true. A case study is not a methodological choice but a choice of what is to be studied (Denzin and Lincoln, 1994). So a case study is in fact a study of a single case, regardless of the actual method of study undertaken.

However, case studies have become a widely used and accepted tool for gathering a broad range of information about a specific topic, especially useful in gathering contextual and historical information (Trochim, 2000). This information relates directly to the subject of interest and, as such, can develop a very in-depth view of one subject of study. The disadvantage is therefore that because it is the study of one case, the findings are difficult to generalise to a larger population or sample, and in many cases (even if the study replicates exactly the same steps), the findings lack repeatability.

This research strategy is not considered to be of primary interest to this research project as the in-depth nature will restrict generalisation to the wider field of risk management. However, the use of specific studies or case study information could be used in illustrating the findings during other research strategies, and has already proved constructive in demonstrating some of the industrial drivers in Chapter 2.

3.3.2 Ethnography

Ethnography can be seen as a branch or, at least, a close relation of anthropology and, as such, is concerned with specific people, races or cultural groups (Denzin and Lincoln, 1994). Some authors, such as Denzin or Trochim may even refer to this form of research as descriptive anthropology, best described as the science devoted to describing humankind's way of life (Denzin and Lincoln, 1994). This research strategy can glean a

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wealth of information and data from the subjects and can focus very quickly on emerging subjects of interest. It can also gain a great deal of knowledge into the specifics of the sample group.

To conduct this form of research the researcher must become part of the sample group, to interact with the participants and, to an extent, become one of them. Herein lies a serious disadvantage to this research strategy. In a similar fashion to the paradigm of ‘Schrodinger’s Cat’ within physics, how can one measure something which is being affected by the researcher already? Schrodinger’s cat is inside a closed box, but without opening the box, and hence affecting what is inside, how can the researcher understand what is going on inside the box? The researcher cannot glean the same level of information from being external to the group, but by being internal to the group the influence of the researcher cannot be negated.

A most notable drawback to this approach is the factor of time. Traditionally, ethnographic studies take a number of years to complete which proposes a far greater level of involvement than this single research project. Newer forms of the ethnographic approach have tried to drastically reduce the amount of time it takes to conduct this research but this inevitably questions the balance between depth of data and speed of collection. When the aim of ethnography is to gain an intimate understanding of the sample then the haste become self-defeating (Robson, 2002).

This research project does need the kind of rich and descriptive information that an ethnographical or anthropological research strategy could reveal. But the downside of influencing the sample group is too great to use this methodology. Additionally, the means of conducting this research would be an in-depth and time consuming research project within a specific sample group. This is simply not practical when aiming to gain information about a broad range of sectors, industries and businesses whose commonality is one strategic decision-making process – risk management – and whose participants are geographically and physically disparate. Secondly, the danger of the researcher directly

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influencing, or at least having an impact upon, the group would be too great, as the researcher concerned has already been involved in the risk management field and their presence in a sample group would have some bearing on the results. Above these two factors the real-world limitation of time, especially as this is a single research project and not part of a greater whole, suggest that this is not the approach to take.

3.3.3 Phenomenology

Literally described as the study of events, phenomenology is focused upon incidences and how the individual experiences them (Trochim, 2000). It is interested in the single experience and perception, and hence has a relative disregard for the reality of a situation beyond the bounds of the individual. Phenomenology can be described as a method of trying to understand how an individual perceives and constructs their own reality, based on the knowledge and situation they experience (Robson, 2002).

An advantage of this form of research strategy is the highly detailed and specific nature of the data that can be collected from the participants as to their view of the situation, or subject. However, the individual and perception-based elements of the phenomenological approach mean that the participants can bias their own 'facts' and the information becomes based on highly personalised and subjective experiences (Denzin and Lincoln, 1994). This research project needs to examine a broad range of participants and needs to relate the data to the risk management field as a whole, which cannot be performed if the information is overtly biased by the sample group. However, the phenomenological approach can be strengthened when combined with an area that it definitively lacks, that of external reality (Trochim, 2000). This external reality can come in the form of documentation to confirm or deny the propositions and statements made by the participants.

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If this external reality information can be used, this form of research strategy may become useful. However, without corroboration such as this, phenomenology must be discarded as a research strategy.

3.3.4 Historical

In a similar fashion to that of case study, the historical method is not truly a method unto itself, but is, again, a description of any type or method of research focusing upon the history of a reality. This history regularly refers to documentation such as letters, newspapers, company documents, diaries and all forms of records that were pre-existing to the research project (Denzin and Lincoln, 1994).

The historical research strategy is easily criticised as the documentation can be highly biased in nature due to the views of the authors, the eminent beliefs at the time of writing and any editing subsequent to publication. This is a research strategy especially open to the impact of bias in the data and, at the extreme, this bias could be classed as propaganda (Denzin and Lincoln, 1994).

Even with these disadvantages, the historical method does hold some weight when combined with other forms of research (Trochim, 2000). By using documents that relate directly to previously collected data it may be possible to at least add weight to, or in some cases, confirm specific findings. Likewise, it may be possible to refute or negate the subjectivity of a specific research method, such as the phenomenological approach.

However, the danger with this use of the historical method is that it may do neither of these things and can, in some cases, add a level of confusion and chaos to the research that cannot be easily removed (Denzin and Lincoln, 1994). For this reason, and the others discussed, this research strategy is not considered to be of primary interest as an approach.

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3.3.5 Action Research

This research strategy has seen a great surge of activity in recent years promoted by some practitioners as a moral responsibility to do work that is socially meaningful and changes the situation for the better by their involvement (Denzin and Lincoln, pp.1994). Action research is defined as: “Research becoming praxis – practical, reflective, pragmatic action – directed toward solving the problems in the world” (Denzin and Lincoln, 1994, pg. 32). This approach operates quite contrary to forms of traditional, laboratory science in which the researcher seeks to minimise the affect of the researcher upon that which is being researched.

It embodies a key shift in the researcher’s thinking – that instead of distancing the research premise from the researched sample they are forced back into the sample to effect change and study the impact. The result is that the research is not simply a bland distanced output of the sample, but is instead a tested and real change to the sample. Some may argue this improvement, or change in situation, is a moral requirement for modern research (Greenwood and Levin, 1998).

It is arguable that the need to get involved, and impact the sample, is the major disadvantage to this research strategy. To conduct action research there must already be data or information with which to actually effect change upon the sample. Thus, there must have already been some preliminary research, or results from a previous project, from which a starting point can be gained. Action research is therefore not an exploratory form of research in the first instance, but can certainly explore the effects of research (Greenwood and Levin, 1998).

The reasons identified above illustrate why the action research method will not be most suitable for this project. However, it is worthy of note that once data has been collected and analysed it would in fact be a potential method of putting that knowledge back into

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the sample population, and should be retained as a point of interest, perhaps as a goal for future investigation rather than a research methodology in itself.

3.3.6 Grounded Theory

Contrary to a classically deductive way of thinking, grounded theory does not begin with a theory and set out to test it. Rather it works in reverse, by finding an area of study and allowing the findings to emerge from systematically collected data (Denzin and Lincoln, 1994). It is the fact that the data drives the development of the subject, rather than the theory, that is characteristic to this form of research strategy. It has been argued that social subjects, such as sociology, psychology and other 'soft' subjects are not 'real' sciences (Trochim, 2000). However, it is the grounded theory approach which gives them a set of steps and phases that allow it to be regarded as the scientific method. So rather than the randomness that some may argue exists within social subjects, the grounded theory research strategy provides a solid, testable ground upon which to develop the theories from the data.

This strategy will be further examined in the Data Collection Methods (section 3.4) as the methods used here are crucial to the approach of grounded theory. The sociological use of this theory has meant that a great deal of work has taken place to develop methods of collection and analysis that can stand up to rigour, reliability and validity and, hence, the qualitative credentials of this form of research are now well established. The qualitative element makes this approach very appealing for researching the actual risk management practices and not merely the numerical or subjectively quantifiable outcomes of the practice.

A potential downfall of this approach comes in the form of the broad and exploratory nature, which some also see as its strength. The necessary scope that the research is given at the outset to encompass as many different emerging topics as possible, before focusing

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further, can result in a great deal of lost time, wasted data collection and 'blind alleys' (Trochim, 2000). Others may argue that all data is useful, even if it proves that nothing is conclusive or needs further examination. Therefore grounded theory manages to cover more territory and establishes relevance within the real world (Robson, 2002).

This approach has been selected as the primary research strategy for this project due to the exploratory and developmental abilities inherent in the method. The data will drive forward the research and develop the links. It does not rely on any previous expectations of potential results. Through using the grounded theory approach it is intended that the research project will stay as true to the data, and the participants, as possible and incorporate new elements as they become apparent during data collection and analysis.

3.3.7 Conclusions

These research strategies all have their benefits and their pitfalls, both in application and outcome. The case study method can form a very in-depth view of a single or, at the most, limited number of issues, yet it is difficult to generalise to a larger sector or industry-wide population. Ethnography can yield impressively rich, varied and descriptive data, but is very time intensive and has the potential to involve the researcher in more than an impartial way. The phenomenological approach allows a highly detailed examination of specific events and their impact upon the sample group, however, the reliance on a very detailed view from a small number of participants compared to the overall population means that data and results can become too highly subjective for real wider use. The historical method is easily attacked as the danger of using potentially biased sources of data is significant and the use of the documentation may not be necessary as the subject of this research is both current and contemporary.

The more modern approach, action research, does prove interesting and shows the potential of the research project beyond the mere collecting and collating of data. The act

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of influencing the population and the sample is seen as integral to the research project and this may be very useful in the field of risk management as a method of feeding the results back into the population, and of testing and validating the results of the study. It should be noted that this could only take place well after the studies have been completed and when their outcomes are established.

The exploratory nature of the grounded theory approach does seem to be ideal within the context of this research project. This method can allow for emerging issues to be capitalised upon and incorporated into the research. The approach must become as robust a research project as possible and, hence, the methods of data collection and analysis are imperative.

3.4 Data Collection Methods

The next step towards the research project design requires the data collection methods to be examined and deliberated upon. The two, some would say, divergent and conflicting sides to data are quality and quantity. The number of authors who would argue the efficacy of one form of data over another are endless, suffice to say that the arguments themselves are endless due to the constantly changing nature of research and the needs of the projects (Robson, 2002). Different techniques for data collection generate diverse forms of data and these will be examined with respect to this project.

Authors such as Trochim or Robson would argue that any single research project should focus on as few data collection methods as possible, preferably one. Whilst others would like to see research projects using as diverse data collection methods as possible to ensure that data is not skewed or adversely affected by any single collection method (Denzin and Lincoln, 1994). By examining the methods available, a decision can be made as to the most appropriate approach for this project.

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The choice of a data collection method will very directly influence the selection of a method of data analysis, which will be discussed later in this chapter.

3.4.1 Qualitative Data Collection

Qualitative data, put in the simplest of terms, are data that is formed of words rather than numbers or any numerical information. This data can be derived in many ways but its critical component is the use of language, description and expression (Trochim, 2000). There is an emphasis in this form of data upon the human element and the interpretation and expression of events from a 'real' perspective (Denzin and Lincoln, 1994). This can mean that the data from qualitative collection is not as simply dealt with as it may be in quantitative data collection (Robson, 2002). At times Robson even refers to qualitative data as an 'appealing irritation' which is both pleasing for its descriptive merits but a nuisance because of its inherent complexity in analysis.

Qualitative data does deserve some merit however, as it can provide a highly animated, in-depth and rich form of information (Trochim, 2000). Descriptive qualitative data can explain or elicit the basis or cause of a situation rather than merely report upon its presence. Some of the qualitative data collection methods of possible use in this project are outlined in this section. However, it should be noted that there are a wealth of other forms of data collection methods and those included here are not exhaustive or exclusive and are merely a representation of the most commonly used approaches.

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3.4.1.1. Observational Methods

Since any social research project is interested in the activities and behaviour of people, and not just what they may say in relation to a subject, this form of data collection is highly useful. It centres around the ability to view what the individuals or groups do, record their actions and then find some way to describe their activities and analyse what is observed (Robson, 2002). This form of data collection can be particularly relevant for those using an experiment designed to elicit a specific set of responses from the subjects.

As an example, a researcher may observe the response to predetermined stimuli within confined parameters, such as the laboratory rat reacting to cheese at the end of a maze. This is one of the most basic forms of the method but it is the observation of the activity and, not merely, the outcome that highlights the interest in this collection method.

One clear advantage of this method is that the information gained is not hampered or affected by the sample's opinions or bias, it is gleaned directly from their activities. This data could then corroborate or refute other data collected, perhaps even from the same sample, such as observed behaviour contrasted with an interview or questionnaire results.

Observation also seems a good choice for those wishing to conduct 'real-world research', set out by Robson, as the observations can take place within the actual context of the research, i.e. a researcher can observe people within their own workplace. The observations could also take place within an experimental structure, perhaps behind a one-way mirror, however this situation adds to the un-reality of the research and is arguably self-defeating (Trochim, 2000).

As previously mentioned in relation to some forms of research strategy, such as ethnography, the danger of the researcher influencing the results is both very real and highly perilous to the value of the data collected. It may be possible to negate this danger by either ensuring that those being observed are unaware of the scrutiny, or by providing some empirical evidence of the impact of the awareness and hence trying to control the

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impact of this knowledge (Robson, 2002). Neither of these are realistic potential options within real-world research, as the already mentioned example of Schrodinger's Cat shows that the measurement of the impact of the researcher is fraught with difficulty.

Another significant disadvantage is the time necessary to conduct observational research. To observe single individuals conducting risk management tasks and practices would be highly impractical for a single research project working within the limited time span. Risk management at a strategic and organisational level is a long-term process and, although decisions could be observed, the whole period of information gathering, risk analysis and decision making would not be counted in hours, but in days or weeks. Hence observation is simply not feasible. To observe groups conducting the same operations, whilst cutting time, would add a new set of difficulties, such as how to prevent the whole sample group being affected by one dominate individual, and this too is impractical.

Observational methods also encompass a number of other techniques which some authors would argue as being separate methods in themselves, but which at their core are merely other forms of gathering observations (Robson, 2002). Workshops are one such scheme, where the setup arrangement of the participants is somewhat different to standard observation as they have to actually involve themselves in a set of tasks for the researcher. The similarity is that the data is collected by the observations of their activities. The difference in this case is the additional material that can be gleaned from the task performed, for instance, such as work-notes or other written material.

Workshops would provide a valuable insight into the workings and practices of risk management professionals. They allow a group of participants to gather at one time and generate a great deal of data that would likely be highly useful. However, the process of organising a group of risk management professionals into one place at one time is almost totally unfeasible. The time required for the workshop itself would be prohibitive for most practitioners and finding an open window for multiple participants would not be realistic within the time span of the research.

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The difficulty posed by working in groups also has to be taken into account. When working within groups, whether the participants are known to each other or not, people fulfil certain roles both consciously and subconsciously (Trochim, 2000). There is every likelihood, given this difficulty, that participants, rather than perform as they would do in a 'real' situation, would fulfil a certain role within this abnormal environment. For this reason and the difficulties associated with the observational method as a whole this form of data collection has not been selected for use.

3.4.1.2. Interviews

Data can be collected directly from participants through their own interaction in a conversation or interview. Typically the researcher asks a question and then receives the answer(s) which can then be analysed. The format in which this takes place can vary widely. Interviews could take place one-to-one with a single participant, or they may take place within a group setting (some may classify this format, quite separately, as a focus group) and they could even take place via telephone.

In which ever setting they are administered, there are three broad types of interview starting with unstructured at one end of the spectrum and passing through semi-structured to fully-structured at the other end. In fact the spectrum, or continuum, concept of levels of structure within interviews is a valid one which portrays the dynamic and constantly shifting boundaries between each type of interview (Robson, 2002).

The unstructured interview takes place between the researcher and the participant without any set questions, or an interview schedule that needs to be fulfilled. Instead of this, the researcher may have a broad subject that they would like the participant to talk about but beyond this, the discourse is totally dependent on the interviewee. Overall, the subject(s) of the interview are participant and content driven, rather than led by set questions. This

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ability to range from topic-to-topic at the discretion of the participant can result in a level of informality during the session which can aid the process of ensuring the sample group feel more at ease in the situation and willing to share information. As such this form of interview can collect very rich and detailed data from the sample group which can contain very expressive and enlightening information (Wengraf, 2001).

While this feeling of ease and ability for the participant to get across anything which they may want to discuss is very positive, this particular type of interview is not without difficulty. The unstructured interview has can result in a mass of data which is not relevant to the individual research project. Allowing the participant too much freedom to talk through subjects of their choice can mean that the topic of interest in the research study is marginalised (Trochim, 2000). Some however, would argue that the purpose of the unstructured interview is to explore a subject from the perspective of the sample participant and therefore any topic they wish to discuss can yield data relevant to the research (Wengraf, 2002).

Additionally, the unstructured interview is open to criticism for the lack of standardisation it results in (Robson, 2002). Due to the ability to cover any topic, dependent on the participant, it could be seen that no unstructured interview would be repeatable or reliable and this consistency becomes highly reliant on the professionalism of the interviewer.

The mid, or second, type of interview is a semi-structured interview. In this case, the researcher has a set of predetermined questions, topics or an interview schedule to follow and the interview process is loosely governed by those topics. However, there is still flexibility to cover emergent subjects as and when participants raise them (Trochim, 2000). This is a key difference from that of the less-structured approach, as the researcher has a more proactive role in starting and guiding the interview while still allowing the participant scope within their answers before bringing in the next question. Additionally,

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the researcher may become aware of potential new topics or areas of interest that may not have been previously identified.

The advantage of this approach over the previous unstructured method is the ability to cover more specific topics as set out before the interview that can be common to all of the interviews and participants. This standardisation, at least in terms of the topics and questions, adds to the reliability and repeatability of the process and hence the data (Robson, 2002).

The final type of interview is far more rigidly set out than the two previous modes. The fully-structured interview follows a defined and laid out path from beginning to end. There is fixed wording of the questions, usually in a set order, and the process is very much led by the researcher and their requirement for specific topics to be covered within the interview schedule (Trochim, 2000). At the extreme end of this spectrum, this form of interview can be a personally administered survey questionnaire with the main difference being the ability for more open ended answers than could be achieved on paper via a written questionnaire (Robson, 2002).

One distinct advantage that this form holds is the ability to easily repeat the interviews. Additionally, if the interviewer changes then the interview schedule, the questions and format can be kept the same throughout the study adding to the repeatability of the process and the reliability of data (Wengraf, 2001). By controlling the questions directly, and in a set order, the questions can be balanced with respect to the topics covered and hence a more defined and fixed research design can be followed.

The negative side to this form of interviewing is inherent in the very benefit that has just been mentioned. To control the questions so rigidly results in the inability to react to emergent topics or areas brought out by the interviewees (Robson, 2002). These topics cannot be integrated into the interview or expanded upon by the participant as this would

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no longer fit the schedule to be followed by all of the previous and the subsequent interviews.

As previously stated, the typology of interviews can be viewed, to an extent, as a continuum or spectrum ranging from the totally unstructured to the rigidly structured, as shown in figure 3.4. The totally unstructured interview is free-flowing and participant driven and the rigidly structured interview is characterised by a staccato flow of answers and is question driven (Trochim, 2000). These polar extremes to interviewing leave a very broad range of possibilities for the semi-structured interview and it is these diverse possibilities that make this form of interview highly-functional for this research.

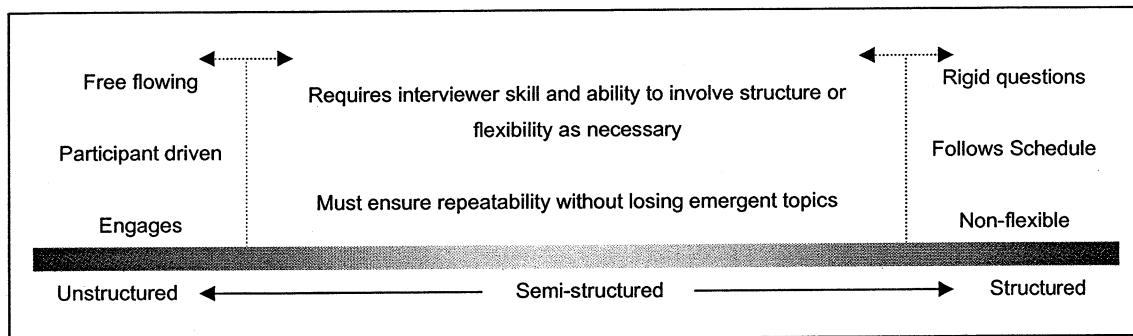


Figure 3.4 – The Interview Structure Spectrum

This spectrum shows that the semi-structured interview does dominate over most forms of interview as the totally unstructured interview can be self-defeating as an object of research unless there is at least some form of structure to start the process. Likewise, the rigidly structured interview can result in missing useful data or emergent topics and this can negate the usefulness and exploratory ability of interviewing (Trochim, 2000). The crucial factor involved is not where the delineation is drawn between the three types, but how the interview process is approached from the outset and as a whole. In fact, these divisions between the three types are very mobile and their position remains under debate in the work of many research theorists (Denzin and Lincoln, 1994).

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The telephone interview has seen a recent growth in usage due to the ability to cut down on the time required for the researcher and most importantly for the participant (Wengraf, 2001). One of the barriers to sample participation is the amount of time that the individuals have to remove from their working day to take part in the research and, any method that reduces this investment of time will gather more willing participants. However, the telephone interview adds one serious problem to the researcher in terms of the data collected and that is the element of human interaction (Robson, 2002). The downside in any interview of the researcher influencing the answers of the participant, even subtly, by the unconscious murmurs of agreement or nods of approval is counterbalanced in the telephone interview by the complete lack of non-verbal interaction. This interaction may be the raising of the eyebrows to emphasise a point, the hand gestures to illustrate a point or a wealth of other actions that will not be captured over a phone line and could be if conducted face-to-face.

Interviews, independent of type, have a number of advantages and disadvantages over other data collection methods. The lack of standardisation, as mentioned previously in relation to unstructured interviews, is a danger that can be faced through the whole spectrum of types of interviews if not carefully planned for, monitored and evaluated by the researcher (Robson, 2002). To counter this factor the researcher must demonstrate a high degree of professionalism in the conduct of the interview itself, setting out the guidelines of the interview discussion and finding ways in which to allow the participant scope without drifting too far off the central topic.

Interviewing as a research data collection method is time consuming and there is little debate over this fact (Trochim, 2000). Any researcher that has conducted qualitative interviews will expound about the time taken far exceeding the time expected and this is due not only to the time taken to plan, organise and conduct each interview, but also to the amount of time necessary to transcribe the interviews (if they are tape recorded), code the data relating to the method of analysis and then the time for analysis itself. The time taken for transcription is certainly not to be taken lightly. Whether recording the

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interview directly on tape or in-directly via note taking, the amount of time required to put the whole dialogue on to paper without missing any details such as lengthy pauses, laughter or other non-verbal indicators is phenomenal (Robson, 2002).

Interviewing clearly has many facets and the choice of multiple types of interview technique does complicate the choice of research data collection. However, this collection method certainly appears to fulfil a number of requirements of this research. This is due, at least in part, to its ability to garner rich and in-depth data direct from the participants. This data collection method is of primary interest to this research project and will be examined further as a method within the data analysis section.

3.4.1.3. Surveys and Questionnaires

This method of data collection can be both qualitative, as discussed here, or quantitative, as discussed in the following section, and both methods have some quite different attributes, both positive and negative, but also some similarities. Various authors may blur the margins between a qualitative questionnaire and an interview (Trochim, 2000). They can both be conducted in-person and are looking for open-ended questions to gain rich and qualitative answers, yet the crucial difference is the level of structure and the point at which the researcher cuts off and moves to the next question. Within an interview setting, especially those with less structure and more interest in exploratory data, the answers can be allowed to continue for some time and to change the process or ordering of following questions. In contrast, the qualitative survey or questionnaire will seek to answer the question and move onto the next one in a sequence in as concise a qualitative response as possible (Robson, 2002).

This sequence of questions is a defining characteristic of surveys and questionnaires (Trochim, 2000). The questions can be designed very specifically to counterbalance each other over the course of the survey, a technique that is most prevalent in psychology-based research practices (Robson, 2002). This means that an answer gathered early in the

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process can be tested against an answer from later in the survey asking the same question, perhaps in a reversed format.

There are a number of methods of delivering the qualitative survey or questionnaire and each have characteristics that should be noted. The face-to-face survey is one of the most commonly recognised forms of survey and questionnaire, as seen on many high streets for research relating to shopping, utilities, parking and just about any consumer issue companies wish to address (Robson, 2002). However, these particular implementations of the method tend to be quantitative in design. The face-to-face survey has an advantage of speed of delivery and data collection over the interview, as the answers tend to be more concise and the questions are delivered in a much faster manner (Trochim, 2000). However, this speed can impact the depth of the answers generated and hence the usefulness of the data.

Another form of a researcher-administered survey can be conducted within a group setting where a number of participants are gathered together at the same time. The addition of people does result in a greater amount of time required and also a much greater degree of control from the researcher in keeping the group to the question schedule (Trochim, 2000). The addition of more people also means that some may not feel comfortable giving answers about what could be commercially or personally sensitive information (Robson, 2002). The time factor is also multiplied for the group questionnaire as not only are the answers required to be recorded on paper for data analysis but notes of the event should also be taken to ensure that no data, or interactions in the group, are lost. For instance, one member of the group may not fully answer a question because they feel uncomfortable in the group setting. It is unlikely they will voice this feeling and unless the researcher can pick up on this non-verbally, this fact would be lost to the research (Trochim, 2000).

A survey or questionnaire can also be distributed to the sample participants by mail and self-administered, as they lead themselves through the questions and answer in their own

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time and in their own surroundings (Robson, 2002). This element of privacy can result in respondents feeling more at ease to answer sensitive questions and ensures a level of anonymity between the participant and the researcher. This is also a much lower-cost option for the researcher as there is little time needed to administer the survey and the vast majority of time is spent on its creation and analysis of the returns (Trochim, 2000). There is no time required for the researcher, or researchers, to literally knock on doors, stop people in the streets, arrange meetings or group sessions and hence the only time necessary is in waiting for the responses to be returned. Here lies the major deficiency in the mail-shot questionnaire. The response rates for mailed questionnaires are inherently very low, a 25% response rate is considered to be a reasonably average, if not good, proportion (Robson, 2002).

Additionally the lack of personal contact with the researcher means that some questions could be misconstrued or misinterpreted by the participant leading to answers that do not represent the question asked (Robson, 2002). Some questions may even be left totally unanswered if the participant thinks it doesn't apply to them, is worded incorrectly, has difficulty wording a response or simply doesn't understand it. In the case of incomplete returned questionnaires the question of whether to include them at all must be answered, or an attempt must be made to overcome the difficulty of including partial responses in the data as a whole. If one question is answered by participant 'A' but another question is left blank, should all of the responses be scrapped as being incomplete or can specific answers be included and others discarded? This is a highly sensitive issue for the researcher to deal with (Robson, 2002).

Overall, it would appear that the disadvantages of using qualitative surveys and questionnaires are not to be taken lightly. The difficulty of generating truly rich data in as short a time period as possible seems flawed and the need to stick quite rigidly to a question schedule or order seems to limit the ability to explore emergent topics. The additional difficulties of administering postal, or mail-shot, questionnaires, such as the lack of personal contact and the low-response rates, show that this form of data collection

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has serious drawbacks. In contrast, the speed with which this type of data collection can take place, especially the postal form, is not to be dismissed lightly and it then becomes a question of whether the downsides are a necessary evil to achieve such a fast data collection. This form of data collection is not a first choice for this research project, but it remains a possibility if time becomes a factor and the depth of data required decreases.

3.4.2 Quantitative Data Collection

Quantitative data is most easily described as the reversal of qualitative, rather than dealing with words and descriptions quantitative data is entirely devoted to numbers, or at least, data sets which can be directly attributable to numerical information (Trochim, 2000). This numerical form can be generated by providing a weighted series of potential answers representing all the available responses, so that data can be gleaned that fits the requirements for quantitative analysis (Robson, 2002). Numerical data could also be generated by controlled laboratory experiments during which input variables are strictly controlled, and a set of output measures are put in place that determine numerical value or change due to the research variable (Robson, 2002). This is most prevalent in chemistry, physics or some of the other so-called 'hard sciences' where numerical values are objective and fixed.

Due to the fixed and structured answer format of all forms of quantitative data it is generally easier to collect, in terms of time, as the researcher needs only to gain one single answer rather than allowing a broad and descriptive answer. However, this apparent advantage is countered by the setup time necessary to construct a fully-balanced, non-leading format so that answers are not generated because of the style or wording of the questions, or research method, but due to the research variable of interest (Trochim, 2000). In the light of the analysis method used the preparation phase of quantitative research collection will be extended. If quantitative data is to be successfully analysed it must be collected in a manner that will facilitate analysis according to the tools available

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(Robson, 2002). It is not constructive to collect data that will not fit into an analysis tool, and hence, gives no useful answer. Such tools may include statistical analysis packages such as Statistical Package for the Social Sciences (SPSS), which require a certain system of collecting data in order that it fits the equations and numerical formulas in this system (Trochim, 2000).

The major disadvantage that quantitative data collection presents to this research project is in its very nature of being numerical and fixed. To be quantitative, the data collected needs to conform to set answers, or a set of possible answers, already generated by the researcher, which precludes the usefulness of this form of data collection towards exploratory or investigatory research. If the answers in the field are simply unknown and in need of some enquiry then predetermined answers will only ever give the answer which the researcher already believes exists and not those that may truly be acting within the researcher sample (Blaikie, 1993). There is no ability to allow for explanatory answers, or additions to the answers which clarify their meanings. So the participants have to conform to pre-existing and, perhaps, incorrect answer categories (Trochim, 2000).

Additionally, there is no ability to adapt the questions for the individual involved, to overcome difficulties of language, explanation or definition (Blaikie, 1993). If the participant holds one concept of a word or phrase true and the researcher holds another, there is no ability within quantitative data collection to discover this and accommodate it. Likewise, if the participant does not fully understand the question in the spirit with which the researcher designed it, the answer may be equally skewed (Trochim, 2000).

The disadvantages of this form of data collection seem quite uncontrollable, yet it is important to realise that many of them can be overcome by a greater emphasis on preparation, piloting and reviewing before the process of data collection begins. By conducting as thorough a process as possible, many of the difficulties, such as language or future analysis method, can be resolved (Robson, 2002). Yet the fundamental disparity

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remains – that quantitative collection methods are not capable of generating exploratory or descriptive results.

3.4.2.1. Surveys and Questionnaires

The quantitative survey, or questionnaire, is perhaps the most recognisable form of research data collection, most especially prevalent in the market research world, where retailers or manufactures wish to examine consumer habits and attitudes (Trochim, 2000). It is only necessary to walk through the average high street, to open a national newspaper or check the circular mail to find at least one example of a company presenting some form of survey for your completion. These surveys or questionnaires are invariably quantitative in design, presenting the participant with a selection of possible answers pre-determined by the researcher (Robson, 2002).

The advantages and disadvantages presented by quantitative data collection methods as a whole have been discussed above and these are also common to this specific form. However, there are a number of particular modes in which surveys or questionnaires can be administered that provide additional factors for consideration (Robson, 2002).

The mail-shot or postal method is a very common arrangement, where the participant sample group is targeted either at home or at the workplace. The sample group may be geographically important, for instance if the examination depends on regional variation. In this case mail-shots of large numbers of people within a determined geographical boundary can be very effective (Trochim, 2000). Alternatively the sample may be geographically disperse, meaning that a mail-shot can target participants further-a-field than financial limitations or time may allow for personal visits (Blaikie, 1993).

A survey or questionnaire sent to the participants directly allows them to answer and respond in their own time, at their own leisure and hence can allow for participants to

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answer more freely and with more anonymity than may be felt by conducting personal interviews or personally administered surveys (Trochim, 2000). This time factor can also work against the research as the individuals may not fulfil the survey within the time span required by the research, and it is indicative of this that research projects using the mail-shot survey method regularly require more time for the return of the surveys than initially intended. Coupled with this time impediment is the low levels of response rates traditionally accounted to this form of data collection (Trochim, 2000). It is considered a good, if not excellent, response rate if more than 25% of those targeted return the surveys (Robson, 2002). These response rates will drop with the level of complexity, the overall length of the survey, the time required to complete it and many other factors, which may not be apparent at the time of posting (Trochim, 2000). Add to this the likelihood of returned surveys which are not fully completed, or incorrectly completed and the fully-completed response rate can drop even further.

The administered questionnaire can negate some of these issues, but also holds a number of its own difficulties to be addressed. The response rate is more simply tackled here than with a postal format as participants are likely to indicate their willingness to respond at the outset of the survey rather than the need for a researcher to await the postal return, or lack of, before determining the level of response (Robson, 2002). Likewise the possibility of incomplete surveys, while not excluded, is minimised as the researcher actually fills the form upon the response of the participant. This can also result in the researcher being able to explain the questions more fully if required to elicit a response based on a full understanding of the question, a facility not available via the postal method (Trochim, 2000).

Administering surveys is very time consuming, to a similar extent as qualitative interviews, although it does not require post-interview transcription. The researcher must present themselves to the participants in whichever setting is deemed most appropriate – such as the street, their workplaces or a neutral meeting place – administer the survey and move to the next participant. Including the time for rejected advances and those people

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unwilling to participate for whatever reason, this form of data collection is clearly highly time intensive (Trochim, 2000).

The presence of the researcher during the completion of a survey may be both a help and hindrance to the participant (Robson, 2002). Being available to administer the survey will allow the researcher to clarify the meaning of questions, explain unfamiliar terms or rephrase the question to be more understandable, while retaining the meaning of the questions as a whole to the sample group (Blaikie, 1993). However, the participants may answer differently having the researcher present, perhaps if the questions are of a personal nature or one where social norms may intrude (Trochim, 2000). This can be true especially in cases where the participant may not want to reveal information regarding legislative regulation or if social status or ability were called into question by their answer. An example may be that the participant may not wish to reveal that they sleep with a light on at night because of their fear of the dark, as it may be seen as childish or immature, even if that answer would be of use to the research. It is simply a social factor introduced by the addition of social interaction between the researcher and the participant, and one that can be minimised but never negated entirely (Robson, 2002).

This social factor can also exist from a distance, without the researcher present, depending on the sensitivity of the questions and the answers from the participants (Blaikie, 1993). If a question can be 'read' by a participant to be looking for a particular 'right' answer, the participant may be drawn towards answering in a certain way to fulfil the social etiquette (Blaikie, 1993). To disagree, or give the perceived 'wrong' answer can be felt to be impolite, and hence, some participants may fulfil a question in the positive, whilst still holding true the opposite answer. This is another factor that, throughout the course of any research, can be negated by proper testing and piloting but will never be quashed entirely.

In terms of their usefulness to a research project, quantitative surveys and questionnaires do present a very valuable method of collecting data, especially so when they can be used

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in conjunction with other forms of data collection (Robson, 2002). A research project can use this method to confirm, deny or quantify other existing data gleaned from quite different sources and using quite different methods. For instance, a qualitative interview may highlight a number of important research areas and following those interviews a quantitative questionnaire, such as an attitude survey, can find the level of importance of each of those areas. Hence the qualitative data can generate the research topics or subjects and the quantitative aspect gives some weighting to their importance (Trochim, 2000).

The uses that quantitative surveys and questionnaires can be put to ensure that this form of data collection is still very popular (Robson, 2002). The ability to address widely dispersed or specifically targeted sample groups is highly valuable, and although time consuming, this form of data collection can yield very detailed, specific results which are easily compared and examined across the sample group as whole. There are certainly downsides to be aware of in this form of data collection and ones that are not to be taken lightly such as the very low response rates typically endured by postal or returned surveys. Additionally, the researcher must be very clear about the type of data required by the project and the method and system of analysis to be used after the data collection. Due to these factors, this form of data collection does not appear to be of primary interest to an exploratory, investigative research project such as this, which is interested in rich, descriptive data. However, it may be of interest beyond the initial stages as a form of multi-modal data collection, using one data set collected using one method, to confirm or deny the results of another data set collected by other means.

3.4.3 Conclusions

This section intended to examine the data collection methods potentially available and of interest to this research project. Both qualitative and quantitative data collection methods have been considered, although the effectiveness of the quantitative element has been

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limited in comparison to the qualitative, due to the latter being far more suited to exploratory research than the former.

Qualitative data can yield the highly dynamic, in-depth and rich information that is sought by this project and there are a number of methods to collect this form of data. Observational methods can provide some of the most in-depth and highly interesting data, yet the time required to perform full-observational research is debilitating to sole research projects and the difficulty of organising a sample population into workshops seems insurmountable within the real world of risk management professionals. Surveys and questionnaires can speed up the process of data collection by removing the researcher from the collection point process and allowing the participants to complete them in their own time. However, the response rates are traditionally very low for this form of data collection, and for a sample group that is already fairly restricted in numbers this may prove to be ineffectual. The inability to adapt and explore any emergent topic further highlights the limitations of the survey method.

Quantitative methods do hold a number of advantages over their descriptive relatives. Instead of requiring the filling in of forms, or questionnaires with descriptive text and/or written examples the use of simple tick boxes or numerical scoring methods can vastly decrease the amount of time taken to collect data. This decrease in time, which obviously assists the researcher, is balanced by the rigid structure which it enforces, not allowing any topics to emerge through the research.

Indeed all of the quantitative methods require the data to be comparable by following exactly the same questioning in both form and delivery so that each result is as uniform and unaffected by the vagaries of interpretation as possible. This would mean that each question or area would need to have a fixed set of possible answers generated by the researcher, or previous research, before entering the data collection stage. This completely negates the purpose of exploratory, and hence emerging, research areas.

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The notable absence in the above discussion has been that of qualitative interviews. This form of data collection has been seen to embody a number of the elements fundamental to exploratory and investigative research. Most markedly, the ability to develop around emergent topics, to tailor the approach to each participant in order to gain the same level of data with as little individual interpretation of the questions as possible and to generate the most in-depth and rich data possible out of all of the methods previously mentioned. It is for this reason that qualitative interviews have been selected as the primary form of data collection in this project and other forms of data collection have been set aside as potential supporters for further study or validation of the data collated.

3.5 Data Analysis Methods

Following the previous discussion and selection of data collection methods for this research project the next stage of methodological investigation is the discussion of the various forms of analysis available for use. Analysis, as a term in itself, covers such a broad range of possibilities that it becomes important to realise just what is intended in analysing the data collected. According to a number of encyclopaedic definitions analysis can be described as “[a method] of resolving complex expressions into simpler or more basic ones” and at the more numerical end of definition as: “proof of a mathematical proposition by assuming the result and deducing a valid statement by a series of reversible/repeatable steps” (Britannica, 2003).

The first statement shows that the interesting aspect of data analysis is how to describe complex events or situations in more simple terms, and to that end we can start to understand them. This seems to be at the very core of modern research and is a valued aim of any research project. The second statement is an important realisation that analysis is the key in ensuring that data answers the research problem, and allows that answer to be tested by being “reversible” and “repeatable”.

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These statements together form a bridge between the qualitative and quantitative data collection. The analysis should be capable of providing the answers to potentially complex research problems in simple terms and in forms that are repeatable, regardless of the collection methods used. To this end there are data analysis methods tailored to each type of data collection, hence providing the best form of scrutiny to distil the information into more straightforward and less complex forms.

In a similar manner to the previous section, relating to data collection, it is simply unwieldy and unrealistic for a complete breakdown and examination of all the methods of data analysis available to take place in this section. What is essential to the project is a thorough examination of the available, and relevant, analysis methods with the aim of selecting the primary form of data analysis to use throughout this undertaking. If the reader wishes to delve more deeply or broadly into all the various forms of data analysis there are a great many authors with notable works in this field, ranging from the intensely quantitative and statistical such as Hays (1993) or Rice (1995), to the qualitative and social authors such as Denzin and Lincoln (1994) or Dey (1993).

3.5.1 Qualitative Data Analysis

In comparison to the previous section regarding data collection methods there are comparatively few authors and publications on data analysis methods. There is a simple explanation for this which rests at the core of qualitative data. The methods used to collect qualitative data has such a great impact upon the results, through researcher bias, or unbalanced questioning, that before the analysis stage there are a great deal of hurdles to overcome. Once the qualitative data is collected it is a relatively simple process of analysis, characterised by being time consuming and with an emphasis on the process being clear, concise and repeatable (Lee, 1999).

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This section details the analysis methods most suitable to the form of research chosen and the data collection methodology. There would be little reason to explain the details of forms of data analysis that did not relate to the data that will actually be collected and used in the research project. However, if the reader does want to read further into the subject then authors of interest may include Huberman and Miles (1994), Creswell (1998) or the ubiquitous Robson (2002). Authors such as Glaser and Strauss (1967) and Strauss and Corbin (1997) are considered some of the founders of qualitative research and most notably the grounded theory approach.

3.5.1.1. Grounded Theory

An approach first developed by the researchers Glaser and Strauss during the 1960's, grounded theory has also been called the constant comparative approach due to the process of continual review of the newly gathered data against previously collected data in order to refine the development of theoretical categories (Bogdan and Taylor, 1984). This is a significant conceptual shift from so-called 'traditional' sciences which insist upon the definition of a specific set of possible outcomes or avenues of research before the research even begins, more towards an exploratory style which can develop the research problem as the data emerges.

This approach to analysis is almost the embodiment of the inductive approach as a whole as it rests not upon the prior assumptions of the researcher or previous research but upon the field of study itself. However, this statement is provided along with that important *caveat* 'almost'. The basis of any research project must start with a defined area of research, with some previous work or some experiences otherwise the research itself risks becoming far too broad, or deep for a single PhD research project (Trochim, 2000). Hence, there will always be some prior assumptions upon which new research is predicated. It is the awareness of these prior assumptions that is important rather than the re-validation of them in order to move forward with new research (Robson, 2002).

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In keeping with this description, Strauss and Corbin (1998) defined a grounded theory as one that is “inductively derived from the phenomenon it represents”. Grounded theory seeks to describe and explain the context of any research situation as well as the environment which surrounds and impacts upon that research area. The general definition of any analysis is to break down the research area into less complex and more easily understood interactions and in this regard grounded theory provides a contextual background to this, describing not only the subject of interest but the system in which it operates.

The key feature to this approach is the constant interaction between data that is being analysed and data that is being collected (Trochim, 2000). If the data seems to show a potential link or area of interest then the data collection can be modified to investigate that area further, either within the current data collection set-up or a following stage. With this interaction as an ongoing element, grounded theory is ideally suited to qualitative semi-structured interviews, as this form of data collection – already discussed in previous sections – provides a forum for the development of further data through new lines of questioning or discussion (Lee, 1999).

Within the field of research methodology there have been a number of different properties to which grounded theory has been debatably tied in order to satisfy both scientific validity and real-world actuality. According to Glaser and Strauss (1967) there are four essential requirements to which grounded theory must adhere:

1. theory must fit the real world – it is of no use to develop theory only applicable to laboratory or highly-controlled observational studies
2. theories must work across a range of contexts – they must be suitably generic to work within multiple environments, hence not only single business or sector specific areas

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3. theories must be relevant to the people concerned – not just to the participants but also the wider population as a whole
4. theories must be readily modifiable – no theory, or researcher, holds the universal truth and there must remain the ability to adapt beyond any single project.

These four requirements are vital to the development of truly useful and grounded research, as they embody the flexible and real-world elements which grounded theory was intended to provide from the outset (Partington, 1998).

To carry out grounded theory research Lee (1999) identifies, from previously mentioned fore-runners such as Glaser and Strauss (1967) and Strauss and Corbin (1997), eight highly generic and adaptable steps. These steps are designed as a linear description of what, at times, can be a non-linear process. As the process is both iterative and characterised by feedback from analysis to collection, it is, generally, a very flexible and interactive method, and not one simply portrayed in a queue of activities (Trochim, 2000).

Eight generic steps within the grounded theory method are identified below:

- ↓ Generation of tentative ideas, questions and concepts about a phenomenon of interest – perhaps from previous research, existing models or researcher interest.
- ↓ Suggestion of some potential underlying hypotheses regarding this phenomenon – this characterises the beginning of the theory creation stage, and can also be developed from existing work or researcher justified experience.
- ↓ Testing of these concepts against preliminary data – sometimes referred to as pilot studies – to test initial theory.

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- ↓ Continual comparison between these concepts and the wider population – together with the previous step this provides preliminary theory testing.
- ↓ Integration and simplification of the central concepts – initial stage of theory refinement.
- ↓ Production of theoretical memos – records researcher’s thoughts throughout the process with regards to theory, speculation and interpretation for development of further discussion and possible theory refinement.
- ↓ Execution of data collection, coding and interpretation in a reciprocal manner – often requiring the repeat of previous steps.
- ↓ Delivery of written report detailing research process and findings – should be regarded as an interactive step within the creative research process. Within this context this would be represented in the delivery of a doctoral thesis.

The eight steps cover the entire process of the grounded theory approach, and whilst most people think of the data collection and analysis as the main focus of the research it takes until the seventh step for this to actually take place (Lee, 1999). So, even though the collection and analysis are critical elements to the research, it is imperative that the framework and the process in which this is carried out are also well considered and executed. This refinement, from interview discussion to coded data and, from the mass of data, a further transformation towards knowledge forms the critical step between the research questions posed and the answers gained from the sample group (Trochim, 2000).

The importance of the data collection by interviews has already been covered but the techniques for the analysis of that qualitative data are well established and hence form an essential component of the research veracity. Qualitative data are developed into a theoretically meaningful structure through the use of coding (Lee, 1999). This coding

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process is quite literally the application of a code, or descriptor, to categorise the same points, ideas or concepts brought out by different participants. For instance there may be an important concept regarding the feeling of 'job security' and each time a participant mentions this point it can be coded into that category for further analysis. The methods for how these codes are developed and the process of their development and then application, vary widely throughout the main qualitative methods authors (Strauss, Corbin, Glaser, Denzin *et al*).

Lee (1999) details three coding strategies, or systems, which considerably vary the method of development of the codes:

1. Open coding – post-interview and transcription the researcher develops a new code for every new datum/concept developed within an interview. However, it is worth being aware that datum may fit into multiple categories. The open coding method can result in an unwieldy amount of coding categories, but they will fit the data presented absolutely. This method is most useful at the beginning of the research to determine future codes and areas of interest.
2. Axial coding – pre-interview the researcher may develop coding categories that will likely occur during data collection; these may be from existing research. Post-transcription, each datum is coded into one, and only one, category. The axial coding method is very proscriptive and, due to its requirement for data to only fit in one category, this can miss important inter-relationships of the codes, especially when considering developmental or investigative research.
3. Selective coding – pre-interview the researcher develops categories and orders them by importance. Post-interview and transcription the researcher selects the most important category and judges all the data with the potential to fit that category and then the second and so on. Finally, selective coding can impose a certain element of researcher, or previous research, bias as the codes and their importance are generally developed from previously held theories or models.

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Clearly these three methods of coding hold a great deal of weight in determining the physical process by which the analysis takes place, as they each need a process predetermined before the data collection takes place. However, they can, to an extent, be mixed without any detrimental effect, provided that the process is clear, non-biased and set out before any data collection takes place (Lee, 1999). If there exists a predetermined model, either tested or not, that model could be used to generate the first level of codes. It is then the process of coding that actually identifies codes that have not been previously set by the model, or need further examination (Trochim, 2000).

Using combined coding methods shows one method that fulfils the developmental role of grounded theory. By using previously developed codes, but still allowing for new codes to be generated, the coding structure allows examination of emerging cases and factors. However, it is critical in using combined coding methods that the strict adherence of one datum to one code, observed in axial and selective coding methods, is relaxed to allow a fuller description of the data, potentially through a much broader set of codes (Lee, 1999). In this way data can be used to both corroborate existing models whilst still showing new issues, or emerging topics of interest, as each datum does not necessarily only fulfil one code.

The discussion surrounding the coding methods used tends to be a flexible and hotly debated topic usually left to the discretion of the researcher (Glaser and Strauss, 1967). Each project will require a slightly different approach; a proscriptive approach to coding methods from the outset could be argued to negate the usefulness of grounded theory as a whole.

Likewise there are no simple rules to define exactly how much data is required to be coded to allow research conclusions to be drawn. This tends to be another researcher-driven decision based on the quality of the participants, the quality of the data collection and the ability to construct a reasoned argument from the data collected (Strauss and Corbin, 1997). Glaser and Strauss, as founders of the grounded theory approach, would

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argue that it is never the amount of data collected that proves the theory but merely the veracity of the point itself (Glaser and Strauss, 1967). Hence, a single instance is enough to prove a single theory, although it would be advantageous to provide further corroboration or other supporting cases.

In contrast some other real-world researchers, such as Robson (2002) or Blaikie (1993), would argue that as the number of consistent data sets increases the fallibility of a single conclusion drawn from that data decreases dramatically. This decrease in fallibility is never ending. As the number of data sets increases, the potential of failure of a proposition decreases but never to naught. There always exists the potential for further research to show new or conflicting conclusions (Robson, 2002). For this reason the amount of data required for grounded theory becomes an issue of validity, reliability and ultimately judgement from the researcher involved (Glaser and Strauss, 1967).

3.5.2 Quantitative Data Analysis

Before investigating the quantitative data analysis methods available it is important to note that a qualitative process of data collection has already been selected. This dramatically shifts the focus of analysis methods upon the qualitative and not the quantitative as very few systems exist for fully-translating the depth and level of qualitative data into a quantitative system (Robson, 2002). However, quantitative analysis methods are still worthy of investigation and, at the least, a thorough reading of the approaches available.

A simple approach to quantitative data analysis is dwarfed by the sheer number of analysis methods available. There exist many dozens of diverse methods, for use in different circumstance and for distinctive types of results (Rowntree, 1991). For this reason many researchers working with quantitative data will tend to re-use the methods with which they are most familiar (Robson, 2002) and design the data collection to suit.

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This allows the researcher a certain amount of expertise and use of experience in the analysis of data.

However, this approach – of tailoring the data collection method to the predetermined mode of analysis – is not suitable to the application of emerging or investigative research as the fulfilment of preset analysis methods has the potential to overlook or belittle the importance of non-conformist data (Hays, 1993). For example, a quantitative questionnaire is returned with a section uncompleted, or completed outside the parameters of the analysis method, perhaps with a verbal description instead of a numerical assignment. This questionnaire can either be discarded completely or entered into the analysis using only the completed sections. This has then removed from the data the potential for dissenting information, or opinion from the participants, that could add or remove important elements to the research and conclusions (Rice, 1995).

Quantitative data analysis centres around the use of numerical descriptors to illustrate the research area from the perspective of the participants, as examined in the quantitative data collection section previously. If these descriptors cannot fully represent the potential answers of the participants, due to the treatment of non-conformist data, this is simply not of use within the form of research being undertaken throughout this project.

The most basic form of numerical data collection and analysis can take place to determine simple facts such as percentages of respondents to sample group, or involvement per industry sector and the like. This data is most useful for relating data back to the population as a whole (Robson, 2002), and for explaining certain bias of views if, for instance, there are a greater number of financial sector participants than manufacturing and hence they have a greater impact upon the data. Yet these numerical measurements do not represent quantitative data analysis as whole.

Many projects using quantitative data will use powerful data management and manipulation packages such as SPSS, which allows the researcher to perform a wide

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range of statistical processes upon the data. However, these packages are limited by the data with which they are inputted (Wright, 1996). If the data is not perfectly collected within the parameters of the package chosen, SPSS or others, the results will be erroneous and only the closest inspection by a statistics professional can show these errors after the processing of the data (Rowntree, 1991).

For further reading in the field of quantitative analysis, and there is a great deal of material available, the reader should refer to some of the authors already mentioned such as Dey (1993), Hays (1993) and Rice (1995). Additionally works including those by Rowntree (1991) and Wright (1996) include a wealth of information to introduce those unfamiliar with statistics and quantitative data management and use to the field. They also cover the use of data packages such as SPSS and others.

3.5.3 Conclusions

It appears consistent with the form of this research and the data being collected that qualitative data analysis methods are the only truly appropriate means of processing the results of the data collection. The data collection will be qualitatively conducted, as previously discussed, and there is no simple method of effectively translating the depth of qualitative data into a quantitative analysis method.

The qualitative method within this project is dominated by the grounded theory approach as it seems to fulfil many of the objectives of the research in being developmental and investigative. It allows for emerging trends, new coding structures and new models of interaction depending on the results as they emerge. Additionally the grounded theory approach involves an element of both the inductive and deductive approaches, previously mentioned, in the development of codes to fit the data based either on existing models or new and undiscovered coding areas.

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The quantitative method seems to hold a number of disadvantages towards this research project, mostly the in need to design the entire process before any data collection takes place and to hold firm to the analysis and coding both during the collection and the analysis. This is not the form intended for this research project and hence it has been discarded except for the most basic analysis to show base level percentages such as industry sectors, which provide an important navigation point for seeing where the data came from and where any bias may exist due to the participants.

3.6 Initial Research Design

At the outset of the project, in late 1999 and early 2000, the researcher already had a number of contacts within the risk management industry. These contacts extended into private industry, professional bodies and also public sectors. A number of discussions took place with organisations and companies regarding their views on the research area and potential for collaboration. Two private companies expressed a strong interest in becoming collaborators in the project, using both themselves as participants and also their client base, within strict parameters of confidentiality. This situation seemed ideal in fulfilling the need to be diverse and not rely upon one source for all of the data ensuring it remains as true as possible to the risk management population as a whole.

One company (subsequently referred to as AA) specialised in risk management products and services for those with an IT base, or at least those parts of an organisation which were IT reliant. This meant that their clients included manufacturing firms, financial services, many other IT based, or heavily IT biased, companies. This company was a significant organisation in size, client base and impact within the risk management field and as such was considered a very important and highly valued partner to the research project.

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The other firm (subsequently referred to as BB), although smaller in size, dealt primarily with human issues in regard to risk management and, as such, their clients extended to the health and insurance services, human resources services and departments and also the wider strategic risk management consultancy fields. This company seemed to pick up some of the gaps from AA by providing links and participants from a wider base, and not purely IT founded. Additionally it was a significant participant and organiser within the professional risk management field and, as such, the number of potential participants was very large indeed.

Through consultations and meetings with both companies it was agreed that they would both provide participants and access to clients as participants within the bounds of strict confidentiality and that the data from each company remained the property of the individual company with allowance for the researcher to use the data in the research project.

3.6.1 Research Strategy and Intentions

The companies, both AA and BB, would fulfil the need to cover a very broad range of risk management issues and hence represent the population as whole in the most descriptive method possible. Additionally, it would possible to investigate to a great depth any individual aspect of risk management brought out through either company or their clients. This would result in a very deep study showing interactions and relationships throughout the organisation structure, from strategic to operational levels and back again.

The intention was to start at the strategic level of risk management decision making and conduct qualitative interviews based on risk management policies and practices. These interviews would be mirrored by similar ones down the chain of command of the organisation to investigate how the strategy was being translated, interpreted or modified

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by the tactical and then the operational levels. This could also be studied in reverse to show how the operational or tactical levels' decision making and processes affected the strategic level.

The ability to retain data collection within individual companies over a prolonged period, or at the least to a very in depth level, was seen as highly advantageous in fulfilling the objectives of both the research and companies AA and BB.

3.6.2 Research Obstacles

Following an initial burst of interviews, three within AA, three with a client of AA and five with BB, it became clear that the companies were both undergoing some significant changes to their operations and hence this would impact the research. Company AA was aiming itself, strategically, at a merger with another risk management provider. This merger had been kept, understandably, quiet both inside and outside the organisation and as such had not been discussed during the collaboration meetings or the interviews already conducted.

Within a month that merger became a take-over and it was clear that considerable changes were going to take place with regards to company AA over the next year. The initiator from company AA, who had brought the researcher and project to the organisation, decided to remove AA from the research project, cancelling the plans for some limited funding and with that decision they required the removal of all of the data already collected from them and their clients, this tallied to six interviews.

Immediately after AA had taken that decision company BB took a similar one although for very different reasons. Company BB was formed by the same directors of a pre-existing company working within the related field of employee assistance programmes. These directors had then formed company BB to use their client base and expertise within

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the wider field of risk management. However, within two weeks of the five interviews taking place, company BB decided to withdraw entirely from the research project, again taking and withholding all the data collected through them. Company BB had decided to refocus on their primary area of activities and whilst it would still remain in operation the decision had been taken not to involve themselves or their clients in any research.

Withdrawal of either company would have been considered a significant setback to the research in terms of time dedicated to meetings, time for interviews and the removal of the data and the need to find a new collaborator. However the removal of both companies within an incredibly short space of time, with both them requiring the removal of their data under the confidentiality agreed by the researcher, was a circumstance the researcher was wholly unprepared for.

3.7 Finalised Research Design

In order to maintain the research project in at least a form of the original intention, time was again spent on developing further links with companies and organisations in the field. The researcher became aware that following the in-depth approach of few companies with very rich, deep data left open the possibility of a similar event in the future. It would not be difficult to conceive a future collaborator going through a similar process in the future, perhaps even further down the process of the project.

In order to prevent this occurrence in the future a much broader, and perhaps less in-depth, approach to the field as whole was necessary. Links were forged with as many companies, individuals and organisations within risk management as possible. This was conducted through the researcher's own contacts, through word-of-mouth, through the attendance of a range of risk management related conferences, seminars and professional

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meetings, and through the assistance of a number of the professional bodies relating to risk management activities.

These links provided the vast majority of the participants of the research project and the intention was to use as varied an industry sector as possible while using participants that all worked at a strategic level of decision making.

This change was a significant shift from the previous approach of investigating down from the strategic to the operational level for a number of reasons. Firstly the depth required investigating each instance of risk management decision making from strategic level and down would be very difficult to achieve whilst still retaining the ability to relate to as many cases as possible and hence remain true to the wider population. Additionally it would leave open the potential for one participant to remove a whole chain of interviews and data collection should they withdraw from the project for any reason. If the research remained at the strategic level interviewing the decision makers then the project could only ever lose a single interview should a participant withdraw again.

3.7.1 Research Strategy

The strategy of this design was to involve as broad a range of sectors, industries and companies as possible, making the research project as holistic an approach to risk management as possible. This gives a risk management perspective based on risk decisions that are not affected by individual vagaries of sector or business type. This strategy also allows for a greater use of the professional bodies as their members stretch across sectors, business interests and turnover levels, all focused on the strategic level of risk management decision making.

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3.7.2 Research Tactics

In order to access these population members, and potential participants, meetings were attended at the professional bodies and within a number of their special interest groups (SIGs). These special interest groups exist to examine specific fields within the organisational context; such as personnel, finance, information technology (IT), security etc. Initially contact was made through those SIGs most involved with human resources and the importance of personnel. However, due to the SIGs meetings usually coinciding with a main group meeting this contact extended to cover a broad range of subjects within risk management.

Contact details were given out to many hundreds of attendees at the group meetings, the SIGs and through presentations and dissemination of information about the research project an available sample of participants was developed. Existing contacts, within a number of industries, were developed to provide further connections to those involved at the strategic level of decision making.

The available participants were then listed by industry sector and company or organisation size (turnover and employee) in order that those selected for participation would cover as many sectors as possible, and be as varied as possible. A list was then generated containing each potential participant and this was randomly sampled, using a Microsoft Excel random number formula, to select initial participants from each sector and organisation size. If, when contacts were made for interviews to take place, the individuals were unavailable or had decided not to be involved in the project a similar replacement was selected again through the list.

The researcher used the first twenty participants randomly selected from the list as the pilot study group. This number was intended to cover at least ten participants of significant interest and use, with the potential for double that number. The extra leeway given in participant numbers at this point was to ensure that even with half of the

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interviews being of little or no use, there would still be a significant useful data set available. During the interviewing process two more were added to ensure that any suspected erroneous findings could be weeded out of the main data set. The remaining selected participants were then retained for the main study or for use if the pilot study proved inconclusive.

3.7.3 Pilot Study

This first period of investigation was set out to generally examine the arena of strategic risk management in the UK, and to ensure that the coding structures developed from the existing models represented the field as closely as possible, to develop interactions between existing models and to provide further codes or areas of interest not considered in the literature so far.

3.7.3.1. Data Collection

Due to the withdrawal of companies AA and BB, and the removal of their data the initial eleven interviews were dropped entirely. This resulted in the data collection stage, both for the initial pilot study and the main study, taking place almost six months later than had been previously accounted for.

The new initial interviews were then conducted at the participants' choice of venue, most usually their offices, or a place of mutual agreement such as meeting rooms or conference centres nearby. Due to this geographical need to meet with participants it became clear that the researcher had to focus for the most part on the south of England as a research area. This meant that the researcher could travel freely without the need for extensive expense funding.

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However the professional bodies and their regular meetings became an ideal venue in which to meet and interview participants as they were regularly attended by risk management professionals from all regions of the UK. Additionally a number of participants from other regions travelled to these meetings in order to take part in the research project, and combine this with the meeting of the body. The general geographical weighting of those involved in strategic risk management meant that London and the south east undoubtedly provided the largest contingent.

Interviews took place with the selected participants on a semi-structured basis, as soon as was possible in the timetable of the participants. They lasted approximately one hour of recorded time, with more time at either end of the interview being used to introduce the researcher and the general purpose of the research. Some interviews lasted more than that one hour and some less as the nature of the semi-structured interview meant that some participants would elaborate more than others, or cover some subjects in greater or lesser depth. Regardless of the depth proffered by each participant the range of subjects covered was always the same to ensure that views were consistently sought on all of the topics under scrutiny.

3.7.3.2. Data Analysis

In accordance with the research methods described in this chapter, the data collection methods described above and the previous discussion on data analysis, the data from each interview was subjected to a combination of axial and open coding structures. The axial coding was developed directly from existing models and was intended to ensure that current models in use did represent the reality of the participant's working world. However, to account for potential changes since the development of the models and to ensure that there are no issues are left unchecked an open structure was also available to enter data in emergent coding constructs. The coding structures, their development and implementation are more fully examined in the pilot study chapter.

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Once the coding had been conducted and the data could be compared throughout the interviews some value added knowledge could be generated from the interview outputs. Themes could be built from the interviewees opinions and observations and current industrial issues could be seen from the perspective of those at the cutting edge of UK practice.

3.7.4 Main Study

The second and far greater period of the research followed the pilot study with a main study. Whilst the pilot study was intended to check the current status of the models, the working environment of the participants and the relevance of the existing beliefs surrounding strategic risk management practices in the UK, the main study is designed to elicit responses that will help develop upon current knowledge, to further understand the driving forces in strategic risk management and to assist in the improvement of the tools available to the industry.

Following the pilot study's selection of twenty two participants the remaining members were retained for use in the main study. Due to time constraints and a need to limit the research scope to a number of participants that could be reasonably covered during the time available the initial number selected for interview was fifty. This number seemed to be reasonable to give a substantial quantity of data which was hopefully of good quality. In the event that some of the participants may not yield as much of use as others the number was increased to sixty, with the intention that at least fifty would provide the quality and depth of data required for the research.

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3.7.4.1. Data Collection

As with the pilot study the participants were gained through a series of meetings within professional industrial bodies, existing industrial contacts and word of mouth through current participants. The participants then selected from the full list available were contacted and asked for an available time during which they could make an interview contribution to the research.

Each interview was arranged at a place of mutual agreement of both the researcher and the participant. In a number of circumstances the participants wished to be interviewed away from the place of work, as they felt uncomfortable discussing their own company in their own offices. On a number of occasions interviews were conducted in meeting rooms made available at day conferences or seminars.

Each interview lasted no less than one and half hours, not including introduction time to allow the researcher time to explain the purpose of the research and to develop some rapport with the interviewee. Some interviewees showed a level of anxiety during the process and as such required more time at the initial stages to ensure that the interviewee felt comfortable giving a recorded interview. No single interview exceeded two hours in length. These interviews, in comparison to the pilot study, had a more structured process of question and answer, although participants were still given the opportunity to discuss topics to their own length and depth. Regardless of the quantity of information extended by each participant the topics covered were consistent in their delivery, sequence and style.

3.7.4.2. Data Analysis

Similar to the pilot study analysis, the data from each interview was subjected to a combination of axial and open coding structures. However, in contrast to the pilot study the use of coding in the main study has a far greater emphasis upon the axial coding structures. The axial coding framework was developed originally from the existing

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models and then developed by the results of the pilot study. These coding structures are thus more tailored to use in the main study. The full details of the coding structures, their development and implementation are more fully examined in the pilot results and then the main study chapters.

3.8 Research Quality

“Without rigour, research is worthless, becomes fiction and loses its utility” (Morse *et al*, 2002, pp.2). Rigour throughout the research is crucial to the goal of the research as a whole in ensuring that it represents the population wider than the sample group and that its findings are capable of being generalised. This process of achieving rigour within research has been at the forefront of the sciences for many years in order to provide the wider public with confidence in their conclusions, and to add to the field of knowledge to which all scientists belong (Trochim, 2000). Challenges to research rigour have been levelled at every form of research as they have been developed and tested. Denzin and Lincoln highlight that even as today’s new methods of research, such as the qualitative approach or grounded theory, are receiving scrutiny for academic rigour so did the now accepted fields of statistics and quantitative methods when they were generated (Denzin and Lincoln, 1994).

In order to achieve confidence in qualitative research the field of researchers have adopted two of the terms initially used with the quantitative fields; reliability and validity. Although originally created to measure the accuracy of numerical results the processes involved in the ensuring reliability and validity are equally useful in certifying the thoroughness of qualitative methods. There has been some debate in recent years surrounding the use of these terms and only these methods in safeguarding research quality (Morse *et al*, 2002). Indeed authors such as Denzin and Lincoln (1994), Strauss and Corbin (1998) and Scale (1999) all suggest that wider term of ‘verification’ replace

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both reliability and validity within qualitative research. Verification would allow for a broader study of the rigour of the research process and not only in the defined and fixed mediums that have been set by the introduction of quantitative quality measures being used in qualitative projects.

In order to satisfy this growing trend in providing more quality testing within qualitative research this project shall seek to investigate the reliability and validity of its results as many previous projects have done, but will also allow the use of verification as an overall examination of the research quality. In this respect, verification can include broader topics than these two subjects and has been introduced in place of the usual validation chapter provided with qualitative research.

3.8.1 Reliability

Reliability within research can often be explained as the extent to which a given result would deliver the exact same findings no matter how many times it is was applied to random members of the same population. Thus, reliability is the ability for the research to actually apply to the wider world (Trochim, 2000). As discussed previously with regards quantities of data there can never be a one hundred percent result in social research, as the sample group can never total the entire population. As the number of participants increase so does the likely reliability and applicability of the results, yet increasing the numbers alone does not ensure reliability.

Reliability for quantitative research or data is essentially based upon numerical calculations and they can be made to ensure that the same result is obtained at each testing. However without the hard ability to define reliability numerically the measure of reliability within qualitative data is probably better termed as 'trustworthiness' or the degree to which you can trust the results (Trochim, 2000). This is clearly a more subjective valuation and should be treated cautiously as such.

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Reliability must be observed as crucial by the researcher throughout the project and not merely an afterthought (Bogdan and Biklin, 1997). As such the repeatability of data collection must be thoroughly observed, ensuring that each participant is selected using the same criteria, taken through the same process and subjected to the same form and line of questioning. Reliability will be explored further within the verification chapter.

3.8.2 Validity

Validity is best described as the “approximation of truth of a given proposition or conclusion” (Trochim, 2000, pp.12). As the methods of data collection must be consistent to remove any bias involved in the procedure so must the data analysis attempt to remove any bias and enhance reliability by introducing processes such as triangulation. This is a process by which the researcher can ensure that the research findings are not an outcome of the researcher’s own biases, consciously or subconsciously (Robson, 2002). It is a technique in which the data is coded on multiple occasions by different researchers without afore knowledge of each others findings. Thus if the findings of each researcher correlate and support each result the data is, to some extent, cross-validated (Strauss and Corbin, 1998).

During the course of this research project two other researchers were kind enough to assist in the triangulation process of the data. One researcher had no prior background within the disaster or risk management fields and was given only the coding structures and some brief explanations to assist in their coding. The other researcher was involved within the fields and had a working knowledge of the concepts. This use of two different external researchers, with two distinct backgrounds, was a deliberate choice in order to maximise the scrutiny of the data in light of the coding structures. The aim of this approach is useful as it can lead to results based purely on the relationship between the data collected and coding frameworks, and not sole researcher bias.

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In a similar fashion to that of reliability, the issue of validity cannot be attached post-data collection and must be considered throughout the design and fulfilment of the research project. As such triangulation was installed as a method of data validity and a further study of internal and external validities was undertaken and explored within the verification chapter.

3.9 Summary

This chapter has provided an investigation into the research methodologies available and a justification of the methodology selected for this project – the grounded theory approach. This approach allows the researcher to be flexible in the use of previous studies, current topics of interest within industry and emergent data from the participants. This chapter has also highlighted the need for research quality testing which is further studied in the verification chapter.

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Chapter 4

PILOT STUDY

4.1 Introduction

As previously discussed there was a need to investigate the existing models, the current state of risk management practice and what appeared to influence those practices within the UK. In order to achieve this, it was felt that semi-structured interviews using some axial coding based upon previous models would be of use, combined with a quantity of open coding to allow for topics not currently modelled to be included and incorporate the ability for emergent issues to be coded in advance of the main study.

This chapter discusses the initial interviews that were conducted, details the process followed, the issues and topics covered within them and the conclusions drawn from them at this stage. The analysis of the interviews was carried out using coding structures from the existing models and at each stage the models' codes are detailed in relation to the interviews and how these topics were considered by the participants. Following the analysis there is an outline of how these interviews were used in the development and modification process towards a unified model and the main study.

4.2 Pilot Study Participants

Initial contact with potential interviewees was made through meetings, conferences and seminars attended by the researcher through years 1999 and 2000, through a number of meetings of the professional bodies connected to the professions and through some existing professional contacts of the researcher. Meetings of the professional bodies provided, by far, the greatest number of willing participants. These were meetings, seminars and special interest group meetings held by organisations including the Business Continuity Institute (BCI), the Institute of Risk Management (IRM), the Institute of Emergency Management (IEM), the Institute of Civil Defence and Disaster Studies (ICDDS), the Emergency Planning Society (EPS), the Global Association of Risk Professionals (GARP) and Survive. In addition, a number of conferences were attended which were not directly attributable to a single association or institute. This period of contact lasted for less than ten months and yielded a potential participant list of over three hundred and ten individuals. These individuals all held decision making roles within organisations either at the strategic organisational level or reporting directly to it. In some cases risk management was their sole responsibility whereas with others it was one task amongst others that they were accountable for.

A master list was created containing details of the potential participants with regards their professional titles, sectors of employment, approximate age (as the giving of age was considered rude by many of the participants), gender and years in profession. The list was then delineated by sectors of employment (industry) within each category and random selections were made using a random number generator within each sector to determine who would be contacted for initial interview.

Since it had been determined that twenty participants would appear to be a reasonable number with which to garner enough data this number of potential participants were contacted. Of this twenty, five had left their employment and could not be contacted, four

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asked not to be included in the research and three could not schedule any time for the interviews to take place. On each occasion of finding a member of this twelve unavailable another random generation was made from within the originating sector. Whilst this selection was underway the first interviews of those who were available also took place. Over the interview process it was found that two participants, although very willing to take part, did not flourish in an interview setting, yielding little information and in need of a great deal more prompting by the researcher than was intended at this stage of the research. Their data was removed from the study and two replacements were sought. This brought the total number of participants involved in the pilot study to twenty two, although two were not analysed.

Meetings were arranged at places of mutual agreement. In some cases this was within 'break-out' rooms at seminar locations, in some cases the interviews were held at the participants' place of employment and some appointments were held at hotel and conference meeting facilities.

Each interview was conducted using the same process of introduction, idle discussion regarding current affairs to develop rapport and a brief discussion of the research and the participants' important role within it. Participants were always notified of their right to remove themselves and their data from the research if they so wished, and guaranteed of their anonymity and confidentiality with regards to their own identity and that of their organisation. No mention was made of the intended objectives or goals of the interviews for fear of prejudicing their answers and hence the results. Each interview was recorded, with consent from the participant, using micro-tape and transcribed post-interview.

On a number of occasions during the interviews participants mentioned names, titles, places or other signifiers that would give indications as to their company and to them. In cases such as these the words have been removed and replaced by generic terms. Additionally in some cases it has been necessary to add words in order to make sense of a sentence or phrase. At all times this was inserted at the transcription stage and in the light

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of the tone of the interview and the meaning was not changed. In both of these cases the new terms are placed within squared brackets [...]. At least one quote from each participant's transcribed interview has been included in these analyses.

4.3 Findings from the Pilot Study

The transcriptions of each interview were coded in accordance with coding structures developed from the existing models, as stated in chapter 2. This coding was conducted applying each model's codes separately in three stages; primary, secondary, tertiary. The coding was carried out initially by the researcher and subsequently, and independently by two further researchers as already established.

4.3.1 Primary coding – resident pathogens

The transcribed interviews were initially assessed using Reason's Resident Pathogen model and the categorisations from within the model. This was to identify the usefulness of the model, its applicability to the field and any topics that appear to lack codes or are in need of further examination. Three inclusive codes were developed from the model;

Latent elements – these elements are characterised by their apparently covert nature within the organisation to affect organisational processes. They are represented by a number of subsets:

- Senior management fallible decision making – this is the failure of senior management to make correct strategic decisions for the organisation as a whole. A lack of commitment to risk management processes and a lack of competence in achieving risk management are features of this component.

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- Line management deficiencies – the inability to translate strategy into action and objectives. This could be due to a lack of commitment to risk management practices within the middle and line management. Additionally the lack of adequate support and resources can impact this component, as can the lack of senior organisational encouragement (see above).
- Preconditions to unsafe acts – these can be seen in organisational, social and motivational factors. This could be the lack of systems for promoting improved risk management practices. Or a lack of general motivation and importance given to risk management projects and policies.
- Unsafe acts – these are either conscious or unconscious acts which breach risk management practice or policy. This could be characterised as the conscious disregard for policy in order to meet objectives without regard for potential consequences, or the subconscious violation of guidelines in a casual working environment.

Active elements – this element is characterised by the active or conscious role played in their conception. In addition to the latent elements described there can be similar processes and acts that are, in fact, intentionally produced, but with unintentional consequences. This could be the sidelining of risk management practices as unimportant due to the lack of historical instances upon the organisation in question. Many other conscious decisions within the organisation can introduce elements that have been considered purposefully with good intent, yet their outcomes add to the apparent organisational pathogens.

Defences – these are the active systems and policies an organisation has in place to guard against accidents, either physical or organisational. They are illustrated within organisations as predetermined safeguards in order to maintain organisational safety, operations and policy. (Reason, 1993)

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4.3.1.1. Resident pathogen analysis

The comments from each interview were coded using the axial coding structures detailed above and what follows is a discussion of the results and interviews following these codes as a format, and not the order of interview.

On a number of occasions participants felt that senior management was in fact the source of the major risk management problems being faced by the organisation. Either through active decision taking that risk management was not a priority or through in active by not making strategic decisions at all in regard to risk management. “I am lucky if I can get five minutes with the board to talk about the risks we face... they just don’t see the importance” (participant no.9). This access to the senior management has been brought up in over half of those interviewed with comments ranging from, “risk management is not a priority to my boss” (participant no.3), to “the chief executive will not allow time to be spent [in a meeting] on risk management. He thinks we’ve done fine up to now... and he appointed me” (participant no.18). Participants even felt that senior management was not paying attention even when give access; “why I bother to present to them... I don’t know, they just want to know I’m doing something... they don’t act on anything I say” (participant no.17). These comments and feelings were usually accompanied by a sense of frustration that nothing was being done by the senior management.

In contrast there were remarks regarding involvement of senior or strategic management that showed their participation and interest. “They keep seeing hazard when I say risk... and they try to change how the operator works, or bring in a new safety rule... but its all reaction... not helpful at all” (participant no.6). “As soon as I bring them a decision to be made they get involved in reviewing my methods and work... they just argue that [I] must be wrong... all the time” (participant no.5). According to the pathogen model these actions by senior management are showing attributes of fallible decision making.

However, not all of the comments from the interviews were negative with regards senior management; “they let me get on with it... make decisions that I advise them to make.

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Risk management's important [to them], they just don't deal with it personally" (participant no.7). Hence, while this issue is useful in determining the negative impacts of the senior management, there must be care taken to involve the positive responses also, lest the development of the theories and model be entirely pessimistic about senior management.

Deficiencies within subordinates, organisational departments and line managers were also evident within the interviews. Over half of the participants stated that without senior management's absolute promotion of risk management practices the line managers did not consider these practices or policies a priority. "I'm only at the same level as them so I can't order them to do it... [and] if their boss doesn't, nothing happens" (participant no.11). "Our policy on risk management was drawn up at the most senior level, but it has very little effect down the line" (participant no.14). The support or lack of it certainly impacts the line managers' support and willingness to commit time to risk management practice. These comments certainly seem to lend weight to Reason's subsets of senior and line management deficiencies as latent elements "existent within an organisation that do not in themselves create incident" (Reason, 1990, pp.198).

The subset of 'preconditions for unsafe acts' was one that all three of the researchers coding the data found difficult to separate from the other sets. Reason states that these elements are related to a "lack of motivational or social promotion of risk management practices", yet these appeared highly interwoven with the comments and feelings with regards both senior and line management (Reason, 1990, pp.198). With comments from participants such as "the policy was one thing, the support from senior management was quite another... lacked any impetus for the rest of the organisation" (participant no.10), it is quite easy to see this continuance of effect from the original 'fallible decision making' subset to this one. This is a code in need of modification or removal for subsequent research stages.

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The subset of unsafe acts was one area in which sectoral differences were discernible and noted separately by each of the triangulation researchers. Within highly safety-critical industries the responses varied between the high conformity with safety practices to those disregarding the policies on a daily basis; “we’ve found that there are quicker ways to get this [task] done, it’s just not necessarily as safe... we’ve never had a problem” (participant no.16). In contrast another participant found that “our policy was being disregarded, but only because it was so out of date... we’ve found better ways of [working] to get it done... safer and faster” (participant no.2). Simple acts of defiance played a role in some instances; “the guys on the floor would take off their hard hats whenever they could... I understand it, they’re hot and uncomfortable, but they are there for a reason... they just wanted to be in control... not us managers” (participant no.14).

Within industries not deemed to be safety critical there was, to some extent, a similar split but by no means as clear. “Sure they’ve found ways around the system but it speeds up the delivery of [product name]” (participant no.12). “A significant proportion of my role at [company name] is spent ensuring compliance from the departments with our [risk management] policies, and I’m always pleased to see that the departments are following them very successfully” (participant no.1). However some of the participants representing organisations within these sectors were much more inclined to support the perpetration of unsafe acts; “we might bend practice to suit us, but [it is] all up for interpretation isn’t it?” (participant no.8). From these comments this is certainly a subset code of value, but it may require some review if it is to address some of the issues that appear to be of interest to the participants.

Participants also drew attention to the problems within their organisations due to active changing or bypassing of processes designed to safeguard the company. “We’ve stopped talking about risks recently. We’ve had continued success each quarter for three years and no-one sees any reason to plan for contingencies” (participant no.15). Two participants also noted that there was a feeling of invulnerability within some organisations which led to people taking greater risks. “Recent decisions have actually

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introduced us to a greater level of risk, but it was a decision taken in the belief that it won't happen to us" (participant no.19). "I was sidelined into this job after spotting a few problems... now that I'm here people take more risks expecting me to catch them if they fall" (participant no.20). Within this coding structure it would appear that active elements are similar to latent elements with the disparity being that they must be conscious decisions not to do something, rather than things merely allowed to continue unchecked (Reason, 1997).

Organisational defensive elements came in for both praise and scorn from participants in equal measure. "Our crisis management people are excellent. They meet regularly and are always enthusiastic to get stuck in" (participant no.8). "We've had a real re-doubling of efforts in the last few years since we had a major incident in [office location] in 1998. Everyone is really careful to follow procedure, we don't want [the event] happening again" (participant no.4). In comparison some comments from participants tended towards the highly negative; "We've got an emergency plan, but I don't think anyone's read it. In fact I know people haven't read it because I've still got most of the copies of version 2" (participant no.17). These comments clearly show the type of failure of defensive elements that Reason discusses as being the final layer of the sequence of accident causation, and the most likely sources for the appropriation of immediate blame in the event of an incident (Reason, 1997).

Reason's model certainly shows a level of agreement with the reality of risk management practice. The latent elements do show a correlation between participant commentary and established coding structures, with the exception of 'preconditions to unsafe acts' which seems difficult to distinguish in the interview texts. This may be an issue in the construction of a new model and this coding may require revision or incorporation into the two surrounding issues of 'unsafe acts' and 'management deficiencies' either line or senior.

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4.3.2 Secondary coding – concerns, influences, actions and failures

Following initial coding of the data the transcribed interviews were then assessed using Morley's Ripple Model. Again this was intended to ascertain the value of the model to this research, its capability for application and to highlight issues that appear to lack codes or are in need of further examination. Four subjects were drawn from the model, with each then being expanded by the six levels involved.

Concerns – these are the needs to be fulfilled by individuals at each level:

- Line workers – issues such as continued employment and career development.
- Middle management – topics include meeting departmental targets, following senior management decisions and improving performance.
- Senior management – need to grow the business, develop strategy and promote value of the organisation.
- Regulator – to ensure compliance with legislation, develop the profession as whole.
- Government – issues vary dependant on government priorities at the time.
- Society – current topics of societal concerns are included here, such as environmental and ethical issues.

Influences – those factors which determine the methods available to satisfy the stated needs and concerns above:

- Line workers – topics such as support from middle management, continued need for their 'product'.
- Middle management – budgeting issues, mergers and acquisitions and market pressures.
- Senior management – company investment, current market and customer trends and changes to external pressures (legislation, consumer lobby).
- Regulator – the legislative background to their set up. Ability to prosecute or fine. Wider contextual pressure to act, such as consumer confidence.
- Government – public opinion, current political situations and economic trends.
- Society – impact of pressure and lobby groups. Public support for causes (environmentalism etc).

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Actions – behaviours which may have a positive or negative impact upon the human system:

- Line workers – lack of motivations, staff loyalty and turnaround.
- Middle management – improbable departmental targets, support from above and below within the organisation.
- Senior management – strategic intentions for the organisation, potential changes of senior personnel.
- Regulator – increased willingness to enforce legislation, pursuit of increased or decreased regulatory powers.
- Government – desire to change economic situation, promote national industry, ensure political goals.
- Society – discord with organisational practices (ethics), change in spending habits.

Failures – the result of inappropriate actions or inactions:

- Line workers – failure to meet production targets, disaffection with the organisation, personnel change.
- Middle management – financial or production losses, impacts upon quality of service/product.
- Senior management – poor financial results, consumer lack of confidence.
- Regulator – pressure for investigation/action/resolution, demand for change,
- Government – official courses of inquiry, potential legislative change.
- Society – shift of consumer goals/spending, increased scrutiny of organisations.

(Morley, 1999)

4.3.2.1. Concerns, influences, actions and failures analysis

The transcribed interviews from each participant were next analysed using the coding structures detailed above. This section is a description and examination of the participants views on the four factors as laid out above, bearing in mind the six levels of each. This stage of analysis was challenging for the researcher. The multiple factors combined with six levels in each made for severe difficulties in appropriating a clear comment to a given issue. However many useful observations were brought to light.

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There was a significant support for the concepts developed by Morley's model, most notably in the area of 'concerns'. A number of participants described circumstances internal to their organisation in which the needs and 'concerns' of the various levels were impacting upon the risk management practices. "... its really the guys doing the [work] who are under the most pressure to perform, and they're also supposed to be responsible for their own risk management" (participant no.13). "The departments would like to play a role in the risk management process we have, but they're just too busy doing what they do to take on another task as well" (participant no.5). "I have a fairly unique role here... I'm looking at business continuity and risk management all day, everyday... nobody else gets the time to do that, to step back and look at the strategy of it all. Department heads are just so focused on targets nothing else gets done" (participant no.20). Each of these comments clearly shows the internal concerns, those of the line, middle and senior management as developed by the ripple model.

The factors external to the organisation are quite distinct also but mostly in their impact upon the organisation and its processes. "the [regulator] comes in occasionally to look at what we're up to, but we're so far ahead of their guidelines they don't affect what we do when it comes to risk management" (participant no.8). "Our biggest worry at the moment is what happens if we have another fire or petrol strike. That would seriously affect our staff and our operations... we'd consider changing [part of operations] if there was a serious threat of it happening" (participant no.11). These views, along with all of the other participants are all from the view point within the organisation. As such there are a number of stages through which the external factors must progress to affect the individual's concerns, unless as the model suggests a large enough ripple is caused impacting across the model levels.

The delineation between each section of the four involved within the Ripple model is relatively slight and there are subtle shifts in interest as they progress. For 'influences' it was important to "emphasise the factors affecting the methods available to respond" to the stated 'concerns' (Morley, 1999, pp.212). Participants noted the financial constraints

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upon various organisational levels as being of a great weight upon their ability to satisfy the needs and concerns already maintained. “High demand for our services are only going to last for a short space of time, after that its caretaking work. During our peak times we can’t do anything other than focus on income generation and during slump times nobody wants know about risk management” (participant no.6). “Senior management are constantly trying to cut [department] budgets and risk management always seems like a loss centre as it can’t be profit making” (participant no.19). “This isn’t all I do [in the company]. I have the same pressures as everyone else and then I’m expected to do the risk side of things as well. My time is very limited” (participant no.3). Clearly financial and time pressures are operating internally, this seems to confirm Morley’s premise within the model that the intra-organisational elements, across each sector, are financially focused (Morley, 1999).

The actions elements of the model became particularly noticeable when the participants talked about external aspects affecting their methods of working, and impinging upon their organisational dynamic. “[the company’s] reputation and standing within the business community, and the UK is now such an important driver to us. I can actually get decisions made, or finance approved based on ‘what-if’ scenarios of us not doing the safety work properly and it reflecting upon us” (participant no.9). Indeed this view was not alone although some found it more difficult to articulate succinctly. “It’s like... as if [the company] needs the approval of the consumer now just to keep working. We can’t just get on with it, we have ‘Joe Bloggs’ standing peering over our shoulders all the time” (participant no.19). “There’s been a recent change in the [regulator’s] approach. We used to just keep them informed of our risk management policies... but now they want to see these transformed into deeds... they’ll actually come here and ask to see how we do it” (participant no.7). These behaviours are all external and all quite clear to see from within the organisations concerned as factors created by outside forces. Yet the participants did not cover behaviours within their organisations with anything like as much attention. They clearly felt that most of the actions impinging upon their work were external.

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Failures within and without the organisation were felt to be of great concern to the participants. “The market is so volatile at the moment and other companies are looking to consolidate...grow through acquisition...we could be bought out and senior management are shelving anything which doesn’t improve our bottom line. We’ve been told to forget about strategic planning right now because it costs money” (participant no.4). “Until I took this [risk policy] on board there wasn’t anyone on it. So for years we’ve had no one looking out for risk. Not a soul. I’ve already seen people doing things ‘cause that’s the way they’ve always done it’ with nary a thought to the fact they’ve just jeopardised our contractual terms...unbelievable” (participant no.12). “As the business continuity manager I try to keep out of people’s way and I’ve written most of the plans for the organisation on my own. People don’t want to be bothered by me when they’ve got deadlines to meet” (participant no.10).

Each of these quotes has been addressing internal factors of failure, mostly based on financial considerations. However another sector specific response seemed to appear at this point, with those involved with engineering or manufacturing seeing two distinct points of failure with regards their practice of risk management. These were firmly directed at the line workers and middle management. “They see us [senior management] as useless... trying to tell them what to do all the time...except we give them procedures for a reason. If they don’t follow them we all get hit... we’re not trying to be dictators, we’ve got to follow rules or else someone will get hurt” (participant no.14). “Let’s be honest... the guys at the dangerous end of the machine have been there for years... probably since before we had a policy... but we have to manage the risks to us [as a company], them getting hurt is one thing...[the company] looking like it flaunts safety is another. That’s industrial suicide to allow that.” (participant no.3).

Morley’s model does appear to show a number of the concerns, influences, actions and failures within industry and as such it is certainly worth bringing parts of the model towards a more unified risk management model. However there are some concerns raised in this analysis. Some of the levels are difficult to establish within each factor. So

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although each of the six levels has input throughout all four factors they do not all appear to having an effect upon every factor. For instance the effect of line workers, middle managers and senior management was difficult to distinguish in the role of actions. Perhaps it should be noted that the fact these participants were internal to each organisation helps us answer this dilemma, but it does need some modification if it is to assist in the progression of a risk management model.

4.3.3 Tertiary coding – Maturity

The third analysis step used in this pilot study is that of the coding developed from the Capability Maturity Model (CMM). The intention is to establish the applicability of the model, any potential changes that need to be made or variations from the research that need to be included. Comparatively simpler than the two previous models the CMM only has the five levels of maturity, within which are relatively clear descriptors to determine where in the maturity scale any given organisation can be seen to exist.

The levels of maturity:

1. **Initial** – everyone starts here – organisations at this level don't provide a stable environment for development activities. Nearly three quarters of software organisations fall into this bracket. Success would rely upon an outstanding manager and team.
2. **Managed** – this is more disciplined – planning and tracking of development is stable, and earlier success can be repeated. Project standards are defined, and planning is based on current experience.
3. **Defined** – standard and consistent – Process is well defined because management of the engineering activities is stable. Documented processes used throughout the organisation, management has a good insight into the technical development of the project.
4. **Predictable** – process capability is quantifiable and predictable – process is measured and operated within the quantitative limits. Quantitative quality goals set for both products and processes. Quality & productivity measured.
5. **Optimising** – continuous improvement – striving to enhance the process capability range. Organisation has the means to identify weakness and take proactive measures to adjust process. Goal is prevention.

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4.3.3.1. Maturity analysis

Each of the researchers coding the interview transcripts remarked at the time that this was by far the easiest model for which to code the data. In comparison to the previous two models it was a clear progression of development. An organisation must be in one category therefore it was just a case of drawing out the references as they appeared in the texts. There was little in the way of complexity in understanding the significance of the participants' opinions.

However these interviews were only semi-structured and not intended to give the participants only a set of five answers for them to deliberate upon. The purpose was to allow them discourse and to categorise their observations in analysis. As a result in over half of the cases (eleven) it was difficult to make a judgement between two capability categories. These instances have been noted and forewarning given for the development of the next stage that a greater level of proscription towards set answers will be necessary.

Only five of the participants were able, willing or honest enough to acknowledge their primary stage of capability. "We've just not had the experience within the company. Decisions are made *ad hoc*, when necessary... we're just too caught up in trying to survive to spend time improving our approach to risk management" (participant no.2). "[Company name] are all over the place. There's never a clear strategy or process, we respond to demands and problems as they surface, it's always worked for us" (participant no.4). The realisation of current progress is in some ways a positive step as it "infers a willingness to develop even if the capability does not currently exist" (Curtis *et al*, 2001, pp.126).

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The following two steps, 'managed' and 'defined', were the most difficult to separate into two distinct classifications from the responses given in the transcripts. Without presenting the exact definitions to the participants, or at the least providing them with some guidance as to the types of descriptors they could use, this would always be a tricky factor to decide upon. However some of the participants were able to describe their organisational processes in enough depth to allow delineation. "We've done risk management plans a few times now and we're getting pretty good at it. I don't think [superior's name] knows what we're on about and to be frank I don't think we really do... but we've done a few plans now and the experience is helping" (participant no.16). "We tend to run off the same basic plan all the time. Meetings followed by information gathering, then a project meeting. We find new things every time to improve upon but that's part of the fun" (participant no.7).

The above participants were relatively clear in their description of the 'managed' maturity level. As mentioned, there were only a few able to describe their projects fluently enough to allow categorisation in the 'defined' class. "Rather than re-invent the wheel we used some existing plans, updated them... used them as our standard template. Each department has had to modify them but then their experiences have fed back into the system. We've been lucky because [a board member] has taken this as his personal project" (participant no.18). "[The company] needed to assure the [regulator] that we had sufficient risk management procedures in place... we went through about six months of plan writing but at the end of it I was really proud of what we'd achieved... a standard set of processes and documentation across ten sites... not easy, not fun, and never again" (participant no.11).

As explained previously these were the most clear comments received from the participants with regards the 'managed' and 'defined' stages of maturity. Another eleven cases appeared to be either, or both, or somewhere in between and further interviews will need to address this issue. This leaves only two participants who can occupy either of the

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higher two levels of the model. Of these only one individual was capable of describing a process of ‘continuous improvement’ necessary for attaining the top optimising stage.

The first of these organisations showed a commitment to measuring improvement and developments within risk management. “My background is in finance... and I need figures showing before and after otherwise how do I know we’ve improved? So I implemented a procedure to quantify potential losses and over time we managed to show an improvement in the reduction of these figures.” (participant no.15). In contrast the final interviewee looked at the wider role for the organisation and sought to constantly improve processes in order to achieve not only better practice but some measure of recognition from outside the company. “[The company] are very lucky. The board are absolutely committed to improving our risk management practice. We all take the view that prevention is far better than response and we’ve designed our systems to reflect this... plan reviews and updates are held within the board meetings and our learning from the process each time has been invaluable” (participant no.1).

Overall it would appear that the CMM is a highly useful tool in describing the levels of competence of organisations. The model is general to the extent that few interactions apply, and as such is relatively simple to apply and observe. However there is the apparent difficulty of demarcation between the interim levels of managed and defined. In future use the interviewer needs to ensure an adequate level of response is given to enable a classification within the CMM.

4.4 Emergent issues

The three models examined in the literature and developed into coding and analyses for the pilot studies have provided a number of avenues of interest and some requirement for adjustment in order to better represent the data being generated. However the data

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4. Predictable – process is measured and operated within quantitative limits.

5 Participants

At this point only a few participants were able to describe their organisations as being capable of measuring their process, their effects or operating with quantitative limits of any kind. It was at this point that one minor sectoral difference became apparent as four of the five organisations involved were in the financial sector, with the remaining one being involved in the nuclear industry. These industries have, as their basis, a need for quantification and measurement so it is not surprising to see these organisations represented here. Perhaps more surprising or concerning is that not more of the financial or safety-critical businesses are at this level, instead of being represented at the lower stages.

Participants did see and realise the benefits of this greater level of risk management organisational development. “We’ve built up our expertise in house and along with that has come a steadily increasing body of previous work which we use to define the risk thresholds of each department. It means we can quantify the extent to which we are risk seeking or risk averse, which is incredibly useful to us” (participant no.52). “The board need to see figures. Nothing makes sense to them unless it accompanied by a diagram, or even better, a price tag. So we’ve developed our risk management along those lines. We can actually show them what’s been happening in each office [division] and compare them” (participant no.61).

A representative view of this level of development was neatly summed up by participant no.55, “to manage our risks we have to know what our boundaries are. These boundaries might change, but unless we know where they were to start with, we’ll never know”.

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The managed stage represents the largest band of organisations within the participants of this research. It is apparent from the comments made by this group of the general realisation of the importance, or value, of risk management practices, but not the necessary capacity to change that practice. Some have stated that it is a cost issue whilst others expertise and organisational experience.

3. Defined – documented processes used throughout the organisation.

16 Participants

Only a small step separates this level from the previous and that is specifically the recording and standardisation of the risk management process across the whole organisation. Rather than some of the *ad hoc* or departmental contributions to the process that have been seen above, at this stage this must be a controlled and documented process. The difficulty at this point of the interviews was ensuring that participants were discussing documented processes across the organisation as a whole. In some cases the processes were documented and described but as an individual effort of departments rather than an organisational entirety.

Participants did recognise this as a key achievement of the organisation in addressing risk management. “It took us years to get this far into risk management, but it has been worthwhile. We’re at the point now that we can be sure of the same approach and treatment towards risk across all departments. We have a central repository of templates for them to use, and we store all the risk related material they could need access to” (participant no.63). “The progress hasn’t been as fast as I would have liked. We’ve got an agreed set of tools available to us, and each department has the same set up, but I still think we should be further on than we are” (participant no.45). “In three years our risk management efforts have come from nothing to the approach we have now. If I use your terms I would have to describe as having a standardised approach I don’t necessarily think we measure the process as such, but it’s certainly repeated using the same process. We use a standard structure for the whole organisation...” (participant no.73).

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this level and the next. This is specifically defined in that risk management processes within this capability are not organisation wide.

Several representative extracts detail the supervision of risk management as stable and ongoing with clear definitions. “After a review last year we restructured and risk management became a defined task instead of a concept that seemed to be tacked. The risk management function has specific objectives, but we’re still learning how that will or should affect the other processes and departments. So it exists certainly, but we’re not quite sure what authority it has” (participant no.66). “Each project within [company name] has a risk management element to it. That may be in risk assessments or HAZOP studies, which we regard as a risk management function. But they are individual to projects. We can’t enforce a standard process because we’ve never found a standard task” (participant no.34).

Some participants did need the questions in order to develop a response applicable to this category – these questions are as follows:

8. How do you feel about the abilities and skills available within your organisation to address risk management?

9. How well do you feel that the risk management process of the organisation is stable, standardised, repeatable, measured or evolving?

10. How easy has it been to access capable risk management experienced personnel internally or externally? And to what extent has this been an issue for you?

Responses included: “I would have to say that our process is stable, certainly. Now that I report to a board member it does look as though this is going to stay fixed on the agenda for a while. But the organisation is still getting used to thinking [about risk management] like this, so it is slow” (participant no.39). “It’s quite easy for us [the board] to layout the system for our risk management practices to follow, but getting expertise and time to conduct it is another matter” (participant no.24).

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However, it's difficult to make the case for more personnel or training as that would take away funding or staff from other key areas of operations" (participant no.30). "Risk management to us as a concept is still very new. Although I'm nominally in charge of it on the board we don't manage it as such. I keep the rest of the board members updated with what I find, but we are quite aware of our limitations at the moment... there isn't anyone trained in it [risk management] here who could do it" (participant no.76). "The problem is that we are in a constant state of flux. Our policies are changing, our practices are changing... we're just treading water at the moment but at least soon we will have funding to do something about it. Senior management have recognised the problem but there's just nothing to be done at the moment" (participant no.62).

These comments were clearly in recognition of the relatively low level of maturity of the participant's organisations' capability. But a number of comments from participants did show that a proportion of organisations are still not aware of their own lack of development. "Our objective when it comes to risk management is to tick the right boxes for the regulator and our customers. Everything is geared to those two interests. Risk management is under my remit but I don't have the skills or support to actually enact any changes" (participant no.27). "We've never had a problem when it comes down to it [risk management]... I can't see why that has any reason to change. All this talk about [business] continuity this and recovery sites that... it's just a new industry using scaremongering to develop business" (participant no.48).

2. Managed – planning and tracking is stable. Project standards are defined.

21 Participants

The largest grouping of the participants described their organisations as existing within this categorisation. It is only a single step more advanced than the previous but it does incorporate a marked improvement in that planning is undertaken, these plans are followed and standards for the project, in this case risk management, are defined. Participants described these facets succinctly and there was a key difference here between

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In order that these initial views did in fact bear out during the interview process the three questions – eight, nine and ten – were asked of each interviewee towards the end of the session and the results were compared to ensure consistency. Only those results which showed a consistent maturity level or description of the organisation were included as valid statements.

The questions also proved useful in securing each interviewee's organisation within a maturity level. The pilot study had highlighted the need for a greater use of the definitive maturity levels within the interview itself. The researcher had these definitions of the stages to hand and if any doubt appeared to exist during the interviewee's description of their own organisational capability further explanation was requested.

Since the maturity levels do lend themselves to a more structured representation of the responses it seemed useful to actually base this section upon the maturity levels. In this way there can be a numerical indicator of the number of organisations fitting that level and a representative series of comments upon which those levels are based. In order that this process does not become disjointed the responses to the questions are integrated into these descriptions of the levels, rather than being addressed separately as with previous model sections.

1. Initial – lack of a stable environment for development.

16 Participants

Accounting for approximately a quarter of the organisations represented, this stage is clearly the first step of development towards a managed risk process. Many organisations had not been capable of making that step. Participants described a number of aspects of their working environment and their organisation as a whole in order for the researcher to be confident in the assignment of this category. Comments from the participants described, in various ways, the organisational competence and development. "It's fairly clear to me that we lack any in-house expertise when it comes to risk management.

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and neither did they feel it was something they should be examining. “Reputation is what the PR department handle. If we have a problem they deal with it. I don’t want to be involved and I don’t see the relevance of risk management trying to address it” (participant no.28). “Marketing and sales have an input to our meetings but I can’t say they see the point really. If we have to do something about the risks we face we’ll do it whether or not it affects our reputation” (participant no.60).

Overall it seems that the controls element of the model has a number of key factors acting within it. The issue of reputation management is one widely but not universally acknowledged as both a goal and driving force. From the responses there are suggestions that both formal and informal control mechanisms are at work to varying degrees and in a number of guises.

6.3.1.4. Capability

Using the five levels of organisational capability proved to be invaluable to the researcher in identifying from participant, and transcription, the apparent maturity of their organisations with regards to the risk management process. When each interview was initially opened prior question had always been a general one regarding the participants’ position within the organisation. This allowed for an introduction, to the researcher, the participant and their position within the organisation. Following this another general question was posed asking them to describe their own views on the organisational risk management present within their organisation.

These two introduction questions had not initially been designed as part of the interview process. However, they were always standard questions and yielded a tremendous amount of information in addition to allowing the participants a relatively free reign in using their own descriptions, and following their own ideas, within the limits of the research topic. As such, these opening statements from the participants have become valued observations on the participant’s own organisations’ and roles.

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demonstrated in comments such as; “It’s just not a priority at the moment and hasn’t been every month for the last... actually since I’ve been there. There’s always something else that needs to be done before we can start actually looking at risk in a structured way” (participant no.58). “... I’d have to say, as an organisation, none. There’s me, as a stand alone department subordinate to the board, but as an organisation... no, there really isn’t an effort to describe” (participant no.71). “There isn’t a process to organise for us. We react to problems as they arise. I should say we’re good at doing that, but that’s not true... that’s all we know how to do” (participant no.50).

When presented with this question there were some positive responses. Ten of the participants spent a noticeably long time in considering a reply. Of these replies there seemed a general feeling that no matter how good they felt the efforts were, there were always improvements to be made. “Risk management for us is about learning and changing what we do. So to ask – ‘how do we organise the process?’ I’d have to say very well. We manage the goals, the methods of getting there and we review and feedback into the system every time” (participant no.42). “[company name] have changed a lot in a short space of time. We’re moving all of our systems to focus more on the requirements of our customer and one of those is the need to be assured of continuous service. So we’ve had to spend a lot of time investigating our risk management goals and methods... everything has been changed and it [risk management] is part of our service now” (participant no.53).

Question 7 asked ‘Could you explain to what extent the risk management process is affected by your reputation, or does your reputation affect how you manage risk?’

Most of the participants did refer to reputation either as a driver of the risk management process or an objective of it. In total only six participants, who had not already addressed reputation management as an issue, were asked this question. None of these six felt they were able to answer with enough confidence about the organisation as a whole. Four of them felt that in their role regarding risk, reputation was not a factor under their control

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organisation we have to realise that assets such as our people, buildings, computers are all quite important... our reputation is vital. If we lose peoples' confidence they won't come back to us" (participant no.65). "Because we deal direct with the public we have to walk a tight-rope of balances all the time. We have to make a profit, but we can't be seen to be making it at the expense of our customers. If we ever made a bad call and compromised on safety there would be a lot of clawing back to where we are now" (participant no.54).

This emphasis upon reputation as a critical asset of the organisation is further promoted by the comments on the risk management policy and practice actually being an extension of the reputation management function. "It's not about what we do, it's about what the consumers see us doing. So not only do we have to manage [the risks], we have to look like we are managing [the risks]" (participant no.81). "Our reputation has always been a major selling point for us. We've been around for [number of] years. 'We're solid as a rock' is the message we try to convey with that. So we have to actually deliver that reputation not just talk about it. That's where the risk management team come into it; they have to promote the right risks for our clients within the bounds of our own reputation" (participant no.25).

For those participants who did not specifically address the systematic nature of the risk management process of their organisations, or did not mention the aspect of reputation as being either a goal or a promoting factor of risk management, questions six and seven allowed for their responses to be included.

Question 6 asked 'How would you describe the efforts within your company to organise the risk management process?'

This question developed various responses, some which were less than complimentary to their own organisations. Of the twenty three participants who had not initially covered this topic thirteen of them felt that their organisations' efforts at organising or formalising the risk management process were poor at the very least. These feelings were

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(participant no.72). “One of the first activities I did when I got here was to create an actual risk team. We look at each division every week or so to see where we are placing ourselves at risk and we try to support any departments that get into difficulty. The aim is to be proactive, but mostly we just review what has happened retrospectively, or occasionally we’ll have an escalating problem and we’ll be called to come and help out” (participant no.26). “One of the great successes we’ve had for our risk management process recently was the formation of a specific crisis management team. Before, if something happened it would be up to the manager in charge to actually handle it, but now we can provide support and help from people who’ve actually been through it” (participant no.48).

These control mechanisms or teams did seem to exist even without a specific framework given to them by the organisation. Many participants mentioned having support networks within the organisation that were not strictly recognised as business processes. “Last year there was a minor flood in one of our buildings... the main problem was that we had to shut down the power to the rest of the building for a week. We had to move a couple of dozen people, find them work space, get them access to their systems and try to keep working. The good thing is that now we know how to operate and my first [phone] call is always to IT” (participant no.33). “I know ways round the system. Technically I should call my boss who gets on to the various directors to get things done. But it works far better when a few of us in the department brainstorm for a while, work out the actions needed and then tell the directors what we need, rather than ask them to sort it out. Much faster and much better at stopping the actual problem” (participant no.82).

Reputation management, or the importance of reputation as a driving force towards risk management, was highlighted as of particular interest, especially at board level. There was some alarm as to the power of the societal and consumer lobby. Even with this general concern regarding the importance and an amount of anxiety when presented with it as an important factor to weigh into decisions, there was a general response that managing organisational reputation was a crucial risk management goal. “As an

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some argue that a top-down approach is necessary to engage a common risk management practice, the majority favour a bottom-up attitude. This focuses upon the importance of line workers and middle management as the enforcers of the risk management practice.

6.3.1.3. Controls

Over the course of the interviews the subject of controls, with regards an organisational development of systematic defences, was mentioned directly on a number of occasions, and alluded to a great deal. Within the structure of these interviews the questions were used in order to generate specifically comparable responses and to standardise the query, with the aim of negating any difference between individual interviews. The controls element did need the use of these questions, numbers six and seven, as a request for elaboration.

When the subject of organisational defences, that is those systems attempting to prevent at the triggering or unsafe act immediately preceding an incident, was brought into the discussion by the participants it was usually in a context of teams working within the organisation. These teams were variously named ‘the crisis management team’, ‘the incident response team’, ‘the risk management team’ and ‘the disaster recovery team’ essentially all with the same remit: to attempt to prevent, or reduce the impact of, an organisational incident. In most cases these teams were set up at a reactive level only activated after an incident but with the aim of preventing its escalation to an organisational level event. However, in some cases mentions were made of teams designed to investigate potential risk before an incident has actually taken place.

These formalised control mechanisms were seen very positively by those participants whose organisations had them in place. “The crisis management team convenes within an hour of an incident during the working day, it will take longer out of hours. It has a number of objectives but mostly it’s about managing the incident, ensuring it doesn’t get worse than it is, and getting as much information as possible to the senior management”

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stimulus of the process. However, even within these few there were concessions made that the senior management could be developing policy that did not reflect the actions of the organisation or their workers.

These dissenting comments came from only six participants, but they make a give a useful indication of the potential for senior management fallibility. “The different levels have different goals, that’s what it comes down to. We’d [senior management] like it if we all had the same goals... to see the company flourish... We have to write policy to show our commitment to risk management. If the goals between us and the rest of the organisation levels differ then those policies aren’t going to matter anyway” (participant no.70). “The organisation’s approach to risk management is essentially a written statement from the senior management, to the effect that we believe in thorough risk management, minimising risk to our... blah blah... But it’s a real document set by the board. If what you’re asking is how is that different to what the different levels are actually doing... well that’s different. I think you’d actually find that the policy is not a reflection of our actions, but that it exists as our public face of risk management... whether it’s real or not” (participant no.78).

The limiting effect of risk awareness was noted as a key factor by the participants in how quickly risk management projects could be undertaken. “If senior management is risk aware, or at least familiar with the term, then it is quite easy to get on with it. At least then we have senior support” (participant no.26). “At least half of my time is spent on developing the staff’s understanding of risk and what it means to us. It’s not a concept they are familiar with” (participant no.56).

In summary to concerns as a model element, it would appear that these interactions, between organisational levels, and subsequently between these levels and the overall risk management practice of the organisation are indeed complex. However, they seem, on balance, to have a common factor – the importance of the involvement and empowerment throughout the organisation, although they differ on how best to achieve this. Whilst

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...I'm being flippant of course, but the sentiment is true enough. Departments know best how to approach their own risk management issues, and it's them that have to actually do it. So as long as we tick the right boxes for the board, we let them think it's all their idea, and we can actually do the real work" (participant no.31). "The risk management policy of the organisation is a statement written for the benefit of public relations. The approach from the staff is supposed to reflect that statement but the reality is that they know the risks from day to day experience and there are usually far better ways of dealing with them than have been stated or reported by [senior manager]" (participant no.59). "Although I sit on the board I can't just arrive in a department and tell them [middle management and line workers] what to do. We [the board] make policy but we don't interpret it, or have to work with it. So the only way to actually do what we say we do is to affect the way middle management approaches risk management. Get them to take ownership of the process, and the policy becomes second nature. If they oppose it, either in word or deed, then we have to address it as a far more serious issue" (participant no.46).

These comments illustrate the kind of support given to the views towards the approach of middle management and line workers. It would appear that the two opposing views do, in effect, agree to some extent. The senior management may indeed dictate policy, but the issue of how that is enforced through the organisation, and moreover the overall approach to risk management, is controlled by the attitudes and interactions of the organisations' employees.

Question 5 asked 'Could you explain how you think the different levels of the organisation act with regards the organisation's approach to risk management?'

In a similar vein to that above, regarding the approach within the various levels of the organisation, there was a general support for the middle management and line worker roles as driving forces for risk management practices. There were a few voices of dissent who tended to promote the senior management level as the policymakers and hence the

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management policy which directed organisational activity in the field. This appeared in opposition to those who felt that senior management was only a policy maker and that the real activity of risk management was affected by those interpreting policy into action.

Of those who felt that it was the senior managements' attitudes which imposed a risk management approach throughout the organisation, many felt that it was the development of a culture or ethos from the senior management downwards that really influenced the risk management practice of the organisation. "We [the board] have to set the tone for the organisation. So our approach has been very much as guides for the rest of our individual departments, showing them the methodologies we intend to use, instilling an attitude towards risk management in line with our policy" (participant no.37). "I don't think our employees really think about risk management as a concept at all. There are the working tasks that need to be performed and then there are the procedures we use to fulfil them. We [senior management] know that these are to do with managing our risks, but they [employees] just get on and do them. It's a senior management role to have an approach to risk management as you put it... rest of the company just has to follow it" (participant no.44).

Those who felt that it was the lower echelons of the organisation that actually impacted the risk management practices of the organisation diametrically opposed this top-down view of company policies. However, they did agree that senior management might genuinely believe that it was their influence that determined the approach to risk management. They added that it was, in reality, the middle management and line workers inputs, with or without senior management, which affected the processes. So, from their perspective, it becomes a 'bottom-up' process regardless of the approach taken by senior management.

These remarks are typical of the feelings of a significant portion (twenty eight) of those whom were asked question four. "The approach is simple... for all of us actually. We wait for the policy to be written then develop our approach to risk management ignoring it...

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strategic organisational risk management practices. “I’ve found two important champions within the organisation. If I can get both to ‘buy-in’ to the idea of risk management as an organisational practice then it’s pretty much in the bag. First I need the senior management on board, they have to agree it all and give the project backing, but then to actually succeed it needs the support of the office workers, the receptionists, the IT guys, all people who keep the [company name] running. It’s these guys that can actually change the way we do things from the bottom up” (participant no.29). “Because I’ve worked in each of the divisions of the organisation they all know me now... so when I tell them that we could improve by changing a few things, keep senior management happy and as a result get more influence in the bigger decisions they help... It’s not about risk management at that stage, its people management... it just happens that the project is risk management” (participant no.79). “You’ve got to get [company name] in perspective. It’s huge. A half dozen capital city headquarters... three large offices in London alone... we’re talking a lot of people. So I can make structural changes to the way we work... or the way we say we work if you see the difference? But I have to create little pockets of support in each office to actually do it. It’s these employees who actually are the organisations risk managers... the senior management just write policy” (participant no.64).

From these observations there is an apparently strong interaction from the line worker level of the organisation into the risk management practices. The questions, numbers four and five, were used to generate more definite responses from those not initially commenting on the subject. These responses could add to our understanding of these processes, and/or explain further the latent elements in action within the organisation.

Question 4 asked: ‘How would you describe the approach of senior management, middle management and the rest of the workforce towards risk management?’

The responses to this query varied between bi-polar, opposed views. There were those responses who felt that it was the sole approach of the senior management towards risk

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the questions developed at the start of this chapter were necessary in generating specific responses of use to the research. Of the sixteen participants where it was not necessary to use the questions – numbers four and five – to generate answers, there was widespread agreement in the effects of the needs at the various levels of the organisation having a definite impact upon the risk management practices of the organisation.

These participants generated some highly interesting comments regarding the effects of the various organisational levels interacting with the risk management processes as a whole. “The execs [executives] don’t have a clue about risk management. The problem is not that they don’t have a clue, it’s that they think they do. As a result they make commandments that change our procedures and our risk controls which are just plain wrong most of the time” (participant no.23). “[The company name] has been in this business for over sixty years. I don’t think the views of the board have changed since it started. They fight for continuing the *status quo* in the blind faith that if they ignore the risk long enough it might go away. We try to operate [the risk management process] without their input” (participant no.67). “What’s difficult to manage is the step between the board and the department heads. I can advise the board [on risk management practices] but it all comes down to how the departments interpret, or act on those policies. It’s no good having this great declaration from the senior management in support of risk management, if all the departments are just going to ignore it anyway” (participant no.41).

These comments seem to single out senior management and middle management for the greatest scorn in having detrimental effects upon the risk management practice. The interaction level of particular interest appears to be the complex stage of interpretation from senior management into the middle management of the organisation.

In contrast with this senior to middle management difficulty there seems to be a great deal more belief in the positive support lent by the line workers level of the organisation. This ‘grass-roots’ support is praised by the participants as a real force for change within

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The third response was one of light hearted scorn. These three participants felt that both of the events in the question had markedly little impact upon them in terms of the risk management practices or policies. “Right, well I guess there’s only two ways to describe how Turnbull changed our organisation and those would be – not a jot, or not as much as a dung beetle notices change in a lion’s diet. The change might be there somewhere, but you’d have to dig through a lot of sh*t to find it” (participant no.49). “September the 11th was a mental time for us, we sent everyone home, took the next few days off... but after that week it was back to business just as bl**dy normal, we all just used Eurostar a bit more than Easyjet to get around” (participant no.68). “No, we missed an opportunity with 9:11. We could’ve accessed the board so much more easily and perhaps then we could have changed something. But now people here are hardened to it. Without planes crashing into buildings in front of you it somehow loses the sense of urgency” (participant no.35).

Throughout the investigation into the contextual effects upon organisational risk management practice there have been a number of themes. Primarily there has been the response that these two events, and the wider background of regulator, Government and society, do impact upon the organisational practices. But there appears to be a common belief that the impacts of the Turnbull Report and September 11th were either short-lived or non-existent in terms of changes to working practices. In fact, the greatest impression of influence in contextual terms seems to be from the Government either through its own agenda or through the authority of the regulators. Noticeably lacking from the context issue has been the effect of society upon the organisational practices but this may well alter in the light of reputation management in a subsequent section.

6.3.1.2. Concerns

The internal components of the STORM model, relating to the concerns model section, were more difficult to garner initial responses from the participants during the more open discussion. In some cases comments were clear and recognisable, but for the most part

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practice... far from it. We do the same things we just report them in different ways” (participant no.34).

As already mentioned the majority of those interviewed did bring the topics of the Turnbull Report and September 11th into the discourse, but eighteen did not. For these individuals question two, as developed above, was the only mechanism of accessing this response. Additionally questions one and three were used to garner responses concerning the effects upon the participant’s organisations’ risk management practices from external influences. However, the answers to these questions did not add to the discussion here as these subjects were covered by the representative initial responses previously described.

When asked the direct question of ‘what effect, if any, have events such as the Turnbull Report or September 11th had upon your organisation and its practices?’ there were three categories of responses. The first was the almost total lack of effect of these two events. Explained by comments such as; “I would say none, no effect at all. We wobbled and wavered a bit at the time [September 11th] but nothing changed” (participant no.56). “Turnbull made our financial director think he was suddenly going to get more say in how we run things, because it was after all financial guidelines. But it hasn’t meant any change to our operations or our planning” (participant no.77).

The second type of response was an agreement that some changes had been made as a result of the events, but regarding them as having only negligible effects, if any. “There wasn’t a lot we could’ve done... if it [September 11th] had happened here there’s no doubt we would have been up sh*t creek. But we haven’t changed as a result. Far from it. I think because it didn’t happen here we haven’t changed” (participant no.74). “Of any of the changes we have made to our [risk management] practices in the three years since 9:11 or I suppose the four years since Turnbull was published I’d say they’ve only really made us think a bit more widely about risk... not any great sea change of thinking, just a little wider” (participant no.40).

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This feeling of positive change was seconded by comments regarding the spending or budget changes and the change in attitude from senior management due to September 11th. “It was only in the aftermath of New York that our board realised the kinds of things we’d been told by [the business continuity manager] for months. We gave him a lot more support after that – financial and access to the board” (participant no.69). “I [as a director] was asked to oversee it [risk management] personally and I’ve learnt so much. Not only that but since September 11th our budget for risk management has increased dramatically, although that seems to have slipped in the last year or so” (participant no.28).

Some, however, did feel that the effects of September 11th did not have any lasting impact upon the practices of organisational risk management. “There was a lot of talk about moving offices out of London, or having a lot more home-working to minimise risk to staff, but after the initial flurry of chat there wasn’t anything done about it. We’ve still got the same problems and the same lack of interest in solving them” (participant no.43). “I’ve been through three companies in the last three years and not once has anyone asked about September 11th. I’d like to think we as an industry, the risk management industry, have improved as a result but if we’re still not getting assistance from the board to get things done then how can we say anything has changed?” (participant no.57).

The responses regarding the Turnbull Report were along a similar negative path. “If I was speaking to you as a member of the board of directors I would have to say things like ‘we are very mindful of the Turnbull Report and use it’s guidance throughout our risk management practice’, but I’m not. As a risk management professional I’d have to say the Turnbull Report means next to nothing to us. We use it in the business reports because we have to but we don’t use it at all” (participant no.26). This was the continuing impression received from most of those respondents who commented on the report specifically. “Turnbull, Cadbury [previous financial guidance], Basel ii [further financial guidelines] have all changed the procedures we have to complete to show risk management. But that doesn’t mean they’ve actually changed risk management

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necessary to evaluate the effects of the likely UK standard for risk management as mentioned by participant no.80.

The societal context was mentioned only in passing without some direct intervention from the interviewer. “We’ve been working really closely with the end consumers recently and they’ve fed back into the system a lot of useful information... their alarm at rising costs, their anxiety at a couple of problems we’ve faced as an industry, but I don’t think we’ve changed what we do as a result. I could be wrong but our risk practices are driven by us and perhaps our objectives [between society and organisation] clash at times but the way we do it remains the same” (participant no.36). “The public places such a lot of responsibility on us and they feel aggrieved if we don’t fulfil our promises to them. Having said that I don’t think we change the way we do business because of that, perhaps it’s just being aware of that responsibility that matters?” (participant no.38). These comments do seem to suggest that the societal pressure is not felt to any great extent in the use or development of the organisations’ risk management practice. Where this may differ, and will need checking, is within the controls element of the model and the reference to reputation management. If the society level appears not to have influence here then it may have a more noticeable impact from that perspective.

The impacts of the Turnbull Report and September 11th were considered with very mixed opinions. Of the forty two participants who made direct reference to them there seemed to be an even split to whether the events changed the methods of any risk management practices within their organisations. Of those who felt they had changed the way they approached risk management, the feeling they had improved because of it was very evident. “We completely restructured our risk management and business continuity plans after 9:11. Everything came in-house. We’ve now got our own dedicated recovery site... we’ve got our offices far more dispersed in operational terms and our staff have really reacted well to the changes. They’re far more into it [risk management] than before” (participant no.51).

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constant contact from the [regulator] with new guidelines, best practices or recommended methods... but none, and I mean none have proved of any use to us. They arrive every week and they are never followed up. In fact every conference I go to [the regulator] say how they will only act if companies are in flagrant breach of the principles... so we don't take any notice any more" (participant no.32). "The [regulator] has a lot of power over our working practices, but we do have a very good relationship with them. There haven't been any instances when changes have been made that we haven't consulted on" (participant no.73). "As an organisation the biggest worry we have is what the Government is going to tell the regulator to worry about next. First it was [company specific], then [company specific]... it all just depends on what the politics of the time are. We've been lucky that through all of that [what has happened so far] we've been ahead of the game" (participant no.75). It is clear from these three representative quotes the impact that the regulator has upon these organisations and their practices.

Additionally it would appear that Government has some role in the external pressures – mostly as a political tool. This feeling was borne out by a number of other participants. "The Government always has agenda when it comes to business and that agenda never appears to be helping us. We're constantly under at the most senior level to either increase our international business, decrease our international business, generate more jobs... the list goes on. I don't think we [the board] even pass those priorities into the organisation any more, they've become irrelevant" (participant no.24). "Labour have not helped us conduct business... if anything they've created more hoops for us to jump through. As regards risk management, since that's what we're talking about, the only useful thing they've done is not to force us into a way of doing it. There's the [UK risk management] standard underway and that will be useful as long as they [Government] don't use it as a blunt tool with which to beat us" (participant no.80). The Government, as an external force, do not appear to have made a good impression upon the participants. Although some of the comments above appear to be grateful for the lack of pressure, within the perspective of this model section there appears to be little influence that the Government is having upon risk management practices. However, in future it may be

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These questions were employed during the interview when a satisfactory explanation or discussion of any of the model elements was not forthcoming or after the subject had been discussed in order to ensure the same routine questioning to all participants. The researcher always had a list of the model elements and the coding necessary close to hand and the questions for use if these elements were not covered.

At no time were the participants shown or informed of the model, its elements or the factors involved within the model.

The comments from each of the sixty interviews conducted were coded using the descriptions detailed above and what follows is an analysis of the results. In cases where the title sections of the model were not clearly distinguished within the interview response the questions became the method of extracting these comments. The interviews and comments are herein used following the format of each title section code, succeeded by any necessary questioning and the responses to this questioning and not following the order of the interviews themselves.

6.3.1.1. Context

Each of the participants did have comments regarding the external pressures upon them, the organisation and the risk management practices of the organisation. In most cases, forty two of the participants, there was specific mention of at least one of the identified issues of the Turnbull Report or September 11th. Those who did not have specific comments on these did mention some of the other external contextual pressures acting upon them, in line with a number of the external levels already acknowledged – those of regulator, government and society. Those who did not readily identify a specific pressure upon them were presented with questions one, two and three.

Some participants felt that the contextual pressures upon the organisation had had a direct effect on the organisations' practices and not necessarily in a positive manner. "We have

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not detail the organisation in sufficient depth to allow a category to be defined using the capability levels.

9. How well do you feel that the risk management process of the organisation is stable, standardised, repeatable, measured or evolving?

This was only to be used after some description of the stage has already taken place in order that descriptions were not directly given to the participants. This will elicit enough of a response to categorise using the capability levels.

10. How easy has it been to access capable risk management experienced personnel internally or externally? And to what extent has this been an issue for you? – The answers to these linked questions will ascertain the how limiting the availability or cost of risk management professionals has been, and whether they had to look outside of the organisation for that experience.

11. Could you describe the risk management process used by your organisation from the strategic level?

This should establish the starting point of the process and the stages of progression in the organisation. Most notably is the establishment of the organisational context the starting point?

12. To what extent do you feel that the organisational risk management process within your organisation is affected by the issues we have already discussed? Such as events in the industry, external forces, internal elements, the level of development of controls mechanisms, the abilities of the personnel and their availability, or any other factors you feel are influencing the practice of organisational risk management

This is a very open question, intended to garner a response to the overall effects of the four title elements of the model, but also any other factors not specifically examined by the questions or not covered during the interview. Additionally this question was only used once each of the previous topics had been covered to ensure that no new topics were being inserted by the researcher at this point.

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- 3. Could you explain the demands placed upon your organisational practices by external agencies such as the regulator, the Government or wider society?**

This was intended to allow the involvement of any other issue within the context element that has not been specifically noted as of interest.

- 4. How would you describe the approach of senior management, middle management and the rest of the workforce towards risk management?**

Although not a direct allusion towards the needs of each level this question intended to gain responses regarding the latent forces in action within the participant's organisation. Careful control of the discussion was necessary by the researcher to ensure that the participant is not led towards an answer.

- 5. Could you explain how you think the different levels of the organisation act with regards to the organisation's approach to risk management?**

This existed as another method to explain the latent interactions existing between the organisational levels.

- 6. How would you describe the efforts within your company to organise the risk management process?**

This question should develop a general commentary about the level of organisational defences. It is intended to draw out a response of whether the organisation has formal processes of risk management.

- 7. Could you explain to what extent the risk management process is affected by your organisation's reputation, or does your reputation affect how you manage risk?**

This question was used only when a direct reference to reputation was not forthcoming. The answer should show the level to which reputation management is a driving factor, or a result, of the risk management process.

- 8. How do you feel about the abilities and skills available within your organisation to address risk management?**

The answer to this question ought to give a general response about the capability of the organisation as a whole in risk management. On its own this answer may

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The interactions of these four model elements can be seen as shaping the fifth, central, element to the model:

Strategic organisational risk management process – this is the extent to which the organisation follows and uses the risk management stages of:

1. establish the context
2. identify the risks
3. analyse the risks
4. evaluate the risks
5. treat the risks
6. monitor and review.

This can also be limited by the surrounding four elements of context, concerns, controls and capability.

In the event that the interview dialogue did not cover the topics with enough clarity or depth a set of predetermined questions were developed to elicit responses on these specific subjects. The questions were presented to each participant regardless of whether they had already covered the topic during the discussion to ensure that each participant did face exactly the same process and line of questioning. Questions developed are as follows:

- 1. Have there been events in the field of risk management or from organisations external to yours that have affected your organisation and its practices?
What were they and what effect did they have?**

The response to this question should develop issues that exist within the context element for the participant's organisation. Should this question fail to elicit a direct response that includes either the Turnbull report or September 11th then question two exists to cover these topics.

- 2. What effect, if any, have events such as the Turnbull Report or September 11th had upon your organisation and its practices?**

This injects the terms the Turnbull Report and September 11th. In most cases this question was unnecessary.

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- Latent elements – these are characterised by their apparently covert nature within the organisation to affect the organisational processes. They can be described as senior management fallible decision making, line management deficiencies or unsafe acts. They act internally within the organisational levels of:
 - line workers
 - middle management
 - senior management.

Controls – this is an internal organisational factor which describes active defensive measures used by the organisation. It can otherwise be described as the systems of manipulation that the organisation attempts to use in defence of the institution or the lack of these systems. The extent to which this is a systematic or ordered effect is still under question or whether these controls are *ad hoc* or characterised by impromptu acts not embedded throughout the organisation. A subset of this element is:

- reputation management – the impact upon the organisational controls of the need to react or manage organisational reputation. This can be regarded as a driver of the controls or a goal of them.

Capability – this expresses the extent to which the risk management of the organisation is affected by the maturity of the process as described by the levels of maturity:

1. initial – lack of a stable environment for development
2. managed – planning and tracking is stable and project standards are defined
3. defined – documented processes used throughout the organisation
4. predictable – process is measured and operated within quantitative limits
5. optimising – organisation has the means to identify weakness and take proactive measures to adjust process.

Capability is affected by the availability of competence within the organisation and a notable limiting factor. A subset of this element is:

- Expertise and cost – the access to expertise, internal or external to the organisation and the cost of this proficiency.

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basis for the coding structures. This model, generated in chapter 5, provides a number of different titles and subsections for coding. Within each of these titles there were a number of subsets also requiring coding and investigation. During the process of interviewing it was necessary to have a series of available questions in order to obtain full, clear and comparable responses from the participants if previous or non-elicited comments did not adequately explain the subject of investigation. These questions are detailed after the initial coding has taken place within each title and further participant quotes brought to light in response to these enquiries.

The STORM model has four primary coding structures: context, concerns, controls and capability. Additionally a fifth structure exists as a result of the interactions of the previous four – the strategic organisational risk management process. The coding structures are as follows:

Context – these are elements external to the organisations' control or authority. They can be represented by instances which change the conditions and pressures acting upon an organisation. They could be guidelines or requirements generated by the appropriate regulator, the Government or society locally or internationally. In addition this section has two instances of direct and pre-existing contextual pressures:

- The Turnbull Report – reference to impacts of, or pressure upon, the organisation as a result of the 1999 ICAEW guidelines
- September 11th 2001 – an indication of effects generated by the events of that date in New York, either as an immediate influence or over the longer-term.

Concerns – this is an internal organisational component which expresses the needs of the various levels of the organisation and the effects these needs have upon the practice of risk management. These components are influenced by the latent elements acting within the various organisational levels and are limited by the levels of risk awareness present within these same levels. Subsets of this element are:

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greater level of intricacy than those previously used. This intricacy is developed and explained in the subsequent section.

During the interviews a greater level of structure was employed by the researcher. Over the course of the interviews these questions were used to further clarify certain areas as a safeguard should specific areas of importance not be mentioned by the participants. These questions are discussed within each coding section. As with the previous research analysis, the coding was carried out initially by the researcher and subsequently, and independently, by two further researchers in accordance with the triangulation principle

6.3.1 STORM model and analysis

The interviews were considered using the developed STORM model (figure 6.1) as a

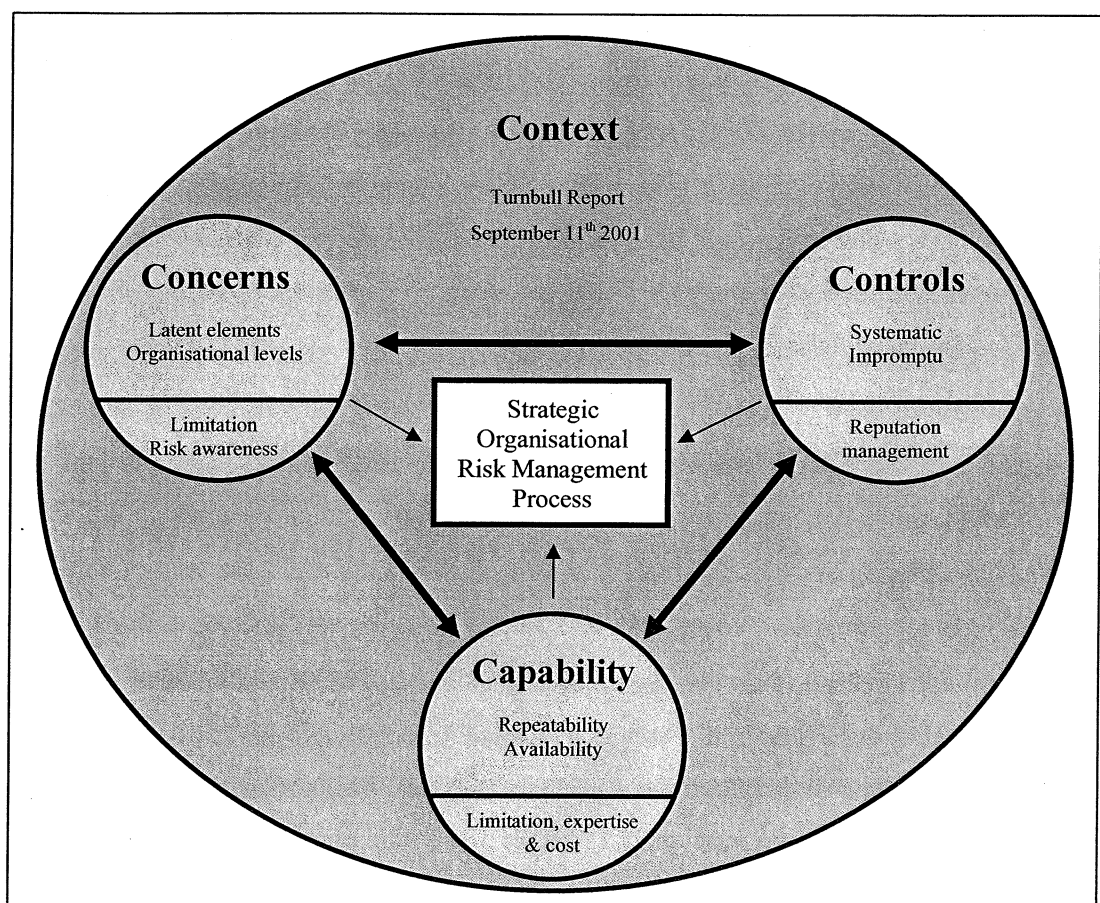


Figure 6.1 – The STORM model

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the amount of time they spent out of the office. For the remaining number of participants the interviews were held at a mixture of seminar rooms at conferences and conventions and at neutral places of contact such as hotel meeting facilities.

The interviews followed a very similar process to the pilot study procedure. There was an introduction of the researcher and a brief discussion of the research with regards the important role played by the participants. Each participant was informed of their rights to their own information should they wish not to continue as part of the research, and assured of the confidentiality within the research and subsequent thesis. Some light-hearted, current affairs discussion was held to allow the participant time to get accustomed to the interview process and during this discussion the micro-tape recording was started.

In accordance with the participant's right to anonymity, any mention of names, titles, places or other factors that would give indications as to their organisation or to them have had to be addressed. In cases such as these the words have been removed and replaced by generic terms. In a number of instances it has been necessary to insert words or phrases in order to make sense of a sentence from a participant. These insertions took place at the transcription stage and in the light of the tone of the interview and with absolute certainty that the meaning intended by the participant was not changed. In both of these cases the new terms are placed within squared brackets [...].

6.3 Findings from the main study

Transcriptions from each interview were coded following structures developed from the STORM model as described in the previous chapter. In contrast to the pilot study this coding had only one model to use as a foundation of the codes, however, this model had a

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there is a review of the changes that the main study findings suggest to the model and a number of suggestions for further discussion.

6.2 Main study participants

The method for accessing and creating a list of potential participants has already been discussed in the pilot study. This list was retained and, at the time of the main study generation in late year 2000, the process of selection for the main study followed a very similar process as the pilot. The master list was still divided by professional titles, sectors of employment, approximate age (as the giving of age was considered rude by many of the participants), gender and years in profession. The participants from the pilot study were retained on the list but excluded from selection for the main study.

It was felt that at least fifty participants would be necessary to generate the breadth and depth of data required to fully test the model and the hypotheses. This number was increased to sixty as a safeguard for any instances of less than satisfactory interviewing or a lack of actual data generated by up to ten interviews. In the process of contacting and arranging interviews over half of the participants selected, using the random generation technique, were unavailable due to a number of circumstances. Of these thirty two participants eleven had changed jobs and/or organisations, eight were not willing to continue their participation in the research, the researcher was unable to contact seven and the remaining six participants were unable to meet any of the scheduled times for interviews to take place. As a result thirty two new participants were generated, using the same method as previous described, ensuring that each sector was represented to the same degree as with previous selections.

The interviews were arranged to take place at mutually agreed locations. The majority of participants requested that the interviews be held at their own place of work to minimise

Chapter 6

MAIN STUDY

6.1 Introduction

Throughout the process of this research there has been a general aim that focused toward the main study component. The literature review sought to describe and explain the leading concepts within the theory and current academic thinking towards the framing of this research project as a whole. The methodology detailed the process and approach that the main study would follow. Existing models were introduced to provide an accepted basis for the investigation and to acquire data from the sample group. This was conducted through the pilot study, with the intention of modifying ideas and methods to more representatively fit the industry. The findings of that research allowed a new unified model to be built which is used to examine the participants' responses in the main study.

This chapter uses the STORM model, generated in chapter 5, to code and analyse the data from the main study interviews. This analysis will add to the understanding of the field and highlight the current pressures upon organisational risk management processes. Through this analysis the model can be more finely tuned to the nuances of the field bringing it a step closer towards being a practical tool in the study of organisational risk management.

The main study was carried out using the same initial list of individuals as was generated in the initial stages of the research, with the exclusion of those participants involved in the pilot study. The STORM model was used as the single coding structure allowing for a single coding framework for the analysis of the interview data. Following the analysis

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5.4 Summary

This chapter has outlined the development from previous literature, existing models and initial research of a new unified risk management model. This model encompasses all of the factors and elements which have been substantiated through the research, and has evolved using the previous models and structures as a framework for progress. The model is based on a number of key assumptions that are borne out through the generation of three hypotheses in need of further research and testing. The STORM model will be used as the new unified model of organisation risk management and be tested through the research to ensure applicability and veracity.

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2. the needs (concerns) of the organisational levels are limited by the level of risk management awareness
3. methods of control of risk management, such as reputation management, can be both systematic and impromptu
4. the risk management capability of an organisation is limited by its available expertise and repeatability of process
5. there are interactions between each of the internal factors of concerns, controls and capability and the external context issues
6. the interactions of the three internal factors and the perspective of the external factor (context) all influence the form of the STORM process.

As a result of these assumptions it becomes much more straightforward to elucidate hypotheses for testing in the main study of this research project. These hypotheses relate closely to the assumptions made:

Hypothesis 1: The relationship between the model elements (context, concerns, controls, capability) can be demonstrated to be multiple and complex. As indicated by the open nature of any system element affecting any other.

Hypothesis 2: The three internal organisational model components (concerns, controls, capability) consist of inter-relationships that all influence the risk management process.

Hypothesis 3: The factors relating to context can be found acting upon all of the internal organisational elements.

The outcomes of the subsequent, main study research with respect to these hypotheses will be discussed in the following chapter in order to discern the authenticity of the model in representing the organisational risk management field and any advancement of the model can then be noted and added.

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- Strategic organisational risk management process – this expresses the degree to which each of the other elements (context, concerns, controls and capability) interact or affect the overall process.

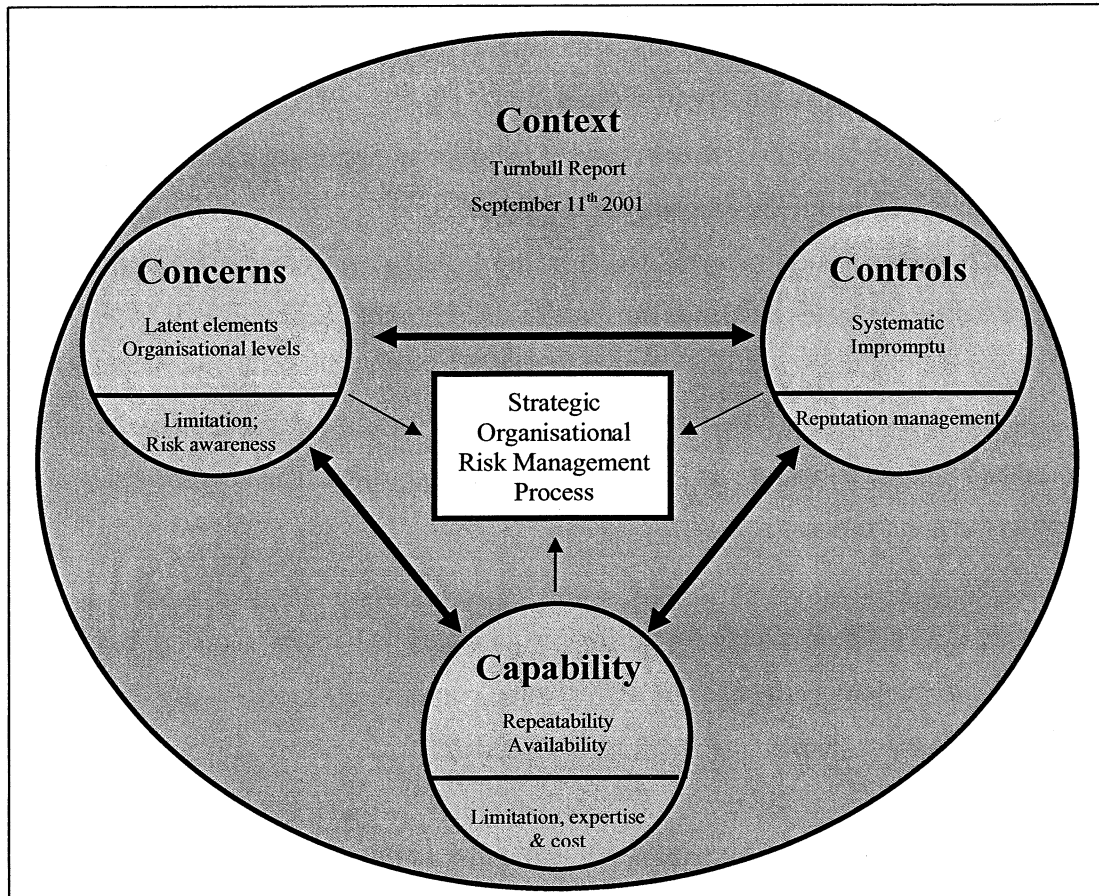


Figure 5.1 – The STORM model

The model is based on a number of assumptions and raises a number of hypotheses, theories and issues for the main study of the research. As with all models there must be a set of assumptions upon which it is based in order for it to be viewed within its own context and not viewed as an all encompassing societal edict (Lee, 1999). The STORM model assumes that:

1. organisations are directly affected by the context in which they exist

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5.3.3 STORM model

The following model has been based upon the issues raised within the literature review, the industrial drivers and their potential effects, the existing models and the modifications to those models due to the initial research and the findings of the pilot study, both related to the models and as emergent issues. The model has been titled the Strategic Organisational Risk Management model, otherwise dubbed the STORM model (see figure 5.1).

The model sections are as follows:

- Context – an external factor relating to the wider environment that the organisation exists within. These contexts can include the regulator, the Government, society as a whole in addition to specific industrial events or topics which have an impact upon the industry overall.
- Concerns – an internal organisational component that consists of latent elements acting through the various organisational levels. The effects of these concerns are limited by the levels of risk awareness evident through each of the organisational levels.
- Controls – an internal organisational factor which describes the systems of manipulation which the organisation attempts to use, or the lack of these systems. One noted feature of this factor is the extent to which reputation management dominates the control mechanisms.
- Capability – this expresses the extent to which the risk management of the organisation is affected by maturity of the process, and is affected by the availability of competence within the organisation and limited by the access to expertise and the cost of this proficiency.

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5.3.2 Organisational levels

As noted during the examination of both the Ripple and Resident Pathogen models the factors affecting risk management practice do vary between organisational levels, and, to an extent, as a result of the interactions linking them. The Ripple model clearly laid out the six levels that Morley represented as:

- line worker
- middle management
- senior management
- regulator
- government
- society.

In a linear format with each level being directly connected to those above and below. Yet the result of this relationship is that impacts, thrown as stones causing 'ripples in the pond', have to filter through levels before affecting subsequent levels. This filtration effect was not observed in the pilot study.

Rather than use this linear relationship the model seeks to apply the relationships brought to light in the initial research. This relationship seems to show the two divisions of internal and external to the organisation. Morley's levels can still exist within each classification but the filtration effect of one instance passing through others before reaching the other division is negated. An event or change in one level of the division can then directly pass on to another level within the other division. As an example, societal environmental pressure could directly impact upon line workers, in manners that were not previously possible. This may be particularly true if societal impacts such as the backlash against animal testing and the acts against employees of those agencies are viewed as cases in point.

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Therefore, it is proposed that a new model is developed using aspects of the previous models that proved valuable through the pilot study and incorporating some interactions that appear to exist between organisations and their contextual environment and within organisations between levels of the establishment. The model must represent two factors that appear to need clarification from previous research; context and organisational levels.

5.3.1 Contextual Issues

All organisations are situated within a contextual environment of wider industry, competitors, legislative and governmental pressures, local community and wider society. Each of these contexts will have some interaction with the organisational elements, be they at the political level, environmental pressures or merely changes in societal behaviours and perception of the organisation. Reputation management appears to be one organisational factor that directly links to the organisational desire to influence its wider context. Conversely it is this same relationship that shows how the wider context has affected the inner workings and priorities of organisations.

To show these levels and to allow further research a framework in which to study this phenomena the entire organisational model must be positioned entirely within a wider contextual environment. In this way any changes to the context can be directly transferred through the developed interaction into the organisation at which ever level they appear to influence. This is in contrast to the Ripple model which provided only some access once external contexts had been filtered through the organisational levels.

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complex organisational systems “external actions in the form of environmental changes, or society pressures had a noticeable impact” and that while this was not a simple influence to measure it was “crucial to recognise the social order in which the organisation must exist” (Morley, 1999, pp.62 & pp.71).

In contrast the CMM was not intended to interact with external factors as a role within the model. It was designed as a measurement tool for within an organisation. However, if the CMM is included as an overall measurement of risk management practice there is the realisation that there will be some likely interactions between the organisation and its contextual setting that will have some impact upon maturity levels.

In order to represent this open systems approach each of the existing systems must be set within their wider contexts, and those contexts and their interactions must be subject to scrutiny. Thus, the unified model will need to depict this framing of the existing factors within an overall contextual background and subsequent research will investigate these interactions.

5.3 Model Proposal

Throughout the review of current literature, the study of previous models and the pilot study issues developed from the field and theory it has become apparent that a new model is necessary to explain some of the interactions and issues concerning contemporary risk management practice in the UK. Previous models have proved useful in showing certain aspects of risk management practice, yet they have also revealed some concerns regarding their interactions from within and without the organisation. The new model must, additionally, take into account the deficiencies within the existing frameworks in the explanation of emergent issues such as risk awareness, industrial drivers and the availability of current expertise.

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clarity has resulted in the application of the CMM being reliant upon the clarity of explanation and description given by the participants. This was, predominantly, successful. Each level had a number of participant organisations unmistakably within its bounds. The difficulty occurred in those instances between the levels of 'managed' and 'defined' where description placed them somewhere within the two areas but without a clear delineation of which. There is not a structural answer to this problem, it is one of process. The next stage of the research is a more structured, although still semi-structured interview procedure. The interviewer must use the model levels as a guide for that stage of the discussion and generate more data from the participant if the current explanation lacks the necessary clarity. This is not an easy task as it will require the interviewer to be explanatory and investigatory without giving specific prompts or making sought answers or responses clear to the participant.

Overall there do seem to be a few structural changes that need to be made with regards the various models from the issues expressed above. The impact of these changes upon the appearance and operation of the model will be considered later in this chapter.

5.2.1 Open systems

One factor brought to light within the literature, mentioned within the models section, which has been touched upon in this discussion but not explored is the 'open systems' approach given to the overall methods and models. The Resident Pathogen model was described as not having a relationship with any external factors, until these factors directly impinged upon internal issues. Yet Reason does recognise the need for an open systems model in order to show the interactions that occur between external forces and the levels already developed by the model.

The Ripple model is constructed using this open system throughout with levels of regulator, government and society. Morley contended that in the development of more

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decision making' with the term 'lack of promotion or support for risk management process' to be added.

There is a noted difficulty in resolving the issue surrounding 'unsafe acts'. If each act is performed with good intent, such as to improve working methods, then it requires an incident to appraise the act as being negative. Unless other measurements are used to discern what is an unsafe act, such as reporting of near-miss events. In this case examples can be used to clearly show unsafe acts. For the unified model it is worthwhile keeping this factor within the model, but noting that questioning regarding near misses or previous incidents may make this section more valuable.

In Morley's Ripple Model there was an apparent distance between the external factors and internal levels of the organisation within the issue of 'concerns'. It appeared that for a concern to impact upon line workers it had to pass through the filters of senior and middle management at the very least. In the responses from the participants this distance did not appear to exist. In a number of cases external factors, such as the mentioned fire fighters strike or petrol shortages, could impact upon the senior, middle and line worker levels much more quickly than any level could intervene as a filter. This access between external factors and internal ones within 'concerns' will be addressed by showing a more direct interface in the new model.

Contrary to the researcher's own expectations there were very few illustrations of the effects of the internal levels, with regards the 'actions' level of the model, upon the practice of risk management. It is possible that these factors do exist and this lack of data is an aberration, yet out of the twenty participants none made comments that related to this. It seems likely that this is a topic that can be limited to the external forces in a new model.

The Capability Maturity Model was the most simple to code through the data. It has clear descriptions of the levels and the attainment necessary to advance to the next level. This

5.2 Development from existing models

The three models already included in this research project presented a number of different levels, concerns and factors affecting current risk management practice. Through their examination in the pilot study a number of deficiencies were brought to light in their applicability to this research topic. The most notable shortcomings of these models were:

1. preconditions to unsafe acts – this stage of the Resident Pathogen model appeared to lack differentiation from surrounding topics
2. unsafe acts – there was some difficulty within this factor. While all the comments could be labelled ‘unsafe act’ some had the clear intention of being a positive act, or ‘workaround’ of a problem
3. concerns – the external factors had to pass through a number of stages before impacting upon external levels. As a result participants did not directly feel pressure from external forces without some filter level providing some isolation
4. actions – line worker, middle manager, senior manager – these three internal factors from the actions portion of Morley’s Ripple Model were highly under described and appear negligible from the perspective within the organisation
5. maturity – a lack of clarity between levels resulted in the majority of cases being indistinguishable between two levels.

Solutions to each of these issues are important if the model is to draw upon the useful features each of the models exhibits. The description for the circumstance of ‘preconditions for unsafe acts’ is a source of difficulty as the comments received from the participants do not reflect this subtle difference between the two issues bestride it. Comments from the participants described the decision making that could certainly lead to preconditions to unsafe acts, yet without an incident to measure against, these decisions merely become ‘fallible decision making’. In order to solve this the researcher proposes to remove the code entirely and improve upon the conditions relating to ‘fallible

Chapter 5

MODEL DEVELOPMENT

5.1 Introduction

Through the process of the research so far there has been an exploration of the influential and notable literature in the field, some current issues affecting the industry have been appraised and a number of models of interest have been identified. Through some preliminary, semi-structured interviews these varied topics have been analysed, and a number of new opportunities have been generated. From this analysis it became clear that the existing models, whilst being useful and adding a number of coding structures that directly correlated with the emergent data, were in need of revision and re-framing to create a more unified approach to risk management. The emergent issues from the interviews represented some factors that were not present in the current models and the industry drivers could not be fully explained within existing contexts.

The goal of this chapter is to develop a unified model of risk management practice as it is described by current UK industry. This model will seek to build upon past representations using the factors which have been sustained through the pilot study. It will bring together some of the contextual issues which appear to be lacking from some of the models and played such a great role in the descriptions provided during the pilot study. Additionally there will be some relationships developed between elements of the model as assumptions and hypotheses for testing in the course of the main study.

4.5 Summary

This pilot study has investigated the utility of the current models with regards their structures, definitions and pre-existing codes. The interviews brought out aspects of awareness of the risk management field and process. Contemporary industrial issues proved to have some expected and unexpected effects and some topics that had not been initially targeted were developed by the participants.

The interviews revealed a number of factors within each model that do not appear to assist in the scrutiny of risk management practice and a number of these issues will require further investigation. The Resident Pathogen model requires only some further development of the latent elements to remove some ambiguity over definitions. Several of the coding structures within the Ripple Model appear not to generate a great deal of information when viewed from the internal organisational perspective, and as such they should be removed. The Capability Maturity Model requires only that the interviewer ensures a greater level of definition or description of the organisational process.

Awareness of risk management practices was apparent as a factor affecting professionals in the field and the three industrial drivers as brought to light in the literature review had varying effects and interactions. It was observed that the ICAEW Turnbull guidance was not acknowledged as having a great deal of effect on business practice. The effects of both reputation management issues and September 11th 2001 had some bearing on current processes. Although these effects were mixed. Finally the issue of risk management skills, their availability and their costs were clearly a concern for the participants.

Overall it would appear that there are many factors from the models, industrial drivers and emergent issues that can be put towards a more unified model of contemporary risk management practice within the UK. This will be developed in the following chapter and tested through the main study.

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and professionals internally to the organisation, either through existing skills or through training and education programmes. The alternative was to use external skills, through consultants or other professional groups. Each of these methods have costs attached which also added to the burden of access.

By attempting to access skills internally a number of participants noted that finding people with the relevant experience was difficult. “Before I was brought in this job had been part of the IT [information technology] department. The guys were well intentioned but they didn’t really get the idea” (participant no.5). “I came into the job sideways from finance. They needed this done and I’ve ended up staying for three years now cause they haven’t found anyone to replace me” (participant no.12).

In cases where the skills needed developing in order to meet the need internally a number of participants noted the cost of training and education in the profession and practice. “I’d like to have more of a team working with me. But I can’t justify the budget of having to train them when the cost of the courses are so high and I can’t employ people with qualifications in the area because there aren’t enough of them... they’d cost too much” (participant no.9). Externally accessing skills seemed not to be a problem of availability but in general one of cost. “If we had the budget we could hire a consultant to do this for us, but to be honest we’ve had bad experiences with consultants. Cost is one issue for us, but of the ones we have had in they’ve been no more qualified than us” (participant no.15).

These comments seem indicative of a wider problem of accessing skills within the risk management profession. As the participants did make these observations of their own accord without introduction from the researcher it would be of value to develop this issue further to show the level of importance and interaction this plays within the risk management practice.

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compelling risk managers to act with different goals than has previously been seen, and September 11th seems to have had only limited effect in changing practice. Within some organisations it has affected dramatic change, whilst in other almost none. This phenomenon could be of a great deal more use if further data can be developed. Taken as a whole these three industrial drivers seem to be of significant interest to the participants. However, any further investigation will need to take into account the need for the interviewer to introduce these titles in order to receive specific feedback on each topic and not the widely varying levels of response from these semi-structured dialogues.

4.4.3 Expertise availability and cost

The previous discussion on industrial drivers was an anticipated point of interest, from the literature and current awareness of the field, which the participants did elaborate upon. However one issue that was almost overwhelmingly agreed upon by the participants has been the impact of training, expertise, availability of these and the costs incurred, upon their risk management abilities and process.

This was an awkward code to develop as it relied on a number of factors but was clearly evident within the transcripts. Eventually it was decided that the coding must be represented by availability of skills and the costs represented by them.

Expertise availability and cost – the extent to which the access and costs incurred of gaining or retaining risk management professionals and their skills has impacted upon an organisation's risk management processes.

As mentioned this was an issue brought up in many of the interviews – fourteen in total. Through each of these comments there appeared two methods of accessing the skills and the costs were incurred as a result of these methods. Firstly it was possible to access skills

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Reputation was quoted by one of the participants as being an important constituent part of their risk management policies. “Some time ago we had to rewrite our [risk] policy and we decided that after safety to our staff and customers we had to protect our reputation. This came even higher on our list than protection of our assets or stock” (participant no.1).

It was expected by the researcher that the events of September 11th 2001 would have had a significant effect on risk management practice in the UK. A number of participants certainly referred to it by name (9:11, September 11th, World Trade Centre attacks etc) but their reference to it fell into two distinct categories. There were those participants who had greatly changed their practices, policies and even business structure in response to the events and those who did not change in response at all. “When 9:11 happened it changed everything. We brought everything in-house. Back-ups... recovery sites...we have all dedicated stuff now” (participant no.18). “I’d been telling the senior management that we had to plan for worst cases. When September 11th happened those worst cases were there in front of them... it really got their attention focused on our problems” (participant no.7).

Those whom the event did not seem to have an affect upon acknowledged their practices as being unable to cope if a similar event was to involve their organisation. “[The] attacks on the WTC [World Trade Centre]... we’d thought about worst cases like that, but we can’t plan for everything, so we didn’t” (participant no.12). “We’ve planned for years using an air crash scenario as our worst case... 9:11 didn’t change it, but it did make me think a bit more about the effects on the whole area not just [company name]” (participant no.11).

It would appear that each of these topics is of interest in adding to the overall unified model and in further investigation. The Turnbull report does not appear to have had a great deal of effect upon risk management practices within the organisations represented by the participants. The impact of reputation and public relations appears to be

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September 11th 2001 – reference to the events of that date, their repercussions or organisational decisions based upon experiences or practices related to those events.

Although only half of the participants either mentioned the topics above by name, or with sufficient reference to make clear their meaning, there was some considerable realisation of the effects, or lack of, from these pre-supposed industrial drivers.

The Turnbull report was singled out by a number of participants as not being a major source of change or development within their working practices. “There have been missed opportunities... the industry could have really changed when Turnbull came out, but because it didn’t have teeth it just turned into another ‘tick box’ effort for senior management” (participant no.6). “The guidance from various sources, Turnbull, [the regulator]... it’s all just that. Guidance. It hasn’t changed what we do or how we do it” (participant no.17). Nevertheless, the Turnbull report did receive some praise. “Turnbull was a start. It showed a commitment to risk management and after that it was up to each company how they performed it, or committed to it themselves” (participant no.10).

Reputation management was a relatively easy descriptor to recognise within the transcripts. Many of the participants acknowledged their role in protecting the organisation’s reputation, or of their reputation being an important rank or status to maintain. “Because we deal with peoples livelihoods they need to be confident in us. Part of this is down to our reflection in the media. If we fall over [have a failure] it doesn’t just affect us in the short term our reputation will suffer and that has tremendous implications” (participant no.9). “The incident at Allfirst is a great example for me to use on the board. They lost a lot of money... not enough to close them down, but they had to shut the office, sack people... it made them look like cowboys” (participant no.13).

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important to us as a company, from the director down to the receptionists... it's an issue for all of us" (participant no.8).

It would appear from the various instances and clear manner in which participants expressed themselves in their description of awareness it is certainly a factor, to some extent, within organisational risk management practice. This topic is continued into the next stage with further examination of the involvement of risk management awareness in the success or otherwise of risk management practices.

4.4.2 Industrial drivers

It was apparent from the summaries given in the literature review regarding the industrial drivers that there was no clear understanding of the impact of these issues upon those working within risk management, or the practice of risk management. Rather than prejudice each interview these subjects were not specifically mentioned by the interviewer and the comments included here were not solicited in any way by direct questions on the subjects.

Through the coding of the transcripts the researchers noted any references to these topics, either through direct mention of the terms or through an indirect reference to the explanations of these terms. Only in cases where the researchers each distinguished the use of the terms of the surrounding descriptions were the quotes included here.

The Turnbull Report – any reference to the ICAEW guidelines on corporate governance, with regards their implementation or other bearing upon the organisational risk management process.

Reputation management – mention of the impact or effect of factors such as reputation, public relations, media or corporate affairs.

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'competence in achieving risk management' and the 'lack of commitment' but neither of these descriptors fully acquire the ability to code for a level of awareness.

Additionally the 'influences' portion within the Ripple model could be intimated to include the level of awareness as a 'factor which determines the methods available to satisfy the stated needs'. Yet it does not specifically go on to elaborate how this awareness would interact or affect the system. Finally the CMM requires knowledge and repeatability (hence awareness) to exist in order for progression to occur, yet there is no mention how this level of awareness adds or detracts from the advancement through the maturity stages.

Participants remarked upon a number of levels of awareness which affected their work in different ways. Firstly the awareness at the junior or, for lack of a better description, 'line worker' level: "They [employees] don't see it as important, mostly because they don't know what it is. I've taught a few and they really see the benefits, but the vast majority just don't see it" (participant no.11). "I don't think most of the company even knows we have a business continuity manager" (participant no.5).

It has already been developed, through the industry snapshots and the existing models, that commitment from senior management has a considerable 'knock-on' effect within organisations. However if the awareness of risk management did not exist at high levels the subsidiary effect would likely be a poor awareness throughout the organisation. This certainly seemed to be a factor in a number of cases. "There's no buy in from the board... no one wants it [risk management] so no one does it. Departments won't give me the time of day, there's no reason they should give up time if it's not a management priority" (participant no.3).

However, not all comments regarding awareness were negative. "I guess we're all aware of the issues [of risk management]... I mean they've tasked me to review it... and it's

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generated by interview rarely follows predetermined coding structures without some issues being left without clear coding. This is especially true within the disaster and risk management fields where both the practice and the research are constantly changing (Phillips, 1997, pp.190).

In order to capture some of these emergent issues, that do not appear to be described within the existing models, the researchers noted phrases or comments that were comparable and developed codes to fit. In each case this was conducted independently with a series of participant observations being the necessary criteria to develop a new code. Once this process was completed the new codes were brought together from the triangulation and those codes which were agreed throughout the three analyses follow. In these cases not all of the participants had an opportunity to have their remarks included.

4.4.1 Levels of risk management awareness

This issue was brought up by a number of the participants and was noted as being of significance to them. In order for it be coded and checked through all of the interview transcripts a definition of the code was developed using the three explanations given by the researchers apparent from the text.

Risk management awareness – the extent to which the level of knowledge of the process, or at least a conscious recognition of it, affects the organisation or individual. This awareness could result in either positive or negative outcomes.

Although this understanding of the process of risk management, and its practice, is touched on by a number of codes already used, it is not one that is fully explained by them. The latent elements within the Resident Pathogen model do mention the

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5. Optimising – organisation has the means to identify weakness and take proactive measures to adjust process.

2 Participants

From the pilot interviews it was apparent that getting to this level was a demanding task. This was proven by the fact that only two participants were able to describe their organisations as proactive and with the ability to identify weaknesses. What is prominent with these two organisations is that they are both international organisations, with their headquarters in the UK. Both these participants also made mention of the fact that their adherence to risk management practices is far beyond what is required of them by current regulation or guidance. In addition, both participants representing these organisations were seeking to provide some level of competitive advantage by proving their organisations as having a highly proficient approach to risk management.

“It’s a selling point for us now. We are recognised as a leader in risk management practices and as a result it gets harder not easier. We have to be more proactive in our risk identification and remediation strategies. We have to collate all our information and really study what we could do better” (participant no.51). “The company didn’t intend for risk management to become quite so big a deal. The board recognised its importance and gave the risk management team representation at the meetings, but in doing so they started to realise how the risk management process actually underpins everything we do. So now risk management has become an objective of the organisation and, as such, it needs to be measured against other processes, adapted and progressed just as any process is” (participant no.42).

These comments appear to be highly supportive of the maturity levels as a measure of capability of an organisation’s risk management practices. There is still a subtle border between a managed process and a defined process but this is an important distinction as it embodies the issue of organisationally-wide practices as compared to splintered efforts by individual departments.

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The limiting factor to organisational capability, as laid out in the model development from pilot study findings, was expected to be the availability of relevant expertise and the cost involved in accessing that expertise. This impression was upheld through the main study findings. Those organisations at the lower end of the capability scale were quite clear that they could not find professionals with the relevant expertise within the budget they could afford. Efforts to train existing staff were also noted as a problematic cost issue. “We’ve had three people in this role [risk management] in less than two years. There’ve been a number of reasons for this fast turnover... we can’t pay enough to get the right people, there aren’t enough of the right people, and training someone already here would take too long” (participant no.80).

Question 10 asked: ‘How easy has it been to access capable risk management experienced personnel internally or externally? And to what extent has this been an issue for you?’

Where questions eight and nine both fed directly into the capability maturity scale, this question developed a number of interesting issues regarding not only cost but issues of the training and education in the profession. This was felt by a noticeable number of the participants, eighteen in total, that although in recent years there had been a rise in the number of training courses available in the industry there were doubts over the validity and quality of many of them, and there seems to be no real method of distinguishing the poor quality training from the good. “I could send my staff on dozens of different courses and hope they become more skilled at risk management, but which course? How much should I pay? What qualification should I look for? I’m not the expert – that’s why I’m sending them on the training” (participant no.27). “We’ve hired consultants in the past to train our staff and they’ve been expensive without due cause. Our staff are left bewildered not educated by them” (participant no.38).

In addition the participants felt that this access to expertise did impact their risk management capability directly and on a daily basis. “The [senior] management aren’t

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supposed to be skilled in risk management, so I can leave that be, but if we don't have skilled people doing the work and reporting back to them, then there is no process at all. I wouldn't get a human resources person to manage the financial processes, so until we have the expertise in risk management I'm not going to ask someone to put themselves in that position" (participant no.79).

From these component sections it is apparent that the levels of capability are a worthwhile measure of the process acting within an organisation. Not only do they show a progression that can be measured and compared, they also develop a number of interactions that appear within the overall STORM system. Importantly, the issue of expertise has been raised again and is still showing its power as a limiting factor upon current and future organisational risk management progress.

6.3.1.5. Strategic organisational risk management process

The section of the model titled 'strategic organisational risk management process' was intended to represent the actual process of risk management as it was carried out by the organisation. The objective of the model element and its study was to ascertain the extent to which the participants felt their organisations were following the process as laid out in chapter 2 (see figure 2.2). It was considered an important research interest to verify where in the defined process the organisations were actually starting their own investigations. As first developed in the literature, there is a common failing to 'establish the context' of the process. To generate the relevant responses from the participants question eleven was used.

Question 11 asked 'Could you describe the risk management process used by your organisation from the strategic level?'

Participant responses were almost total (fifty one participants) in their omission of the first stage of the process. Additionally these participants failed to feedback the

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information at the output of the process into the continuing cycle of risk management. Remarks from the participants were limited in their explanations, but some did attempt to clarify their process. “At the board level we examine what risks we face and develop remediation activities. We try to treat as many risk issues as possible within our control, but obviously we can’t do everything. It’s really up to the departments to prioritise risks and then we [the board] decide whether to take action or not” (participant no.49). “It’s an iterative process. Department heads will develop their own risk list. That’s fed into the senior management and they decide what they are willing to accept and then it’s passed back down for action. At some point in the future the departments will have to report on progress” (participant no.70).

This was a challenging research section. Although question eleven did assist in bringing out the actual process used by the organisations there was little actual substance in the comments or the participant’s views on the matter. Rather than being a sum of the previous elements, this section instead became a series of issues which seemed to describe a number of the choices that the strategic level of the organisations needed to address.

By asking question ten the process of risk management was not actually fully explained within the context of the model. The lack of depth and interest in these questions shall be investigated more fully in a subsequent section (section 6.3.2) as this may suggest the greater importance other interactions and methods of interaction within the model structure.

6.3.1.6. Summary

In summation of the main study STORM model analysis it has become apparent that a number of issues should be developed and discussed between the literature and the findings. There was a notable lack of perceived, long term, contextual change as a result of the Turnbull Report or September 11th. The effects of society within the context

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element was also lacking support, although that did change as the influence of reputation management became more evident. There is continuing agreement that the concerns element suitably represents a number of latent elements active through the senior and middle management levels and those of line workers. It is suggested that the debate over the necessary approach within the organisation, whether either top-down or bottom-up is more suitable, will continue as there is no clear resolution within the participants.

The element of controls proved to be of interest with regards both reputation management and the level of formal risk systems or teams within organisations. There are indications that informal teams may facilitate risk management processes to the same extent as formal ones. The effectiveness of these teams, formal or not, could depend upon the capability demonstrated by the organisation and its staff. To this end the maturity levels are still proving their worth in demonstrating the current capacity of the organisation to strategically manage risk. The limitation placed on this element by a restricted quantity of expertise in the field and the accompanying costs seems to weigh heavily on those with a realisation of their organisations' lack of development and desire to improve.

The final element of the model has proved somewhat different in actuality to that of the response expected. Rather than discovering a depth of information regarding the processes used by organisations there was a curt and fairly simple answer in the majority of cases, that they miss key steps of the process as it is currently defined. What this section did highlight however is a number of interactions which seem core to the functioning of the model itself. These have been examined in the following section.

There have been a number of comments and issues raised by the participants which are valuable in their relationship to the previously generated hypotheses. These hypotheses relate to the model construction and its interactions as a tool for identifying some preliminary beliefs and testing them against the findings as we progress.

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Hypothesis 1: The relationship between the model elements (context, concerns, controls, capability) can be demonstrated to be multiple and complex. As indicated by the open nature of any system element affecting any other.

From the studies so far there appears little doubt that the relationships are both multiple and complex. Within the four elements there are a number of relationships in conflict, to some extent, before the elements are even related to each other. As an example the concerns element has a number of factors acting within it, against one another. The needs expressed by the various levels, limited by the awareness of the risk concept is just one area where the difficulty and complexity of the element are clear. Relate this issue to another of the model elements, such as capability, and there is an unmistakable link between the organisational levels with regards needs and risk awareness to the overall organisational capability.

By examining each element of the model these relationships become apparent. In fact, one element cannot be explained without the study and explanation of the other. These are not single points of contact. The entirety of the model element needs to be related to another in order to make any real contribution to the overall model.

Hypothesis 2: The three internal organisational model components (concerns, controls, capability) consist of inter-relationships that all influence the risk management process.

This hypothesis was based upon the central component of the strategic organisational risk management process, but what has become apparent through the findings to this point is that this element is not representative of the core functions or factors involved within the model. As such the relationship back to the hypothesis is somewhat mixed.

There does appear to be a series of inter-relationships within the internal components which influence the overall risk management process. These inter-relationships are demonstrated through such effects as the systematic controls impact upon the capabilities

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of the organisation, or the influence apparent in the senior management level's ability to dominate the potential of organisational capability through their entire approach to the risk management process as a concept.

There is, however, a considerable qualification to this apparent agreement with the hypothesis. The hypothesis was generated within the context of the initial STORM model development. At that time the risk management process appeared to form the central core to the model with all elements leading towards it, but that has not been sustained in this research. It has become apparent therefore that while the hypothesis stands, the context in which it exists has changed.

Hypothesis 3: The factors relating to context can be found acting upon all of the internal organisational elements.

This hypothesis does appear to have been upheld by the participant results so far. There have been references to the impact of the regulators of the various professions, and, in turn, the government and societal approaches to them. The effects of these impacts do appear to be widespread across the model elements. The limiting factors present within both concerns and capability are testament to this relationship. The impact and importance of reputation management is clearly an external to internal intersection of these factors.

Although, it should be noted that there is some dispute over the utility or veracity of recent events as contextual elements, or in particular the use of the Turnbull Report and September 11th 2001. It may be that these events are not representative of the types of events to be displayed within this portion of the model. However, they are key issues within the framework of the industry as a whole, and, as such, do assist in the understanding of the context element.

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6.3.2 Critical balances

It was always intended that the interviews would allow for emerging issues to be developed. The movement from a less structured, informal discussion to a greater level of procedure and structure from pilot to main study was never to be at the exclusion of developing new codes. The methodology, in chapter 4, laid out a case for this contemporary arrival of data as the approach and model are still based upon the practice of grounded theory. It became apparent that the final stage of the model was not yielding the kind of expected responses with regards risk management process and was following a quite different path in the majority of all the participants' views.

It was expected that this section of the model would develop information regarding the actual risk management process of the organisation. It was intended that certain questions be answered, such as: at what point in the process did the participants' organisations begin following the principles as set out in the literature? However in the discussion surrounding this stage, the asking of questions eleven and twelve, and from the wider interview responses it became clear that this section of the mode was characterised not by the process itself but by a number of critical balances which each organisation had to find an individual response to.

These balances were initially noted by the researcher and upon further investigation the triangulation researchers were asked to re-examine the interviews in light of any data that appeared consistently throughout, without existing coding. The two triangulation researchers concurred independently that these sets of codes needed to be developed and introduced in some form to the model. Coding was then developed with the aid of the triangulation researchers to encompass these critical balance issues. These coding structures do bear some relationship to a number of existing codes, yet the differences are more descriptive than the similarities.

The three critical balances were coded as follows:

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Policy versus action – this is characterised by the balance between the stated organisational policy and the apparent activities of the organisation with regards risk management. Both the policy and the actions of the organisation could be in agreement and balanced, or they may be out of synchronisation with a lack of reflection in word or deed.

Formal versus informal – this is regarded as the organisational balance between the using of a formalised working party in addressing risk management and an informal approach to operating the same process. This may not be a conscious decision made by the participants or the organisation but could be an output of the risk management strategy, or lack of the same.

Process versus output – this is characterised by the emphasis placed upon either the value of the experience in conducting risk management, or the importance of the end product of the process as the goal sought.

As these codes were developed post-interview, based on the existence of the data, there were no questions generated to elicit further response at this stage. However, at the validation of the model it will be necessary to examine these balances with regards to their applicability and generalisability.

6.3.2.1. Iterative feedback

The three critical balance elements appear to provide a succinct guide to those key decisions made within organisations that affect and effect change in that organisation. Hence as each of model elements feeds into the critical balance issues so do the critical balance decisions feed back out into the model elements changing the dynamics of each element. As an organisations capability, for instance, improves the critical balance of formal as opposed to informal processes will likely change as a greater level of

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repeatability and evolution is included in the organisational practice of risk management. Thus as this critical balance is altered the adjustment also feeds back into the other model elements. In this case, the emphasis upon the organisational controls element will likely change to require a greater level of standardisation and homogeneity throughout the organisation.

This interrelationship, between critical balances and model elements, is one that must be highlighted as a two way transfer. The critical balances whilst being an important guide to the decisions faced by organisations also act as elements of their own within the model and as such effect change upon each other element. However they are an internal element and while they are affected by external or contextual changes it would appear that critical balances can only directly impinge upon the actions within each internal model element; controls, capability and concerns.

This change to the model, and importantly the iterative nature of the relationship between model elements and the critical balances draws attention to one of the first issues discussed regarding existing models; that of an open systems approach. Not only must the model be open to external and contextual changes but it must also interact to effect change. This addition of a critical balances element has been brought about directly from the commentary and data from participants and it clearly shows the dynamic nature of current organisational risk management practice.

6.3.2.2. Critical balances analysis

The comments from each interview were coded using the structures detailed above and what follows is a discussion of the results and interviews following these codes as a format, and not the order of interview. These critical balances were identified post-interview and such there was no ability to further develop upon responses in order to gain a fuller description of a participants views. As such, only those views which could be absolutely coded using the structures above have been used.

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Policy versus action

This balance represents the organisations' focus upon either policy or action in fulfilling their risk management approach. There was a realisation by some participants that the senior management set policies that were in excess of the activities of the organisation in relation to risk management. Likewise, some participants lauded the risk management activities of the organisation but identified that the policy did not reflect this ability or development.

Many participants did note the interactions between policy and action, as can be seen in a number of quotes regarding both controls and capability. What became clear from the interviews was that the participants' existence at the senior strategic level gave them a unique view of the operation of both policy and action. "Policy is set by us [the board] and then disseminated through the organisation... the risk management tasks are carried out by department... sometimes they meet somewhere in the middle, sometimes they don't" (participant no.23). "I've already mentioned the importance we place upon our reputation but that is such an intangible quality... we have to back it up with our risk management processes otherwise our strategy is meaningless" (participant no.65).

Whilst participants did discuss the relationship between policy and actions there were only three participants who mentioned it within the context of a balance to be struck. Representative of this view was this quote from participant no.46: "There has to be a meeting point within the organisation's strategy for the risk policy and what we actually do. We can put a great sounding statement on our webpage, annual reports and the like, but the board do realise that it's our deeds not our words which matter."

There is significant indication from the research that this is a critical balance for the organisation and a question which must have been addressed, whether consciously or not, by the senior management in development of their approach to risk management.

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Formal versus informal

Throughout the interviews there were questions and discussions regarding the element of controls and capability in respect to an organisational approach to the management of risk through internal mechanisms. In some cases there was recognition of the informal process of risk management at work within the organisation which existed outside of the stated framework (see section 6.3.1.3). This factor represents the extent to which the management processes for risk management exist within formal structures or, in fact, without them.

During the study of capability and controls it became clear that some organisations had set up formal teams to deal with, control or manage risk. These were variously referred to as 'crisis management teams', 'business continuity teams' or 'risk management teams'. However, from the interviews there was a perceptible choice in pace within the organisations of whether to formalise an idealised team, or allow the continuation of informal processes that seemed to precede the development of an approach to risk management.

Organisations tended to regard this issue within the context of controls, but a degree of individual capability also appears to be in operation. "We tried developing an overall risk management team for the organisation. They had procedures and guidelines for dealing with all sorts of situations... but they didn't know the departments like the staff did, so we made the decision to move all risk management decisions to the departmental level, and they have far fewer problems now than before" (participant no.75). "The problem with a formal process of risk management is that it has to be followed. Sounds obvious but at least if there isn't a procedure involved we can react to situations in an adaptive and responsive way" (participant no.29).

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Process versus output

This was a general level of emphasis placed within the organisation either upon the importance of the process, or the finished product, output. When carrying out any risk management process there is a period of fact-finding designated by stages such as establishing the context, identifying the risks and analysing the risks. This process should be a learning one, as it provides new information to the organisation on its risks. The output to the process is evident in a report or plan of action to treat the risks identified.

This critical balance appeared to exist as a dichotomy within the organisations represented. In cases where there existed a realisation of the importance of the process there was also the pressure to create a physical output as an end goal, regardless of the process accomplishments. “Because we’re a central function to the organisation we arrive at departments to run through the [risk] procedures and all they want is the plan. They just want a tick-in-the-box... thanks very much see you next year. It’s not helpful and it’s not a learning process for anyone” (participant no.74). “Traditionally we’ve just written the plans and had them sitting on the shelves of the managers waiting for action. But the senior management took on a new approach last year. No new plan was written and instead we ran a scenario... involving all the departments. It scared them witless because no-one had read the previous plans and now they didn’t even have that. But it was incredibly useful in getting them to the table and learning about risk management” (participant no.53). “As a consultant I tended to find organisations being geared towards the report, the plan, the physical document and they neglected the learning of the process. But here it’s quite the opposite – the entire purpose is about improving what we do, and that takes involvement and learning” (participant no.51).

The learning process of risk management is one identified widely by the participants who appreciate the importance of the process. Those with a focus upon output appear to generally neglect the value of the process in changing the risk practices of the organisation as whole.

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6.3.2.3. Summary

These critical balances appear far weightier in their importance to the organisational risk management process than the following description of the various dealing with the process itself. Rather than examine the current process of organisations the model should use these critical balance issues as key questions within the model for organisations to use in identifying their current strategy. The emphasis upon policy rather than actions appears to be one under review within a number of organisations. Yet there is not a universal acknowledgment of this balance. The issue of formal or informal risk management teams seems to be one interest to the participants. Whilst some argue that the formal teams give them the processes they need for risk management, there also appears to be those who thrive with a more informal process being able to adapt more quickly to the changing nature of the risks they face. Finally, the balance between the importance of the output and the conduct of the process is a worthy question for each organisation. If process is important then there needs to be an appreciation of the need to learn and change. However, if the goal is to have a physical output then there needs to be re-evaluation of the risk management objectives in light of that decision.

Critical balances are now going to replace the central function currently filled by the 'strategic organisation risk management process' element of the model. It shows a number of the complex interactions already highlighted through the research and develops from them three core issues to be addressed by all organisations.

6.4 STORM evolution

The main study has developed upon the STORM model in a number of key areas. There has been a greater investigation into the factors within each element and the interactions between the elements. Some components of the model elements have been found to lack real substance in the views of the participants, and likewise new issues have emerged. As a result the model itself is in need of revision to fit this new apparent reality (figure 6.2).

The context element needs some modification to register that both the Turnbull Report and September 11th have not had the level contextual impact that was expected upon the participants and their organisations. As such, they are still to be included within the model as recent events, but they could in fact be replaced by any current event as a descriptor of how this element acts externally to the organisations, and not necessarily as having a direct individual impact upon the wider practice of risk management.

As a model element, concerns has been supported by the interviews and developed, in that the organisational levels are affected by the entry point into the topic decided upon by the organisation. If this approach is to be top-down or bottom-up there will be resultant changes in the overall approach to risk management, therefore this decision must come from the senior management of an organisation.

The element of controls included a number of observations on the impact of reputation and this interaction with society, customers and consumers. This factor seems to have been placed in a high regard by the participants, more so than had previously been identified, and this will be reflected within the model.

The levels of maturity are proving to be an effective general measure of the organisations' capability with respect to risk management. In addition to showing progress within the organisation this element embodies a number of the interactions from

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organisational levels in the concerns element and the defences developed in the controls element. The limiting factor of expertise was brought to light by the participants as being of strategic importance to the process, as without the professional skills, there can be little capability developed.

The most significant change to the model has appeared within the central element of the model. Originally intended to act as a core description of the process, followed by the organisation it now appears that the interaction of the four previous elements has developed a series of three critical balances for each organisation to address.

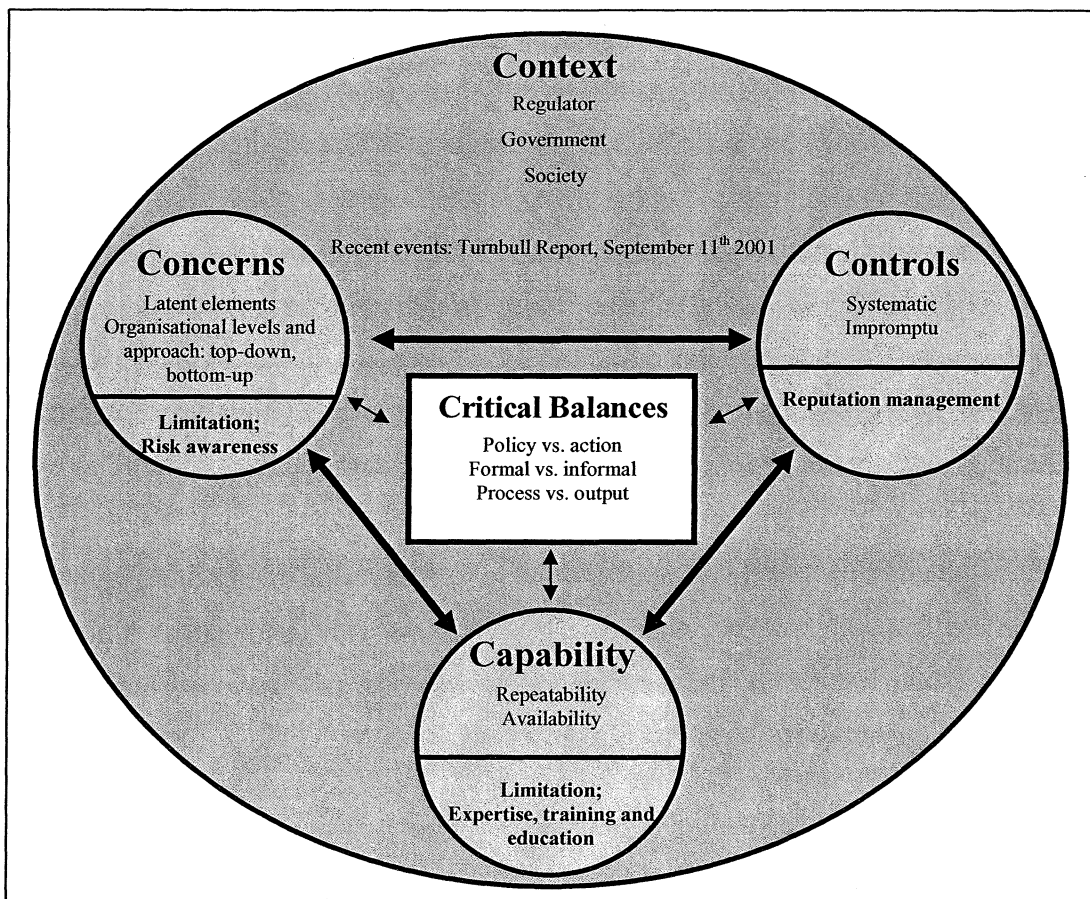


Figure 6.2 – The evolved STORM model

6.5 Summary

This chapter has set out the STORM model as an illustrative tool for the various interactions and activities occurring within contemporary organisations with regards risk management practices. The model was generated through the literature, using available and accepted existing models as an inception point and was based upon the findings of the pilot study as a first level of enquiry within the sample population.

This series of sixty interviews provided a wealth of information and a number of unexpected developments. The issue of critical balances seems central to the participant's organisations' style or method of development of their approach to risk management. Whether the approach is highly formalised, interested in policy over activity or more geared towards a physical output rather than learning through the process, all of these issues have been addressed, either consciously or not, through the remainder of the model elements. Additionally a number of the elements have needed modification based on the findings here. The contextual element has relied less upon recent events and more upon the pressures placed upon organisations by their regulators, and the government. The organisational levels within concerns have become further complicated with the realisation that certain approaches can yield differing levels of support and reaction to risk management practices. Finally, the impacts of both reputation management and expertise availability have had a greater level of response than was expected within their respective elements.

What has become apparent here through further interviews and analysis is the veracity of the STORM model in explaining the current practice of organisational risk management within UK establishments. These findings are based purely upon the model at this stage and it is fundamental to link these results back into the literature and field as a whole in order to examine just what the inference is upon the wider population.

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Chapter 7

VERIFICATION

7.1 Introduction

In many instances this section of a research thesis is titled 'validation' with the intention of determining the reliability and quality of the data developed through the research. However, in this case the chapter is thrown slightly wider under the title of verification. As discussed within the methodology chapter the issue of reliability and validity within qualitative research has been greatly developed over the course of its growth and acceptance. Verification is a representation of those changes.

The difference between the approach here and the classical validation chapter is subtle. Rather than studying the research, its findings and its conclusions post-research the emphasis here is upon ensuring verification during the research process itself. Hence, this chapter describes some of the verification methodologies used within the research and the findings of that verification process.

In addition it was felt that a post-research verification study to investigate the response from the industry to the model itself would be of value. In order that this study was conducted to verify or challenge the model it was decided to access a sample from the overall population that differed in their approach to research, in that they did not actively seek to participate.

7.2 Why verification?

The primary reasoning behind the current progression towards verification rather than validation is due to the differing nature of quantitative and qualitative research. Whereas quantitative research and data can be numerically tested against each other even after the research itself is concluded there is little scope for doing so with the outputs of qualitative research. The only way in which additional questions can be asked, or explanations expanded, is within the initial studies and the interview themselves.

One method suggested for checking the analysis and results of qualitative data has been the use of 'member checks'. This is the presentation of the results to the original participants to ensure their agreement with the analysis conducted and hence validate the research findings. However, this presents some serious flaws as a validation strategy. The participants are not researchers. As such they do not base their thinking and analysis upon the literature, methodological processes or the findings as they appear from a multitude of sources. Instead they value their own views first and foremost and as a result this form of validation most likely leads to a normalisation of the results towards a commonly held misconception, rather than an actual series of results (Morse *et al*, 2002).

In addition, the titles and topics of validation as a post-research event, especially within a qualitative environment, are distant from the actual goals sought by the researcher. If the intention is to seek the best possible representation of the field and sample as whole, then verification is the key to ensuring this representation during the course of the research. However, if the emphasis is placed upon post-hoc evaluation the researcher, and hence the research, is focused upon output and not the real-world circumstance of their research (Lincoln, 1995).

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As a result of these difficulties in translating quantitative measurement techniques for use in the qualitative environment, it becomes clear that validation in the traditional post-hoc sense is not appropriate in ensuring quality.

7.3 Verification methodologies

Verification is the process of checking, confirming and having a degree of certainty in the results. At each step of the research process there must be an emphasis placed upon verifying the findings up to that point. Thus each stage builds towards the overall verification of the study itself. In order to achieve this, a number of methodologies exist which all rely upon one key component, the researcher and his or her responsiveness throughout the investigation.

Responsiveness is crucial through the performance of the research as a multitude of issues, questions, analyses, results, contexts and queries will co-exist at any given time during the project. It is the researcher who is best placed to deliberate and respond appropriately to these issues. In this way newly emergent data can be brought back into the study at the earliest opportunity, or changes can be made to the representative model as they become necessary. It is this quality, within social inquiry, that is crucial to the real quality of the research (Lincoln, 1995). Not only is responsiveness vital to the research quality but the lack of it is very poorly detected using post-hoc evaluation of traditional validation.

As a result of these developments within the field of research quality it was felt more appropriate for this research project to attain verification through a number of strategies; methodological coherence, sampling sufficiency, development of dynamic relationship between sampling, data collection, analysis and theory development.

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7.3.1 Methodological coherence

As a form of verification, methodological coherence aims to ensure a level of similarity between the research question and method of approach. The nature of qualitative research is that it shows a great level of interdependency and this will require the ability to adapt the research questions, the models and the process of data collection as new issues emerge. Methodological coherence demands that emergent issues are fed as quickly as possible back into the research in order that data fits the reality and not the research construct.

Methodological coherence matches thoroughly with the concept, aims and processes of the Grounded Theory approach used during the research. Grounded Theory advocates and demands openness to new, emergent data and is intended to allow the researcher the flexibility in changing the nature of the research as the data proposes. However, they are not the same in totality. Where the Grounded Theory approach is a research tactic, methodological coherence is in fact a level of responsiveness right the way through the research project.

Within the context of this research, on a number of occasions, there was the need to change the model structure to reflect emerging data. The arrival of limiting factors within the model elements was only possible due to a realisation that without these limitations being reflected within the research there would be a lack of coherence in our understanding of the field as a whole. This was also evident in the removal of the original central core of the model as the 'critical balances' element became apparent to the researcher.

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7.3.2 Sampling sufficiency

Essentially this is characterised by the appropriateness of the sample to the population under consideration. The participants must represent the wider population and must have the knowledge sought in the research. In addition there must be numerically enough participants to gain representative views from, many rather than few, and develop replication of participant contributions.

Clearly this is somewhat of a subjective verification strategy. However, its influence is profound. In order to satisfy sampling sufficiency there must be no doubt that there were enough of the right participants involved to ensure that their views are representative and not aberrations. In order to achieve this from the outset the researcher selected the largest possible number of participants that could still be reasonably transcribed, coded and used within the research. It was clear from previous qualitative research projects within similar areas that the sample sizes of twenty in the pilot study and sixty in the main study were in excess of current demands.

In order to satisfy the need for the sample group to be knowledgeable within the context of the research – organisational risk management, it was crucial to approach and involve the appropriate professional bodies as they were only real access point for this population. However, this raises two concerns regarding the research:

1. that the sample is made up of professionals with an active interest in the field, as they are members or attend professional bodies
2. that the sample, in consenting to take part, implicitly agree that research is necessary and support it.

These are in fact insurmountable issues for any qualitative research, but it is worthwhile noting them as concerns. Rather than attempt to change how the sampling is made up to try and affect sampling sufficiency it is therefore considered a valid process of redefining the research as applying specifically to the population group involved.

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7.3.3 Development of dynamic relationship between sampling, data collection, analysis and theory development

This rather long-winded title refers to the requirement for mutual interaction between what is currently known and what a researcher needs to know. This is an iterative process which returns through a cycle of relating data to models and models to data on an almost constant basis. This is the essence of the verification ideal itself. Verification must rely upon the researcher giving the data appropriate power over the model and research development. Likewise the researcher must give the model the opportunity, through data collection and analysis, to prove the worth of its component parts within the findings.

This iterative process has already been mentioned in regards to the methodological coherence, yet the difference here is the focus upon the development of the theory and understanding of the research field as whole. As such, the dynamic relationship must bear out through the entire project. The researcher must constantly refine their own views and subsequently the goals of the research as they progress. Again this is a measure of research quality that is simply incapable of quantification in post-hoc validation analyses.

In the case of this research the dynamic relationship was built up by the interactions of the researcher, the literature and the current field of risk management. As discussed in the literature this is still a relatively young field of study and, as such, changes, advancements and new methods are constantly emerging. In addition current events occurred, such as September 11th, during the research project which have had implications upon the field that needed to be recognised within the research, which could not have come about with a more fixed approach.

7.4 Verification study

A verification study was proposed to further investigate the model subsequent to its development and evolution. At no time during the research was the model presented or explained to the pilot or main study participants. As a result all of the data generated and findings developed were independent of the participant's views of the model, but focused upon their views of the field, which built the model.

In a key shift of emphasis the decision was taken to present a series of participants with the model in order to obtain responses regarding their view on how it works as a tool and how appropriate they feel it is to them and the risk management industry.

7.4.1 Verification study participants

In order to provide for a small group of participants from the same sample population as the main study group the researcher returned to the sites of initial contact; conferences, seminars and most notably the professional bodies. As the study is intended to attempt to challenge the current findings through the research it was necessary to seek those unlike the people who participated so far. The researcher determined that the main study participants had a commonality which may have lent them to being positive about the research as a whole; they wanted to take part. Therefore, a group of participants was necessary who did not seek to involve themselves in research itself.

This created somewhat of a paradox. No research can, ethically, be carried out without the permission or involvement by the participants. Yet it was these participants that were most needed in testing the data. The resolution came from a number of the professional bodies themselves. A list of seminar days arranged by the professional groups concerned was provided to the researcher. Due to time constraints only two sessions were selected,

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and based on that selection the professional bodies set aside a room during the day for interviews to be carried out. The professional bodies also provided a list of attendees expected for the day and a random selection was made of ten attendees. These attendees were asked on the day if they would give up half an hour of time to be part of a research study. Only three attendees refused to take part, and all cited their reasoning for non-involvement being their only recent arrival within the industry.

7.4.2 Verification interviews

In contrast to the pilot and main studies the intention of this part of the research was to draw out negative response with regards the model developed and the findings of the research. In order to access this information the STORM model was presented to the participants and comments were request on it as a tool. Four open questions were asked and these responses were included below. None of the interviews lasted more than twenty minutes and all were transcribed in the same manner as previous interviews.

The four questions used in the verification study were developed in consultation with the triangulation researchers with the intention of testing the applicability of the model to the wider field:

1. How would you describe the model you have been shown?
2. What would you say are its key attributes?
3. In what ways could this model be useful to your organisation?
4. As a risk management tool do you feel that there is anything lacking within the model?

The coding of the answers was performed with open coding allowing for any and all responses to be referred to within the analysis and to ensure no bias was being preset by the researcher.

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7.4.2.1. Verification interview analysis

The participants generated a number of key points through the answering of the four questions. The first question was an investigative approach to understand how the sample population would view the model. Issues regarding its intelligibility and clarity to the participant were of particular interest.

Without exception the participants identified the four elements of context, concerns, controls and capability as all referring to an organisational approach to risk management. “Well, it appears to show the relationship between these four titles [participant indicates the elements] all leading to these central ‘balances’. If I was looking at it from a management perspective then I would say it shows the importance of people and processes rather than assets and data” (participant no.89). “This model is about interaction right? It’s showing all the things that go on inside the organisation... oh but there’s this context section... so I suppose it’s really a model of the organisation, and the arrows show what is going on” (participant no.87). “The three circles are about risk management, the box is organisational problems and it all exists in this overall environment. It’s trying to show links between them all” (participant no. 91).

Question two was intended to generate a greater level of analysis of the model, and what its key features seem to be to the participants. “It’s about risk management in the largest sense of the word. Its key attributes... well it’s already highlighted a few things to me that I’ve not managed to put into words before... critical balances, I like that” (participant no.83). “Simply, it’s new. Every time I come to these events [seminars] I’m hoping to get new information, but it’s all same old, same old... at least this is new. It is isn’t it?” (participant no.86).

The two opening questions were intended to obtain useful replies regarding the visual descriptiveness of the model, but also to give the participant time to study the model and understand in their own way what it depicts and how the elements interact. Only after the

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participants had spent this time with the model could there be any questions specifically regarding how they might use it.

Question three received mixed responses from the group. There were those who felt that it was useful and they could see a place for it within their organisations, and there were those who felt that even though it was a useful tool it would be the decision of the senior management whether it could actually be used, not a reflection upon its value. “I’d like to use it as a teaching resource. Most of my job is teaching people about managing risk. This could show them how complex the process is... and I think it would be very useful in pointing to some issues we haven’t even thought of” (participant no.85). “We could definitely use a model like this. Our problem is that we don’t have a strategic view of risk, it’s all over the place at the moment. I would hope that something like this model could make us take a step back from it and look at the bigger picture” (participant no.88).

Those that felt it was of value but that its usefulness within their organisation would be limited by their senior management did express their support for the model individually. “I’d use it. But I don’t think our board would understand it. They need simple process diagrams, and even then they have to be bright colours to get their attention” (participant no.92). “If I could get the board along to events like this, involved in stuff like this [participant indicates to the model] they’d see how important it all is. The model shows that broader context. Right now they just think about it all very... rigidly” (participant no.84).

It is an interesting point raised by participants no.92 and no.84. The interaction of the senior management is a latent element borne out in the model. So their realisation that their actions or desire to use the model would be limited by a factor already in the model is both promising, as it confirms an existing result, and amusing as it becomes a circular argument. The better the model represents the interactions the more complex it will tend to become. As it becomes more complex the interactions it describes will result in the model being less likely to be used.

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Finally question four was asked in order to see if, during this verification process, the participants could identify any areas of weakness or lacking in elements that they felt important. What became apparent is that there was a body of opinion which felt that the model needed simplification if it was to be used as an illustrative guide. But as a tool with which to address risk management there were no comments regarding a lack of issues involved, or the need for additional factors.

The issue of simplification was one referred to by eight of the participants. However, they did refer to this only in the context of the model being used as an image in its own right, and not a working tool as it has been described through this research. “As a tool for me it’s fine. But as I said, if I took this to the board they’d just glaze over with incomprehension. I’d use it, but I don’t think I’d give it to other people” (participant no.90). “I think the only thing it seems to lack is a clear flow of progress. I understand it’s not supposed to be a process from A-to-B, but that’s how management will want to see it, and to do that it would have to be so much ‘simpler’” (participant no.83).

A number of comments were received that, although flippant, do prove to be interesting regarding the way the model was viewed by this sample. “Shouldn’t all the arrows be broken to represent the fact that it’s the job of the risk managers to put it all back together again?” (participant no.86). “If this is all about managing risk then surely all the circles [elements] should be blank, that way we could just fill in whatever buzz word is around at the time...” (participant no.88).

All of the quotes used here are representative of the participant responses and do indicate that the model is fully understandable and appears functional to those who would be using it as a tool. These two sessions of verification interviews also ended in an offer that was not expected or solicited. Three of the participants asked if they could take the model forward into their organisations as a tool. In return for doing so they would allow access

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to themselves as the risk managers and to the organisation as whole in viewing the impact of the tool.

This raised the possibility of a wider form of verification in the application of case studies using the completed tool. However, within the six months following these sessions, none of the three participants had returned any messages or contact from the researcher. It was felt that this difficulty of gaining organisations to work with in-depth, as had initially been the intention of the project, would be highly time consuming. This would be especially true in the latter stages of the project, and could after significant effort on selection and contact still result in no case study participants.

7.5 Summary

This chapter has drawn attention to a key difference necessary in the approach to qualitative research. That is the need for verification throughout research to ensure quality rather than a review of the research by validation when nothing further can be done. Verification has presented a number of opportunities to show how the researcher conducted the process to ensure the quality of the finished article and introduced a short verification study to develop the views of the population towards the STORM model as a tool and representation of the strategic organisational risk management practice.

Chapter 8

DISCUSSION

8.1 Introduction

This chapter is intended as a link between the research and the academic world within which it exists. As such it draws the threads of the literature, developed in chapter 2, through the weave of the research and its findings. It will discuss key themes within the field in relation to the research findings and the existing body of knowledge.

8.2 Methodology

In chapter 3 the Grounded Theory approach was described as the most appropriate methodology for use during this research. The benefits of using this approach were that a fixed research plan was not dictated at the start of the project. As this was an exploratory and developmental process this freedom to use the findings to further the direction of the next stage of research has been invaluable. An example of how this freedom to adapt according to findings was seen in both the pilot and main studies.

The pilot study developed a number of emergent issues which could not have been drawn into the research otherwise. The results clearly showed a need for further investigation of the levels of risk awareness, the availability of expertise in the field and a number of industrial drivers, all of which were then incorporated in the subsequent research. These

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eventually became model elements in the developed STORM model, based upon emergent data that would otherwise have been lost to the researcher.

The main study also benefited from this approach. There was a clear perspective from the participants that the risk management process itself was not at the core of the model. The core was in fact a series of critical balances which the participants described time and time again as the three most common problems over which they have to challenge the senior management level of the organisation. Again, this is a process that would not have been possible following a more fixed methodology.

8.3 Strategic organisational issues

There have been a number of issues raised in the research that risk management professionals are being faced with throughout the industry and noticeably across both sector and organisational size differences. These issues have a number of implications for risk managers, but also for the organisations they work within and as such they have been termed ‘organisational’ rather than merely risk management issues.

8.3.1 Policy versus action

The first heading is that of policy versus action within organisations. This section was developed as a reaction to a number of the comments from participants in section 6.3.2. The participants identified that their organisations had too great a reliance on the risk management policy and that this was not being represented by the actual activities of the organisation. This is a two way relationship, as the actions can also be far in advance of the policy set for the organisation.

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If the risk management policy cannot be fulfilled by the actions of the organisation, especially in cases when the management of risk through crisis or emergency management is at stake, there are serious implications for the organisation. The depth of these implications may only become apparent when these events do occur. As in the case of both Challenger and Barings bank there was an absolute belief from the outside world looking in that the risk management policies of the organisation matched the reality when in truth there was a significant lack of cohesion between the two.

The academic literature regarding this issue is decidedly weak. The risk management field (section 2.2.3) contains a number of texts which regard the policy as synonymous with the practice of the organisation, yet this is clearly not the case. Even the guidelines developed within the Turnbull Report (section 2.4.1) are being subsumed into the issue and appear, from the results, to have been a case in point for the development of policy and not deed.

Within this balance between policy and action there are a number of additional complications which also yield problematic issues for the risk manager.

8.3.1.1. Public relations bias

There is an ever growing importance of public relations in the dealings of senior management. In organisations dealing directly with the public this factor can become an end unto itself. This emphasis upon the public relations, marketing or sales value of the risk policy is undermining the likelihood that the organisational activities can actually meet the stated objectives. Risk management professionals are faced with the daunting challenge of developing an organisational approach that matches a policy and not the real needs of the organisation.

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8.3.1.2. Policy avoidance

Another attribute of the policy mismatch compared to action is under the title of policy avoidance. This is the direct circumvention of stated policy or practices by staff, usually to make working life easier on a daily basis, perhaps to ease the burden of multiple levels of safety checks and the like. Within a risk management context these are very worrisome occurrences. They are perpetrated by the very people who know the organisational system most thoroughly and, as such, can avoid detection. In addition line managers can be totally unaware of the practice, or in extreme cases they may condone the acts.

Where policy is far more advanced and distant from the actions and beliefs of those within the organisation itself there is likely to be at least some cause for alarm as policy avoidance presents a chronic threat to the risk management capability of the organisation as whole.

This issue was expected to play some role within the research (section 2.3.1) and provides a number of insights into the level of complexity involved in both study and rectifying this problem. Authors such Turner and Pidgeon (1997) and Shrivastava (1987) and Toft (1992) all recognise the important role that organisational culture and policy subversion have played in major accidents, yet there is still not a focus of attention on this issue.

8.3.2 Formal versus informal

The second critical balance was developed during the main study upon the realisation that not all organisations had formalised processes of risk management, or have a predetermined group or team of individuals whose responsibility this was. These teams come under various guises, acronyms and pseudonyms but their purposes are common – to manage the risks faced by the organisation, either proactively or reactively depending on their remit.

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Literature and studies from academics and practitioners such as Flin (1996), Tierney (2001) and Linstead (1995) have developed, at some length, the importance and value of formalised risk management teams and practices. Yet there has been little development regarding the impact of the successful informal management of risk.

The crucial realisation to be understood is that not having a formalised team or process does not mean that they do not exist. Neither does it imply the organisation concerned cannot manage risk. By the nature of continuing in operation an organisation has already proved capable of managing a number of risks.

8.3.2.1. Ownership

The sample groups accessed during the research had a number of commonalities. Notably they were all professionals within risk management and, as a result, each of the organisations represented by them had an individual considered as ‘owning’ that project. This element of ownership, responsibility or ‘buy-in’ was one developed through the capability element of the STORM model within the main study (section 6.3.1.4). It was considered crucial to the advancement of an organisation’s capability in risk management.

This ownership can be promoted in a top-down approach to the organisation. Being presented by senior management as an important project or goal of the company, yet this did not impress upon the participants a sense of ownership throughout organisational levels. The true ‘optimising’ organisation had a sense of ownership throughout all levels. They had a common belief of the importance of the process and a desire to see it succeed.

If this ownership is to be promoted and instilled within organisations there must also be a level of commitment at the senior management to lead and act as a champion of the process. Even if ‘buy-in’ can be achieved throughout the line worker or middle

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management level, without this support at the strategic level the risk management process cannot address the organisation as a whole.

8.3.2.2. Management as ‘the enemy’

Another theme running through the formalisation, or lack of it, in risk management processes is the extent to which there is a separation between management and workers. It would appear from issues developed in the industry snapshots (section 2.6) and the findings of the concerns section of the main study (section 6.3.1.2) that there is a continuing issue with regards attitudes and approaches.

As senior management becomes more distant from the activities of the organisation on a daily basis there is a tendency for organisations to construct a ‘them and us’ characteristic. The issue was one particularly noted in the aftermath of Challenger. Managers made and enforced a decision that should have been a simple engineering decision, but they remained distant from the engineering department almost as if they stood within enemy camps.

The same is true within the organisations represented within the research. As mentioned, concerns (6.3.1.2) brought forward the interactions between the organisational levels as a latent factor acting both within that model element and affecting the potential capability of the organisation. If one is to slide down the scale of capability there is a clear growth in both the number of organisations represented at these lower levels and the lack of communication between the levels. If strategic risk management is to address the overall risks presented to the organisation it must also address the risks presented within the organisation.

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8.3.3 Process versus output

Many of the participants with the research noted the undue importance placed, at times, by the organisation upon the outputs of risk management. Risk management, as described in the literature and through the findings of the pilot and main studies, is characterised by there being a process. This is a process of development, of learning and ultimately risk management comes through that process not at the end of it (AS/NZ 4360, 1995).

However this emphasis upon output is exemplified in quotes such as that from participant no.74 "...all they want is the plan. They just want a tick-in-the-box...". There is an almost constant restatement of this fact through the research findings, but it is a commonality shared by those organisations at the lower end of the maturity scale with regards risk management capability. Those organisations that focus upon the physical deliverable as the goal and an end state to be achieved are not referring to true risk management.

In addition the emphasis upon output has another implication for organisational risk management. If the goal is an output and not a more capable risk management process there is the likelihood that even the outputs themselves will not represent the capability of the organisation. Instead the documents will represent the desired capability of the organisation.

8.3.4 Expertise availability

There are a number of organisational issues for practices and processes highlighted by the difficulty of accessing or gaining expertise within risk management. Notably however, this is not an issue represented by current literature, except when considering highly safety-critical industries such as petrochemical or power. In those cases there are various studies, methods of assessment, training courses and points of contact through authors

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such as Flin and Slavin (1996 and 1999) among many others. Yet this study and experience has not been found translated into the less than safety-critical management works.

From the research findings within capability (section 6.3.1.4) there is a realisation from participants that the access to reliably trained and experienced staff within the risk management field is highly problematic. Many cite the classic market paradigm that the high demand within the industry has increased the cost of the 'product' or skill.

Without the ability to hire fully capable and trained risk management staff organisations do have the option of training an existing member of staff yet this too provides problems for those in the industry. There are no consistent guidelines for the training of risk management professionals and as a result many courses exist which do not match up to the competence levels set by recognised existing standards (AS/NZ 4360, 1995).

The third option available to the organisation would be to hire in external professionals specialised in risk management as consultants to the organisation. Whilst this could be argued as having the best attributes of accessing skills whilst not having to pay the high costs demanded by employing the similarly trained staff this is a far from ideal solution. If the consultants are employed on a short term basis there is the issue on continuity of the process, or else we revert to the issues discussed above in section 8.3.3. Additionally a short-term involvement, by its nature, cannot embed either the consultants within the organisation, or the organisation's goals and priorities within the objectives of the consultants.

There is still an issue regarding the potential skills of many of the consultants retained by organisations that participated within the research. "We've hired consultants in the past to train our staff and they've been expensive without due cause. Our staff are left bewildered not educated by them" (participant no.38). This was a representative quote

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among a number of other who questioned the actual level of training and capability of the consultants they believed were expert in the field.

8.3.5 Rewards and bonuses

First developed as an issue within the industry snapshot of Barings bank (section 2.6.3) there is a difficulty in providing a measure of the suitable balance between risk taking and risk aversion at the individual or line worker level. In the case of Nick Leeson it was clear that he existed well within the bounds of the risk taking category. As an apparently successful trader he was rewarded highly for his successes in taking risk. It was of course not clear at the time the scale of the deception he had perpetrated in falsifying his success.

Whilst it is an extreme case it does provide a valuable lesson for those in positions of risk management. If the risk takers are rewarded then how can the successful management or limitation of risk be a valued goal? This is in fact an unanswerable question within the bounds of this research. However its presence and importance should be noted as a conceptual problem for organisations to deal with on a basis which suits their risk management policy.

8.3.6 Normalising risk

A concept first developed by Perrow (1999) in relation to disasters and living with high-risk technologies, is that of the 'normalisation' of risk. This is characterised by the removal of the anxiety or danger signals which usually accompany risk issues, especially in cases of potentially severe adverse effect. This normalisation of the risk results in those working within the industries concerned to operate without the 'cognitive clutter' that many other individuals not familiar with the situation would find overwhelming.

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This is an effect clearly demonstrable in the Challenger snapshot (section 2.6.2). Those operating with the space industry had become normalised to the risks associated with it. As illustrated in the unofficial incident report written by Feynman (2001), the management had become so disassociated from the risk that when asked for a rough probability of mission failure at any given time they were a factor of 1000 away from the engineering departments who dealt solely with risk of component failure and not the overall mission failure risk.

This forms a potent contextual issue of the understanding required to access the real risk information of an organisation. If the line worker, middle management or senior management levels are at the stage of normalising their risks beyond the bounds of an outsider's reality then how can those organisations relate the contextual environment back into the company, or indeed translate the organisation's actions out into the contextual environment. The situation becomes even more complex if the various internal levels conflict in their view of risk, as was examined with concerns (section 6.3.1.2).

The key factor for the risk management process is to be aware of this process and effect upon the views potentially held by those within the organisation. Means should be created to verify the various views of risk within the organisation in order that the process undertaken by the risk manager represents the reality and not the negated 'normalised' level of risk.

8.3.7 Risk behaviours

Closely following the discussion of the normalisation of risk is the nature of organisations in their attitudes and behaviour towards risk taking. As developed in the discussion covering behaviour and culture (see section 2.3.1) an organisation can exhibit personality traits in a similar fashion to individuals and as such their predisposition or attitude to risk

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taking is an organisational issue which is reflected throughout policy and organisational activity.

Risk behaviour is best demonstrated by the two opposite and extreme ends of a risk 'continuum'. At one extreme an organisation, or individual, can be viewed as being highly 'risk taking'; that is seeking out risks/chances/opportunities which have the potential to both fail and succeed. At the other extreme the behaviour could be described as 'risk averse'; that is the avoidance of any type of risk, usually motivated by a desire to avoid failure due to risk taking.

These two descriptions are the extreme ends of a very broad possible spectrum and are best illustrated by known examples such as Nick Leeson (see section 2.6.3) who seems to characterise a highly risk taking behaviour willing to take on gambles that could result in either high loss or high success. This however, is a simplification of a complex field. The study of risk behaviour of both organisations and individuals is still one attracting great interest and one in its relative infancy. For further research the reader should access authors such as Adams (1995), Douglas (1992) or George and Jones (1996).

Within this research, and more pointedly within the STORM model, there is only an allusion to risk behaviour. The critical balance of policy versus action (see section 6.3.2) refers to the organisational behaviour regarding risk but only in the match, or apparent mismatch, between the organisational policy and activity. It is not the intention of this research to proscribe an optimum organisational path, balancing risk taking and risk aversion, yet there is a need to understand this behaviour more fully. To gain further understanding of how organisations approach risk from the very basic level of their own attitudes to risk taking then there must be a further development of this aspect, and further research to involve this within the STORM model.

8.4 Tangible and intangible model features

Within the STORM model a number of aspects have already been discussed. The issues brought out through the examination of the critical balances, and how they have interacted to form the organisational issues in the previous section, have demonstrated some fascinating correlations between research and practice. There are, however, two other features of the model which deserve further examination.

These two features are quite dissimilar in their characteristics. One seems overtly tangible within the model and the other an intangible undercurrent that appears to recur throughout the research and the model development. The first is the issue of context and its importance in the framing of risk, the organisation and its environment. The second is the role of the risk management professional and their situation within the construction of the STORM model.

8.4.1 Importance of context

Through the discussion surrounding previous models, the risk management process and the need for an open systems approach it has been an almost implicit fact that the context within which the organisation exists is highly important. Reason openly acknowledges that his pathogen model's major flaw is the lack of a realisation of context (Reason, 1990) and the interviews in both pilot and main studies indicate that factors external to the organisation have a high degree of involvement in risk management decision making (see chapters 4 and 6). Hence the importance of context in the risk management process of organisations appears to be an obvious statement.

However, context appears to be a feature in need of constant restatement and support as for every one organisation that does realise its importance there are numerous others who

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still do not acknowledge it at all. When speaking about specific risk management processes and systems many participants still begin their own risk management process at the stage of risk identification, and not on the defining of context. Without a definition and understanding of context, without a framing of the risk problem, an understanding of the scope and function of the risk management process is undermined from the outset.

In order to restore context as fundamental in the strategic risk management process it has been clearly marked within the STORM model as an element to enclose all others. In this way all additional elements, factors and interactions are influenced by the arena within they operate. Changes to the organisational context could occur in many forms and each will have a specific impact upon the practice of risk management.

This is certainly not the first discussion surrounding the importance of context and it is unlikely to be the last. Certainly as long as risk management professionals continue to talk about its importance, yet neglect its actual practice, research such as this will persist in highlighting this mismatch and demonstrating the impact which context should be having upon strategic organisational risk management practice.

8.4.2 Role of the risk manager

Through the development of the STORM model the apparent role of the risk management professional, the practitioner in the field, has become somewhat of an intangible element. Whilst each of the five major model elements are clearly labelled and their interactions can be viewed there does not appear to be a simple model component that displays the actions or interactions of the risk manager.

Therefore, it would appear as though the use of previous models is based upon a silent assumption of proficiency in risk management practice. However it has been noted through both the main study and the verification interviews that the models do actually

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contain aspects of the risk management practitioners' role, although not necessarily in a directly obvious manner. Participants commented that the role of the risk manager is represented within the model by the interactions between the model elements; that in fact the links between each of the components is entirely the role of the practitioner. This view is summed up rather neatly by a quote from participant no.89 who stated that "if the model is a representation of the organisation then the links [arrows] are the risk manager themselves, drawing together each organisational feature. Without them the other elements make no sense".

In this rather flippant remark the participant has coalesced the sentiments of a notable number of interviewees who all saw the role of the risk manager within organisations as those links, or as another participant explained "the arms pulling the elements closer together, and without which the organisations risk management would fall apart" (participant no.84). From these statements it appears as though the STORM model, unlike previous models, does have the risk management practitioner actually included in the structure, albeit as an intangible force.

Thus, from the STORM model it becomes apparent that the role of the risk manager is crucial to the conduct of organisational risk management for without the interactions and links between each of the model elements the process of identifying errant organisational issues becomes highly problematic.

Continuing with this theme of intangibility there is the issue of risk communication. This is again an issue or feature that is intangible to the model structure itself yet which appears to be an underlying factor identified by participants as part of the role of the risk manager. Within both the main and verification interviews participants discussed the issues surrounding actual risk management activities ongoing within organisations. One of these activities is the need for constant communication between all of the risk stakeholders; that is the management, workers, regulator and society otherwise the

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context within which the issue is defined is in danger of being skewed away from reality (see sections 5.3.1 and 8.4.1).

Risk communication has been an area of specific research along the same lines as risk analysis and risk perception. Both are subsets of the overall risk management topic, but each has their own specific goals and drivers. Risk communication can be broadly described as the interactive process of exchanging information and opinion on risk, between risk professionals and other interested parties or stakeholders. The methods, systems, styles and understanding of risk communication are areas of study still under much scrutiny and development yet there was little reflection of these fields within the responses from this research.

From the few references within the research interviews it would appear that participants viewed risk communication in a similar light to the role of the risk manager; as an intangible or implicit underlying feature of the model. Comments such as “it is my job to communicate, to debate and to educate the rest of the organisation in all matters relating to our risks” (participant no.52), exemplify the very cursory manner in which participants referred to risk communication.

Hence, since participants seem to view, as they do, risk communication as an intangible and as a task of the risk management professional there is a need for some further understanding in this area. Exactly how do risk managers act within the model? How does risk communication interact with the other model elements? Or, how is risk communication an output or an input of the model? All of these are valid questions deserving of some further in depth research and this will be returned to in the research recommendations.

8.5 STORM potential

The STORM model, developed through the process of the research, was always intended as a practical tool for professional risk managers to approach and gain an understanding of the complexities and interactions which affect their work. This section intends to briefly examine some of the principle successes for the model and also its limitations.

8.5.1 Success and limitations of the model

The STORM model has achieved a great deal of success within its process of formation. The complex nature of the field, as brought to light in the literature, is one that is not easily described within an illustrative model, yet the STORM model manages to capture many of these elements. The results of the pilot and main studies showed necessary advancements to the model structure and interactions and it appears that in its current design it does fulfil the objectives as laid out in section 1.4.2:

- to develop a model that describes the characteristics involved in the implementation of a strategic organisational risk management process
- to ascertain how the various elements of the model interact within organisations to affect the risk management process
- to evolve the model towards a useful tool for risk management professionals.

8.5.1.1. Successes of the model

1. The drawing together of a broad body of literature

The literature of chapter 2 demonstrates the complex range of subjects involved in risk management. The STORM model, founded upon this solid base of literature and existing knowledge, utilises aspects of previously proven methods in order to more fully explain strategic organisational risk management practices.

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2. The emphasis upon non-sector specific research

Previous models have tended to be sector specific and focused as a result on non-transferable issues. The STORM model focuses upon the organisational processes rather those related to the type of work conducted. Thus the model is equally applicable within the health sector as it is the petrochemical.

3. The construction of a series of relationships between internal and external elements showing an open systems approach

The STORM model actively seeks the external contextual element in defining the various interactions of the model. No organisation exists within a vacuum of context and where previous models have neglected this open systems issue this model flourishes because of it.

4. The development of the only current model to focus on the organisational risk practices and the interactions affecting those practices

Previous examinations of the risk management process have created new steps or processes to be followed yet none have modelled the organisational factors affecting those process.

5. The development of the only model to recognise within the risk management process the limitations exerted upon it, both externally and internally

All of the existing frameworks and processes regarding risk management are to an extent 'wish-lists' for an ideal world. In reality all the abilities of the organisational process have limitations and the STORM model actually incorporates these as active elements.

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8.5.1.2. Limitations of the model

1. The complexity of the model

Given that the model is by nature complex, showing multiple interactions within a number of different organisational processes, it is understandable that upon first inspection it appears unwieldy. However, the STORM model is intended for those advanced within risk management, so the limitation of the model may be restricted to those unfamiliar with risk management complexity.

2. The difficulty in replicating the research

The approach taken to the research (see chapter 3) of Grounded Theory and the necessary responsiveness in achieving verification and quality, has resulted in a research process that could be repeated although with a likely shift in results for each iteration. In addition the nature of social inquiry is that no two studies given exactly the same variables, but different sample groups from the same population would actually reach the same conclusions.

3. The lack of case study evidence in the application of the model

Case studies would have undoubtedly added to the veracity of the model by providing further refinement. However, in order that case studies were also non-sector specific to prevent the ingress of sector differences, an unusually high number would need to be included. Additionally the use of case studies is constrained by time, as they are highly time intensive for both the data collection and analysis stages.

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8.6 Summary

This chapter has developed a number of key themes from the research and existing knowledge which provide some issues for risk managers to be aware of, and a number of paradigms for the industry as a whole. In addition there has been a realisation of the success and limitation of the model in the overall research.

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Chapter 9

CONCLUSIONS

9.1 Introduction

This chapter presents the conclusions of the research. It shows that the aim and objectives have been met and reviews the conclusions, both general and specific that can be drawn from the results. There is an appraisal of the generalisability of the findings and the contribution to knowledge is shown. In the light of all of these recommendations are made for future research.

9.2 Reviewing the aim and objectives

In the introduction to this thesis the aims and objectives of the research were stated. Now that the research has been concluded we should revisit these to ensure they have been met.

The research aim

The overall aim of this research was to investigate UK risk management practices, to develop an understanding of the organisational issues involved and provide a structured model of the organisational interactions which affect the implementation of the risk management process at the strategic organisational level.

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The research aim has been achieved through the progress of the various chapters. The literature review provided a number of key elements within UK risk management practices and gave a background to previous research conducted that related to this area. The development of new knowledge in the pilot and main studies has shown the development of understanding of the various issues involved and has continued in this manner to provide a model with which the organisational interactions can be viewed and explained.

The research objectives were to

- review the seminal literature, existing knowledge, current models and industry wide issues in relation to:
 - the various fields which contribute to the concept of risk management
 - the academic background to the study of risk
 - industrial issues regarding risk management.
- develop a model that describes the characteristics involved in the implementation of a strategic organisational risk management process
- ascertain how the various elements of the model interact within organisations to affect the risk management process
- evolve the model towards a useful tool for risk management professionals.

The literature review section set up a comprehensive review of the existing knowledge with regards risk management, the theory involved in the study of risk and a number of industrial issues within the field such as the Turnbull Report and September 11th. Various models were introduced, applicable portions of which were used towards the unified model of risk management now referred to as the STORM model.

The STORM model development took place over the course of the pilot study, model development and the main study chapters. This model describes the interactions involved between both the internal and external organisational issues, such as context, concerns, capability and controls. The research chapters, pilot and main study, were highly focused

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in their objectives of establishing the interactions of the model elements, and these findings fed back into the model development until the final model iteration – found in figure 6.2. This evolution of the model was conducted with the intention of creating a practical tool for risk managers and in this the research and verification studies have proved useful.

9.3 Conclusions from the thesis

A number of conclusions have been drawn from this research and these are summarised below:

- The body of literature and current knowledge is still under developed for risk management – very little research has been completed that can be applied to the broad area of risk management as opposed to particular sectors. Generic research that addresses risk management issues, and not specific hazard issues can add to the risk management understanding of the entire field through isomorphism.
- There is still a mass of confusion of the terminology and understanding of risk within the context of disaster, crisis, emergency and safety – it is suggested that the best way forward is to refer to all of these variations as sub-divisions of the risk concept. By following this structure risk management professionals can work more holistically addressing each subset as a change of context but not of process.
- To date little academic research has been undertaken into the concept of strategic organisational risk management – each industry has undertaken research into hazard or community specific topics, yet the commonalities in process and desired outcome could be interrelated to provide more valuable learning. The concept of strategic as opposed to sector specific risk management still needs a greater level of research based upon this approach.

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- Very few academic research studies exist at this time to explain the impact of current events and changes within the industry – industrial drivers such as the Turnbull report or the effects of September 11th, were expected to have a monumental impact and the result has been quite the opposite. There are still too few studies examining what is driving forward best practice in UK risk management.
- Risk management professionals lack models to illustrate organisational risk management – whilst a number of tools exist which assist in the categorisation of hazards, the understanding of the effects of hazard impacts or of potential losses based on current action, until now there has been no holistic model capable of examining an organisation strategic level approach to risk management practice.
- When examining risk management issues sector differences do not interfere with the process – previous research and practice has, in general, distanced sectors rather than brought common interests, such as risk management, closer together. However this research clearly indicates that strategic risk management issues transcend sector differences and as such the STORM model and its concepts are applicable across the breadth of industry sectors.
- Internal organisational issues remain highly complex and their interrelationships must be appreciated by the risk manager – the interactions, relationships and sheer depth of complexity involved in strategic risk management appears to demonstrate the sizeable task facing risk management professionals. However, with an appreciation of these factors the practitioner can begin to unravel and address these organisational issues and seek to improve strategic risk management practice.
- Organisational senior management are still having difficulty understanding the concept of risk management as a social construct and as a continuing process – with

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the difficulty in understanding and separating terminology there is still a management focus upon hazard and not risk. In addition senior management appear to be having continued difficulty in understanding the ongoing nature of risk management as a long term undertaking and not a short term goal.

- Organisational policy can be a highly destructive force in the risk management process – with an apparent mismatch between organisation policy and actual activity it would seem that poorly constructed organisational policy, not reflective of organisational capability carries with it the potential for developing a subverted culture of risk taking that is in direct conflict with actual organisational goals.
- Informal risk management processes are not ineffective, but they are different from more formal approaches – the informal approach, assumed initially to be inferior to a formalised approach, appears to engender a greater ownership of risk management throughout organisations. In addition the informal approach appears capable of developing a greater understanding of risk within different levels of organisations, which may be a much more demanding task within the formalised approach.
- There is still a dangerous reliance of senior management upon an output rather than the process with regards risk management – constant anecdotal evidence in the field and research such as this project continues to highlight the dependence senior management seem to have upon a physical output, such as a plan or report, rather than the continued process of organisational learning which true risk management embodies.
- There is a continuing lack of expertise in the field. Those that do exist are in high demand and is still of dubious quality – a majority of participants are concerned that the profession still does not train, educate or retain enough skilled practitioners. With a number of professional bodies now becoming more highly recognised, and

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becoming involved in the certification and accreditation of training, it is expected that the levels of expertise in the profession should improve. However only further research in future years will begin to show if this holds true.

- In UK business the impact of context, external to the organisation, must be considered vital by the risk manager and senior management – it has been indicated throughout the research that contextual understanding is crucial in approach risk management at a strategic level. Only by addressing the circumstance surrounding the organisation can a risk manager begin to define the risk problem and the situation upon which it is based.
- Organisations still appear to normalise their own operating risks without paying heed to past examples of errant risk behaviour – whilst there are many examples of the normalisation of risk leading to an underappreciated comprehension of actual risks being faced by an organisation there still appears to be a tendency for practitioners to normalise their own level of organisational risk. This lack of appreciation for historical failures is a worrying trend in risk management behaviour.
- Finally, risk managers must continue to seek senior organisational champions to further risk management practices, but realise that the ownership must exist at the very bottom of each organisation – risk management is a process and an undertaking which should exist throughout an organisation, at every level. In order to achieve this organisational champions are vital in showing leadership and giving the process strategic credibility. However, it is the operational level which faces organisational risk management on a constant basis and this level must also ‘own’ the risk management process in order for the organisation to address its risk management practice.

9.4 Generalisability of the findings

The importance of the ability to relate the research back to the risk management industry as a whole is vital. There are so few academic studies surrounding risk management issues and of those few many are sector specific. While the research here has alluded to the fact that no two organisations follow the same risk path, the development of a model that can be applied to all organisations regardless of sector is a much needed improvement.

Whilst the model, and the supporting research, is useful to risk management professionals it must be emphasised that this is not a general management approach, model or tool. This research is quite specific to the risk management industry as it develops key issues for the practice of their art.

A key attribute of generalisability is the use of a large enough sample to implicate the entire population as holding the same beliefs and being affected in the same ways as the research suggests. In order to do this, however, there must be a realisation of the population size and a worthy note of caution here is that we simply do not know how many risk managers there are. We do know that it is a relatively young field of study, with a low quantity of supporting research at the present time, although many approaches of risk management are related to the connected fields of disaster and emergency management. However, this does not indicate a total population and as such generalisability will remain a somewhat obscure concept until this can be ascertained.

9.5 Contribution to knowledge

The academic contribution to knowledge made by this thesis has been to investigate current UK risk management practices and the concepts which support them. It has also been to develop a model that describes the characteristics involved in the implementation of an organisational risk management process.

There are a number of key attributes of this contribution to knowledge. Firstly this research makes a significant contribution to theoretical knowledge through the substantial review of the concepts surrounding risk. This is enhanced by a thorough review of the practitioner field and a realisation of the impacts of industrial drivers and contemporary events.

Secondly this study makes a considerable contribution to knowledge in the generation of the STORM model for organisational risk management. This model is unique in a number of ways. It is non-sector specific – a key factor which no other risk management model has managed to achieve. The model provides a clear understanding of the complex interactions at work internally to the organisation, but also the importance of the contextual system to the implementation of any risk management process.

Finally this study has contributed to a more detailed understanding of the role of risk management within organisations, its importance and the complex series of relationships between the risk manager and the levels and functions of the organisation.

9.6 Recommendations

In many ways the findings through the research provide more of a starting point than a conclusion. This is especially true in the case of this research as it was exploratory in nature and there remain a number of topics that deserve recognition in future research.

- The first and most obvious future research recommendation would be that of further study and development of the STORM model:
 - Further research should focus upon the implementation of the model within a case study research environment. This would allow for a greater depth of study within individual organisations and provide a penetrating understanding to the processes on going with the organisations selected.
 - Additionally research should focus on simplifying the model, both visually and in structural terms.
 - Further research should include some of the more intangible qualities that have been implicitly suggested through this research but not overtly examined. These include;
 - risk behaviour – risk taking or risk averse and the impact upon strategic organisational risk management,
 - role of the risk manager – how does the individual impact upon the use, implementation or interactions of the STORM model?
- Research must continue to introduce new elements and contexts to the model and our understanding of the organisational risk management process. The field is rapidly developing and further research should allow for these newly arriving contextual factors.
- It may prove an interesting topic to examine the elements within the STORM model more closely and individually. Most notable in this would be the ‘critical balances’ element which acts a central series of checks and balances or imbalances to the organisational risk management process.

Chapter 9: Conclusions

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Appendix A

PARTICIPANTS BY SECTOR

Sector	Participants by number	Total
Financial	13, 19, 35, 42, 48, 52, 55, 61, 65, 74, 85, 88, 90,	13
Manufacturing	12, 28, 31, 40, 58, 77, 89,	7
Professional Services	9, 17, 30, 33, 39, 51, 64, 68, 92	9
Retail	3, 15, 26, 28, 36, 41, 54, 70, 72, 84,	10
Transport	4, 10, 11, 27, 50, 63, 73, 79,	8
Petrochemical	2, 5, 38, 43, 49, 53, 59, 81, 83,	9
Power	7, 8, 14, 34, 37, 62, 69, 78, 82, 86,	10
Telecoms	5, 18, 32, 38, 45, 56, 67, 71, 87, 91,	10
Construction & Engineering	1, 6, 16, 23, 29, 46, 66, 75,	8
Health	14, 20, 24, 25, 44, 60, 76, 80,	8

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Appendix B

SAMPLE MAIN STUDY TRANSCRIPT

Date: 28/03/2000

Time: 14:30

Location: Participant office, central London

Participant number: 51

Following an introduction, a brief preamble and general discussion the tape-recorder is switched on.

Researcher: Thanks for seeing me I realise that your time is in demand. I'll try to keep this as short as it can be. If we start out by you telling me a little about what you do here, what your position is within [the organisation].

Participant no.51: Well... my title is Business Continuity Manager for [company] worldwide. But in practice I do take on a lot more than BCM... Because I have access to the board, and my background in consultancy I get asked to sit in on all manner of risk related issues. I guess you'd describe me more as an internal consultant...not attached to a department either. I work directly for the board.

Researcher: Could you tell me about an average day for you? What goes on here... what do you do... how does it all work?

Participant no.51: ha... you don't know [company] very well... I don't think we have any average days. Certainly I don't. Because we're only a small team we're always on catch-up with the rest of the company. So some of us will always be away, just the way it is, and some will be at different offices. I'm usually here or at [head office]. I'll take a look at what the rest of my team are up to and see if they need any help... probably won't. Then I'd... you know this is really a tough question because I don't think I can describe what I do on a daily basis, always changes... keeps me entertained anyway.

Researcher: Okay... Could you tell me about the approach to risk management within [company]?

Participant no.51: By approach do you mean the attitudes, or the policy or....

Researcher: Well if we start with the attitudes towards risk management.

Participant no.51: Right... that's a pretty big question. Okay... right... Let's separate a few things to make this easier. Firstly the board level attitude. I have to say it's excellent, very interested in it, quite aware of the impact of it, especially when it comes to BCM. They're actually interested in it which is a new experience for me. Past companies I've worked for haven't been nearly as animated on the subject as this lot. It's a benefit to me in some ways cause I get a lot of interest and support, in others it's a bit of pain as they're

always asking for updates, but it comes with it I guess. Okay so that's the senior level. The departments aren't quite as interested. Don't get me wrong, they go through with everything we do, but they recognise it's only a tiny part of the overall company operations. Actually that's being a bit unfair. They're very supportive... giving us time and access, so yeah they have a good attitude for us. The employees as a group are really encouraging... I think things have changed a lot though, even in the time I've been here. Instead of being told how to do things, we now ask them what they need... it makes such a difference. And the access to the board means we can get them results quicker than going through the normal hierarchy... that has meant a bit more work though as we seem to act as go-betweens some of the time... relaying messages back and forth.

Researcher: Could you tell me about the risk management processes of the organisation?

Participant no.51: Just BCM? Or the whole risk management strategy?

Researcher: The overall organisational strategy. If BCM is important to that then yes, that too.

Participant no.51: Okay... well the process could be kick started a number of ways. In the past that was different. It was all about reaction and recovery before, now we try to plan ahead... but, right... okay. It could start with an incident which we have to react to and in that case we have a specific set of procedures for dealing with most things... or we might spot a problem developing beforehand... that was certainly true a little while ago when the demonstrations were planned in London. We told staff to take the day off rather than come into London. We couldn't ask them all to home-work because our systems wouldn't stand up to it but at least we could stop the major hassle for the business by just declaring a London company holiday and letting the other offices take some of the strain... so that's how it could start... although if we are talking process, then I guess we also have to talk about long term right?

Researcher: That's up to you. Just tell me what you see as the risk management processes.

Participant no.51: Risk management processes... it's all about access to the information and board. I have to collate the information regarding our risks, give them a priority and take them to the board. When I'm there I'll have to act as their filter for that information. We'll go through the same process I will have been through... and I'll generally be able to lead towards the most important issue... then they can agree that it should be my priority and I'll get on with it.

Researcher: Okay then. Perhaps now would be a good time for me to ask a few questions?

Participant no.51: Ah right, okay then... fire away.

Researcher: Right. Just take your time and consider your answer. Have there been events in the field of risk management or from organisations external to yours that have affected your organisation and its practices? What were they and what effect did they have? Would you like me to repeat any of that for you?

Participant no.51: um, no, let's tackle it in stages though. Events... well... no not really. I've attended quite a few conferences but they haven't changed much about us... or how we do things for that matter. But, organisations external to ours... does that include customers?

Researcher: Yes it could include customers.

Participant no.51: Well they've had a number of changes for us to implement, none of them anything major. We've brought our reporting in line with their schedules. So now, we'll provide them with more information....Nothing else springs to mind though, we're pretty good at it all I think... so there's not a lot out there that changes what we do already.

Researcher: Okay perhaps then I should ask the next question? What effect, if any, have events such as the Turnbull Report or September 11th had upon your organisation and its practices?

Participant no.51: okay I see what you were getting at now... right I should tackle these in order because they are quite different to us... Turnbull, well I wasn't here when it came in but I can say what effect it has now, and it's not much. We were hoping that Turnbull had actually turned a corner for risk management, and that this time companies would actually be give some help... guidance for how to do it, instead of just what should be reported... but it was just that it didn't do any of that... It's been reduced to a statement as part of the reporting, but nothing more than that. It's not important though. We're in advance of Turnbull and we're looking forward to Basel II as we'll be in advance of that too. Does that make sense to you so far?

Researcher: Yes, I'm with you so far. Sorry if I'm not being very responsive, but if there's an issue I need clarification over I will ask.

Participant no.51: Okay, fair enough. Well, let's tackle 9:11 then...that did have an impact on us... I suppose it did on everyone really... We completely restructured our risk management and business continuity plans after 9:11. Everything came in-house. We've now got our own dedicated recovery site. The budget came up too. We examined our sites from the perspective of possible denial of access. We realised that if anything happened in central London we might be in serious trouble. So now we've got our offices far more dispersed in operational terms and our staff have really reacted well to the changes. They're far more into it [risk management] than before. So yeah that had a tremendous impact. But overall very positive for us. So you've got a number of questions you'd like to get through, and I'm conscious of time.. so why don't we just run through those and see how it goes?

Researcher: Well, if that's what you'd prefer then we can do that.

Participant no.51: I think it would better satisfy both our needs if we did that... if I think there's more to an answer then I'll keep going... you might have to stop me at times.

Researcher: Okay. So let's move on then. Could you explain the demands placed upon your organisational practices by external agencies such as the regulator, the government or wider society?

Participant no.51: Well the regulator first off... They don't really place a lot of pressure upon us. Mostly because we exceed their requirements, and even then it's not as if the requirements are very detailed....The government... well that's really an extension of the regulator to us. But they don't have a direct upon us here. Society? Well we're not a public service provider, we deal direct with the major [company specific] so I don't think the public would even know who we are...

Researcher: so... How would you describe the approach of senior management, middle management and the rest of the workforce towards risk management?

Participant no.51: the approach of senior management is very positive, actually it is right through the company. As a consultant I tended to find organisations being geared towards the report, the plan, the physical document and they neglected the learning of the process. But here it's quite the opposite. The entire purpose is about improving what we do, and that takes involvement and learning... so they have to be committed and I always get the support I need, so I get the feeling they are that committed. Is that helpful at all?

Researcher: Yes, thanks. If we could just stick to each question then, I don't want to take up too much of your time. Could you explain how you think the different levels of the organisation act with regards the organisations approach to risk management?

Participant no.51: I'm not sure I can answer that in anyway differently to your previous question... the whole organisation is really supportive. No, there isn't anything else I can add really.

Researcher: Okay. How would you describe the efforts within your company to organise the risk management process?

Participant no.51: Well, as I've said we have a number of processes and systems set up, and everyone supports them... as for organising it well we have the management reporting system, which means that none of the systems are neglected. And then we have regular review meetings to check that things are moving as they should be. I can't think of any other...

Researcher: Could you explain to what extent the risk management process is affected by your reputation, or does your reputation affect how you manage risk?

Participant no.51: Reputation.. that's a real power here. It's a selling point for us now. We are recognised as a leader in risk management practices and as a result it gets harder not easier. We have to be more proactive in our risk identification and remediation strategies. We have to collate all our information and really study what we could do better. That way we can keep improving what we do. And that reflects in our reputation.

Researcher: Okay.. How do you feel about the abilities and skills available within your organisation to address risk management?

Participant no.51: Well.. as I've said we're pretty good overall but we still have difficulty when it comes to skills. I've come from consultancy where I had to deal with a of other companies.. so I do realise the problems, and there simply aren't enough competent staff out there and I have to say I don't have a lot of confidence in the training course available.. they're not for us anyway. So we train in-house.. it works for us that way..

Researcher: How well do you feel that the risk management process of the organisation is stable, standardised, repeatable, measured or evolving?

Participant no.51: Oh we're definitely evolving when it comes to risk management. Because I've access into the board every decision that is made gets circulated really quickly. We've got to... we sell ourselves on our abilities and being a leader in risk management, so we have to maintain that. Ultimately we want to prevent incidents. It's not always possible but it is what we're aiming for. Right, what were the other terms you used, huh... standardised...Yes. Across the company we have standard practices and if they're not met we will know about it... eventually. But that's not really the point. The idea is that our staff are prepared because we've trained them and they work towards risk management not because we tell them to, but because it's part of what we do. Everything

they do on a daily basis can reflect on the company overall... so they have to be aware of our risk management processes, because they embody them everyday.

Researcher: How do you go about recording that process of change of risk management practice? You've described [company name] as evolving in terms of risk management... how do you record that, or show that evolution?

Participant no.51: How do we record it? You mean in meetings.... Or in our decisions.... Sorry I'm not really following your reference there...

Researcher: Let me try that a slightly different way. How can you show the evolution of your risk management practices? Where can you measure what you used to do up against what you do now?

Participant no.51: Ah... I think I see what you're getting at now. How can we show that development of our systems and practices? Okay... well essentially the changes have been based around our processes, the way we actually conduct our operations. So first of all you could examine our policies towards risk management activities. They have structurally changed over the course of the last few years, so you can physically see that change. As for the evolution of our practices, on a day to day basis... well I'd say that that is almost invisible and very difficult to actually see or record. It's been a very long term process and it's still changing. And it's not just happened over night... it's been a long hard route to get to where we are now and I'd find it very difficult to show that progression in other way to you than just telling you about it now. I suppose you could speak to the staff and see what their views on it would be and see how they've seen it change. But we don't have some repository of documents which we can measure ourselves against as we change. It took me a little while to get there didn't it? Does that answer your question?

Researcher: Yes that was the kind of answer I was looking for – how could you measure what you do now up against what you used to do and show that evolution you spoke about earlier.

Participant no.51: We can't... It's that simple. I can talk it up and tell you about the process but no... ultimately I can't show you the development. It's not been a managed process like that. I mean we have managed the change. You know... we did decide to improve how we deal with risk management issues... we just didn't approach it the way you indicate there, like a project with measures that can be valued and compared.

Researcher: I'm not trying to say that's what you should do... I'm really just trying to ascertain what you did do? Thanks, your explanation helps clear it up in my mind. Hopefully it'll still be clear to me when I have to listen to the interview again. Okay, on to another question. How easy has it been to access capable risk management experienced personnel internally or externally? And to what extent has this been an issue for you?

Participant no.51: Right... first off, it has not been easy at all to get the right personnel, experienced or otherwise. We have a very long drawn out process of getting in new members of staff and accessing these types of skills have been a real problem for me. It's easy enough for me to get existing staff to help out or even to take on some of the duties of overall risk management but they're not necessarily skilled at it, or in some cases even really understand the whys and wherefores of the way we do things. So it's much more like having a team of assistants who I can give guidance too, but need me to actually tell

them what needs doing first. So, your phrasing was what exactly? Capable risk management experience?

Researcher: Yes, my question was. How easy has it been to access capable risk management experienced personnel internally or externally? And to what extent has this been an issue for you?

Participant no.51: Okay then. It has not been easy at all. Because I need staff to work in my team, separate to any department or other function of the organisation it means I need a whole range of skills, not just one type... I don't just need someone from finance or operations, they need to have some understanding of it all. Which is not easy to find. Plus they need to be relatively junior. We're not looking for a department full of managers at the end of the day. But how do you find people who have some training or capability in risk management that will work in junior positions? Simple answer is – you won't. The market is in such high demand that anybody with training or experience is instantly earning more than they could earn in a department like mine. Or they're a consultant, which means the same thing really. In answer to the second part of your question... you said to what extent right? Well... it's been a fairly major problem really. We as a company are doing pretty well in terms of our overall approach to risk management. But obviously there needs to be staff dedicated to it to really drive it forward ... and yes getting that staff is a real difficulty, one I have to face almost daily. There just aren't enough novices to be apprentices... not the best way to describe it, but I hope you see what I mean. We need graduates willing to do some more learning and who don't get tempted away by higher earning jobs... but then I guess that says more about the jobs market than it does about us doesn't it?

Researcher: Yes I suppose it does. Thanks, that was a really interesting answer. If we could move on again now? Could you describe the risk management process used by your organisation from the strategic level?

Participant no.51: From the strategic level? So from the senior management making strategic decisions about risk management to how it affects the overall company right? Well I think we've mostly covered this ground already haven't we? Although perhaps not as an explicit process of steps and decisions... Okay then... well we start at the board level, usually by me tabling a series of decisions that need to be made about what we need to address, risk wise. I'll usually present them with a set of decisions that need to be made regarding what risks or issues we face that can be remedied and what it'll take to do that. I'll provide them with as much information as I can about costs and likelihoods and all of that... and to be honest I already know what they'll decide as I can tailor my work to support that. The side effect of that is that they'll make a registered decision about what is going to be tackled and what isn't... and then it's not my problem if something goes wrong because it was a management decision, and not mine. Plus they'll decide on budget availability and that will usually be based on my assessment, so we have the opportunity to actually get some decent budget support out of those meetings. From there I will get my team working on the priorities set by the management and we'll delegate as much out to the departments as possible with us acting as the central support function. After that I can report to the board that the process is underway and at the next board meeting I will usually show some status reports of current progress, but that all depends on how the process is going within each department. That kind of information can take

quite a while to make it back into the chain of information. I know that was a bit long winded but that's the best way I can describe it all. It's a relatively informal process. I have a lot of control over how things are presented to the board and hence what decision are actually taken. Do have many more questions? I think my secretary is getting anxious for my time... I'm supposed to be seeing some of the board later on today.

Researcher: No, not many questions to go. Only one more in fact. If it's okay to continue shall we just get this one out of the way?

Participant no.51: Yes, by all means.

Researcher: Great. Okay so here it is. To what extent do you feel that the organisational risk management process within your organisation is affected by the issues we have already discussed? By that I really mean to try and tap some of the key factors that you think are affecting your organisations processes... what are factors do you see as the most important?

Participant no.51: I think we've gone over a lot of what I think is affecting the way we do business here. If I had to narrow it down to the single major influence on how we do things it would have to be market forces. We can improve what we do, and appear to be improving in the marketplace... it makes us more sell-able and hence it gets more praise from the management. Above all I think that's been the greatest pressure for us. But I think really that is it. I'm sorry I can't give you more than that. I do see that your question could get me to talk on for another hour if you let me, but I really have to call it a day now. Is there anything else that I can add for you?

Researcher: No, that really was the last question. It was designed to give you an opportunity to tell me what you think is influencing the way you conduct risk management. So if you feel you have done that, and there is nothing else that you would like to add then the interview will be complete. I would just say once more though that if there is anything else you wish to add, change about you've already said or clarify something then now is the time to do so.

Participant no.51: Right... no, I'm happy with that. I really hope I've been of some use and that my thoughts can be useful to you. We're not really a very interesting company. All we do is [company specific] and most people have never even heard of us. But that's what we like. Our customers know us and that's all that matters. If you need anything else from me please do get in touch and let me know how the PhD goes.

TAPE RECORDING ENDS

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Appendix C

EXCERPTS FROM MAIN STUDY DATA

In addition to those quotes provided within the thesis proper and as part of the data analysis (see section 6.3 onwards) the following quotes are provided for further substantiation of the coding structures and the responses from the sample group. Whilst the totality of the quotes throughout the project within each code would be massively burdensome to a thesis publication, requiring another book just to accommodate them all, what follows are samples from each code, with the aim of providing some additional depth of data to the reader.

Context

Participant no.58: [The company name] have found that it's never the regulator which makes us change. It's always change from within. Then all the regulator has to do is agree that it's good enough.

Participant no.30: Environmental pressure groups have a lot to answer for. They make great publicity but the result is usually a biased view against us... but we generally try to placate societal pressure upon us. Doesn't necessarily change our risk management practice but it certainly affects our decision making and planning.

Participant no.29: In terms of management it's only recently become an issue for the board... this change has only come about because of the profile that risk management has gained in recent years. It's become an industry buzzword, without that I doubt my team would be here today.

Participant no.63: To talk about Turnbull as if it's had some great effect upon the industry is just wrong. It's a paper-tiger... causes lot's of reporting and the directors think they've done a good job but it's not improved what we do. If anything it's allowed us [the company] to rest easy thinking we've done all that has been asked of us. Reality is that nothing has changed.

Participant no.42: We have to look at the world in which we sit before we can start to look at our organisation... and only after all of that can we really begin to look at problems that we face. More often than not the board can adapt our actions to actually minimise risk from the outset, but to do that we have to have this strategic view of what we do as a company.

Participant no.32: We have constant contact from the [regulator] with new guidelines, best practices or recommended methods... but none, and I mean none have proved of any use to us. They arrive every week and they are never followed up. In fact every conference I go to [the regulator] say how they will only act if companies are in flagrant breach of the principles... so we don't take any notice any more.

Participant no.73: The [regulator] has a lot of power over our working practices, but we do have a very good relationship with them. There haven't been any instances when changes have been made that we haven't consulted on.

Participant no.45: The government have not helped the situation. They talk it all up but they've been dawdling in the creation of national standards which would proscribe levels of competency needed, and they can't agree on basic legislation to drive forward practice. The stuff they do agree on is already behind best practice so it's not worth anything to us.

Participant no.82: We started a big CSR (corporate social responsibility) programme recently. Part of that has been to show our risk management practices off. To show that actually we're pretty good at all this. I'm fortunate because the company haven't used it as a sales tool, but as a way of showing how we react to current demands by exceeding regulation and guidelines.

Participant no.75: As an organisation the biggest worry we have is what the Government is going to tell the regulator to worry about next. First it was [company specific], then [company specific]... it all just depends on what the politics of the time are. We've been lucky that through all of that [what has happened so far] we've been ahead of the game.

Participant no.24: The Government always has agenda when it comes to business and that agenda never appears to be helping us. We're constantly under at the most senior level to either increase our international business, decrease our international business, generate more jobs... the list goes on. I don't think we [the board] even pass those priorities into the organisation any more, they've become irrelevant.

Participant no.80: Labour have not helped us conduct business... if anything they've created more hoops for us to jump through. As regards risk management, since that's what we're talking about, the only useful thing they've done is not to force us into a way of doing it. There's the [UK risk management] standard underway and that will be useful as long as they [Government] don't use it as a blunt tool with which to beat us.

Participant no.27: 9:11 had an immediate impact upon us. But just as soon as it happened it was gone again... I mean from our perspective. We adapted in the short term, but returned to the same environment within a few days. It didn't have this tremendous change of consciousness that everyone talked about "a new world"... it simply didn't happen. Perhaps it changed for society but not for businesses like us.

Participant no.36: We've been working really closely with the end consumers recently and they've fed back into the system a lot of useful information... their alarm at rising costs, their anxiety at a couple of problems we've faced as an industry, but I don't think we've changed what we do as a result. I could be wrong but our risk practices are driven by us and perhaps our objectives [between society and organisation] clash at times but the way we do it remains the same.

Participant no.53: Everything we do is closely monitored because what we do can have a direct impact upon public health. So I think we feel the pressure upon us on a daily

basis. If something happens completely unrelated to us there is every chance we'll cop some of the flak... but that's the nature of it. We just have to realise that this is our operating environment, and we have to be responsive to that.

Participant no.38: The public places such a lot of responsibility on us and they feel aggrieved if we don't fulfil our promises to them. Having said that I don't think we change the way we do business because of that, perhaps it's just being aware of that responsibility that matters?

Participant no.33: Of all of the influences outside of the organisation I think we feel the impact of the government most of all. Their stance dictates how we can do business... and if they change the economics of what we do, interest rates for instance, then our risk can be increased or decreased accordingly... we have to respond to that.

Participant no.51: We completely restructured our risk management and business continuity plans after 9:11. Everything came in-house. We've now got our own dedicated recovery site... we've got our offices far more dispersed in operational terms and our staff have really reacted well to the changes. They're far more into it [risk management] than before.

Participant no.69: It was only in the aftermath of New York that our board realised the kinds of things we'd been told by [the business continuity manager] for months. We gave him a lot more support after that – financial and access to the board.

Participant no.28: I [as a director] was asked to oversee it [risk management] personally and I've learnt so much. Not only that but since September 11th our budget for risk management has increased dramatically, although that seems to have slipped in the last year or so.

Participant no.43: There was a lot of talk about moving offices out of London, or having a lot more home-working to minimise risk to staff, but after the initial flurry of chat there wasn't anything done about it. We've still got the same problems and the same lack of interest in solving them.

Participant no.57: I've been through three companies in the last three years and not once has anyone asked about September 11th. I'd like to think we as an industry, the risk management industry, have improved as a result but if we're still not getting assistance from the board to get things done then how can we say anything has changed?

Participant no.26: If I was speaking to you as a member of the board of directors I would have to say things like 'we are very mindful of the Turnbull Report and use it's guidance throughout our risk management practice', but I'm not. As a risk management professional I'd have to say the Turnbull Report means next to nothing to us. We use it in the business reports because we have to but we don't use it at all.

Participant no.34: Turnbull, Cadbury [previous financial guidance], Basel ii [further financial guidelines] have all changed the procedures we have to complete to show risk management. But that doesn't mean they've actually changed risk management practice... far from it. We do the same things we just report them in different ways.

Participant no.56: I would say none, no effect at all. We wobbled and wavered a bit at the time [September 11th] but nothing changed.

Participant no.77: Turnbull made our financial director think he was suddenly going to get more say in how we run things, because it was after all financial guidelines. But it hasn't meant any change to our operations or our planning.

Participant no.74: There wasn't a lot we could've done... if it [September 11th] had happened here there's no doubt we would have been up sh*t creek. But we haven't changed as a result. Far from it. I think because it didn't happen here we haven't changed.

Participant no.40: Of any of the changes we have made to our [risk management] practices in the three years since 9:11 or I suppose the four years since Turnbull was published I'd say they've only really made us think a bit more widely about risk... not any great sea change of thinking, just a little wider.

Participant no.49: Right, well I guess there's only two ways to describe how Turnbull changed our organisation and those would be – not a jot, or not as much as a dung beetle notices change in a lion's diet. The change might be there somewhere, but you'd have to dig through a lot of sh*t to find it.

Participant no.68: September the 11th was a mental time for us, we sent everyone home, took the next few days off... but after that week it was back to business just as bl**dy normal, we all just used Eurostar a bit more than Easyjet to get around.

Participant no.35: No, we missed an opportunity with 9:11. We could've accessed the board so much more easily and perhaps then we could have changed something. But now people here are hardened to it. Without planes crashing into buildings in front of you it somehow loses the sense of urgency.

Concerns

Participant no.25: There is a real language problem between senior management and the rest of the company. They talk about risk as some strange thing that doesn't affect them... but the rest of us know that we have to deal with all the problems everyday... and mostly they [the board] don't want to know about it. How do we report something that they don't even acknowledge as a problem?

Participant no.35: The greatest challenge we face here is apathy and commitment. Don't get me wrong the staff do their job but they don't see the point in taking the time for risk management activities. So there's this disparity between the management levels. Senior buy-in against staff disinterest.

Participant no.43: We have set policies and guidelines to follow industry practice. But we have people working here who've done the same job for 20 years. They know what they can and can't do better than us on the board. If they can speed up the production by not following an unhelpful procedure... well as long as we don't know about it then that's fine with us.

Participant no.66: Since I've been here I've seen more damaging practices actively pursued by the employees than anywhere else. And it's all about 'working the system'. They think if they can sidestep our policies they'll be able to improve what we do. It's part of my job to try and show that what they are really doing is setting up potential for serious mistakes.

Participant no.23: The execs [executives] don't have a clue about risk management. The problem is not that they don't have a clue, it's that they think they do. As a result they

make commandments that change our procedures and our risk controls which are just plain wrong most of the time.

Participant no.39: It's all about awareness. I spend most of my day educating staff and management about the risks we face. And they accept it, most of the time. It's not difficult to understand, it just takes some appreciation of the bigger picture and the risks we have imposed upon us as a result.

Participant no.67: [The company name] has been in this business for over sixty years. I don't think the views of the board have changed since it started. They fight for continuing the *status quo* in the blind faith that if they ignore the risk long enough it might go away. We try to operate [the risk management process] without their input.

Participant no.28: Really, our greatest challenge, in the whole company, is make people realise that we [the risk management team] even exist. I guess because we don't sit in another department, like finance or operations people see us as the outsiders trying to get them to change what they do and they don't like that. More often than not we have to return to teams every few months because they'll just ignore what we said and do everything the old way all over again. It's frustrating.

Participant no.41: What's difficult to manage is the step between the board and the department heads. I can advise the board [on risk management practices] but it all comes down to how the departments interpret, or act on those policies. It's no good having this great declaration from the senior management in support of risk management, if all the departments are just going to ignore it anyway.

Participant no.48: Look, the company has been bought up and merged so many times we have an entire subversion culture going on. If we say one thing, most of the rest of the company will just do another to spite us. And there's not a lot we can do about that.

Participant no.29: I've found two important champions within the organisation. If I can get both to 'buy-in' to the idea of risk management as an organisational practice then it's pretty much in the bag. First I need the senior management onboard, they have to agree it all and give the project backing, but then to actually succeed it needs the support of the office, the receptionists, the IT guys, all people who keep the [company name] running. It's these guys that can actually change the way we do things from the bottom up.

Participant no.32: My greatest concern is the lack of communication between departments. If they don't know what the other is up to until it's annual report time then how can they try to minimise our risk? They can't. But my job isn't communication... it's risk management... what can I do about it?

Participant no.79: Because I've worked in each of the divisions of the organisation they all know me now... so when I tell them that we could improve by changing a few things, keep senior management happy and as a result get more influence in the bigger decisions they help... It's not about risk management at that stage, it's people management... it just happens that the project is risk management.

Participant no.74: Awareness building is what the staff need. They need to just be aware of the various problems we face. Then it becomes the responsibility of all the staff to manage risk, and not just our team.

Participant no.64: You've got to get [company name] in perspective. It's huge. A half dozen capital city headquarters... three large offices in London alone... we're talking a lot of people. So I can make structural changes to the way we work... or the way we say

we work if you see the difference? But I have to create little pockets of support in each office to actually do it. It's these employees who actually are the organisations risk managers... the senior management just write policy.

Participant no.60: There seems to be a need for the board to avoid discussing risk. They seem to think that if they don't make a decision about it it will just go away... and all this happens while those managing the departments have to deal with risk everyday, it's not our job to take these decisions, it's theirs.

Participant no.37: We [the board] have to set the tone for the organisation. So our approach has been very much as guides for the rest of our individual departments, showing them the methodologies we intend to use, instilling an attitude towards risk management in line with our policy.

Participant no.44: I don't think our employees really think about risk management as a concept at all. There are the working tasks that need to be performed and then there are the procedures we use to fulfil them. We [senior management] know that these are to do with managing our risks, but they [employees] just get on and do them. It's a senior management role to have an approach to risk management as you put it... rest of the company just has to follow it.

Participant no.31: The approach is simple... for all of us actually. We wait for the policy to be written then develop our approach to risk management ignoring it... I'm being flippant of course, but the sentiment is true enough. Departments know best how to approach their own risk management issues, and it's them that have to actually do it. So as long as we tick the right boxes for the board, we let them think it's all their idea, and we can actually do the real work.

Participant no.59: The risk management policy of the organisation is a statement written for the benefit of public relations. The approach from the staff is supposed to reflect that statement but the reality is that they know the risks from day to day experience and there are usually far better ways of dealing with them than have been stated or reported by [senior manager].

Participant no.46: Although I sit on the board I can't just arrive in a department and tell them [middle management and line workers] what to do. We [the board] make policy but we don't interpret it, or have to work with it. So the only way to actually do what we say we do is to affect the way middle management approaches risk management. Get them to take ownership of the process, and the policy becomes second nature. If they oppose it, either in word or deed, then we have to address it as a far more serious issue.

Participant no.70: The different levels have different goals, that's what it comes down to. We'd [senior management] like it if we all had the same goals... to see the company flourish... We have to write policy to show our commitment to risk management. If the goals between us and the rest of the organisation levels differ then those policies aren't going to matter anyway.

Participant no.78: The organisation's approach to risk management is essentially a written statement from the senior management, to the effect that we believe in thorough risk management, minimising risk to our... blah blah... But it's a real document set by the board. If what you're asking is how is that different to what the different levels are actually doing... well that's different. I think you'd actually find that the policy is not a

reflection of our actions, but that it exists as our public face of risk management... whether it's real or not.

Participant no.26: If senior management is risk aware, or at least familiar with the term, then it is quite easy to get on with it. At least then we have senior support.

Participant no.56: At least half of my time is spent on developing the staff's understanding of risk and what it means to us. It's not a concept they are familiar with.

Controls

Participant no.37: We have set policies which lay out exactly who within the organisation has to agree for certain actions to be taken. So only two senior managers of level 2 can decide to sign off on a certain course of action as opposed to a normal signatory of a level 4 worker for an everyday task. This is intended to prevent risk taking beyond the bounds of any individual responsibility. But since everyone is so busy, they all co-sign documents anyway, rarely checking what they are actually agreeing to.

Participant no.52: There are regulatory guidelines stating what we should be trying to do... but not how we do it. So we've set our own policies in place giving strict control to the senior managers. It means that each decision can be traced to individuals and decisions which gives us accountability.

Participant no.24: Our reputation rests upon our risk management history. And since that's what we trade on then we have to ensure our risk management practice is as tightly controlled as possible.

Participant no.30: When we started to examine the potential problems we faced at a company level it became clear to the senior management that our reputation was one thing we could not afford to lose. So above all else our systems have been improved to sow that if anything does go wrong out of our control that we did the best to prevent it and that we can respond in the fastest possible way.

Participant no.72: The crisis management team convenes within an hour of an incident during the working day, it will take longer out of hours. It has a number of objectives but mostly it's about managing the incident, ensuring it doesn't get worse than it is, and getting as much information as possible to the senior management.

Participant no.77: We don't really have a formal process for risk management. I am it. Because we are small, in staff size rather than revenue, I get to know about... and involved in most projects in some way. So I act as the guidelines for decisions when it comes to risk.

Participant no.26: One of the first activities I did when I got here was to create an actual risk team. We look at each division every week or so to see where we are placing ourselves at risk and we try to support any departments that get into difficulty. The aim is to be proactive, but mostly we just review what has happened retrospectively, or occasionally we'll have an escalating problem and we'll be called to come and help out.

Participant no.68: Someone once asked me to describe our company as an animal... and I called it an Armadillo. Because once you get past this hard outer shell, that is our stated

policy our innards are weak. Policy and processes are just words. It's what our people do that matters and they don't understand risk.

Participant no.48: One of the great successes we've had for our risk management process recently was the formation of a specific crisis management team. Before, if something happened it would be up to the manager in charge to actually handle it, but now we can provide support and help from people who've actually been through it.

Participant no.57: Over the last three years it's changed a lot. We've formalised all of our policies into actual guidelines and procedures. So rather than it just being a goal, we actually have stages to fulfil in order for the work to be agreed on.

Participant no.33: Last year there was a minor flood in one of our buildings... the main problem was that we had to shut down the power to the rest of the building for a week. We had to move a couple of dozen people, find them work space, get them access to their systems and try to keep working. The good thing is that now we know how to operate and my first [phone] call is always to IT.

Participant no.75: The systems we have in place are old now. But they work. They might be cutting edge, but we haven't had any problems up to now. Although I think we could do better if we updated our practices, but then that is a cost issue. Then again if it all goes wrong it is our reputation on the line and I don't think the board realises that.

Participant no.82: I know ways round the system. Technically I should call my boss who gets on to the various directors to get things done. But it works far better when a few of us in the department brainstorm for a while, work out the actions needed and then tell the directors what we need, rather than ask them to sort it out. Much faster and much better at stopping the actual problem.

Participant no.51: Reputation is what we trade on. Because we've had such a strong past compared against our competitors our reputation stands apart showing us as the market leader. Everything we do has to support that because if it falls then we just become any other company in the marketplace.

Participant no.65: As an organisation we have to realise that assets such as our people, buildings, computers are all quite important... our reputation is vital. If we lose peoples' confidence they won't come back to us.

Participant no.40: We're only just starting to make our risk management processes official. Until now it's been a very low priority but we're trying to show that managing our risks is important to us. If we don't do it, and something goes wrong... it'll be senior management who get the blame and they've only just realised it. So now I have to write out all our procedures into policies.

Participant no.54: Because we deal direct with the public we have to walk a tight-rope of balances all the time. We have to make a profit, but we can't be seen to be making it at the expense of our customers. If we ever made a bad call and compromised on safety there would be a lot of clawing back to where we are now.

Participant no.81: It's not about what we do, it's about what the consumers see us doing. So not only do we have to manage [the risks], we have to look like we are managing [the risks].

Participant no.25: Our reputation has always been a major selling point for us. We've been around for [number of] years. 'We're solid as a rock' is the message we try to convey with that. So we have to actually deliver that reputation not just talk about it.

That's where the risk management team come into it; they have to promote the right risks for our clients within the bounds of our own reputation.

Participant no.58: It's just not a priority at the moment and hasn't been every month for the last... actually since I've been there. There's always something else that needs to be done before we can start actually looking at risk in a structured way.

Participant no.71: "... I'd have to say, as an organisation, none. There's me, as a stand alone department subordinate to the board, but as an organisation... no, there really isn't an effort to describe.

Participant no.50: There isn't a process to organise for us. We react to problems as they arise. I should say we're good at doing that, but that's not true... that's all we know how to do.

Participant no.42: Risk management for us is about learning and changing what we do. So to ask – 'how do we organise the process?' I'd have to say very well. We manage the goals, the methods of getting there and we review and feedback into the system every time.

Participant no.53: "[company name] have changed a lot in a short space of time. We're moving all of our systems to focus more on the requirements of our customer and one of those is the need to be assured of continuous service. So we've had to spend a lot of time investigating our risk management goals and methods... everything has been changed and it [risk management] is part of our service now.

Participant no.28: Reputation is what the PR department handle. If we have a problem they deal with it. I don't want to be involved and I don't see the relevance of risk management trying to address it.

Participant no.60: Marketing and sales have an input to our meetings but I can't say they see the point really. If we have to do something about the risks we face we'll do it whether or not it affects our reputation.

Capability

Participant no.68: I don't have enough funding to get trained staff working for me here. As a result I have to get more junior people who ultimately can't do the job because we need leaders for the business and not office workers.

Participant no.81: There are reporting structures in place. But it's not always adhered to. I'd say that at least half the time the project staff are too busy to go through the process so they fill in the forms after it's all finished to show what they need it to show. But at least we have something in place.

Participant no.23: We are trying to change what we do. But since there's never been a system as such we are trying to understand what the current practice is. That way we can improve it. Until now we've not even been able to start that process.

Participant no.69: Within [the company] we have certain measures in place for performance and recently for risk taking. I can call up figures showing how each group has operated for the last few years and at each stage we can weigh figures against

previous experience. Because we have this library of past events we can show where we are going wrong and what is going right.

Participant no.30: It's fairly clear to me that we lack any in-house expertise when it comes to risk management. However, it's difficult to make the case for more personnel or training as that would take away funding or staff from other key areas of operations.

Participant no.36: We have a series of templates from which we can show examples of risk management processes and practices. It means that each time we start something new we don't have to reinvent the wheel. But it gives us a standard process to work to.

Participant no.76: Risk management to us as a concept is still very new. Although I'm nominally in charge of it on the board we don't manage it as such. I keep the rest of the board members updated with what I find, but we are quite aware of our limitations at the moment... there isn't anyone trained in it [risk management] here who could do it.

Participant no.72: The company just isn't in a position to develop risk management. I'm responsible for it on the board, but we don't have the kind of expertise to say that we manage risk.

Participant no.62: The problem is that we are in a constant state of flux. Our policies are changing, our practices are changing... we're just treading water at the moment but at least soon we will have funding to do something about it. Senior management have recognised the problem but there's just nothing to be done at the moment.

Participant no.39: There are a series of limits to which we can work before a greater level of control comes into force. Once a team reaches one of these limits we then review progress based on past actions and experience. Actually it works really well. It's time consuming but each time we can tweak the project and it really helps to show potential for problems that we are facing.

Participant no.31: It's simple. There aren't enough competent risk managers in the marketplace. Each time we employ someone in this role they've proved to be under skilled. We've had to start retraining in house to try and fill these positions but the departments don't like it as we are poaching their most gifted staff away from them.

Participant no.27: Our objective when it comes to risk management is to tick the right boxes for the regulator and our customers. Everything is geared to those two interests. Risk management is under my remit but I don't have the skills or support to actually enact any changes.

Participant no.46: We've traditionally hired consultants on a part time basis to conduct most of our risk management planning, but this is just too expensive in the long term. The departments like it because they only pay a project cost but the board can see the kind of funding this soaks up. But we just can't afford to take on someone as proficient as the consultants full time.

Participant no.48: We've never had a problem when it comes down to it [risk management]... I can't see why that has any reason to change. All this talk about [business] continuity this and recovery sites that... it's just a new industry using scaremongering to develop business.

Participant no.32: Every year we see a development and change in our risk management practice. That's why we set in place a series of reviews and recording measures to show where we've been and how we are looking to move forward. That way we can say to

international customers we will be here in two years time and here in X years time. It means we stay ahead of the game.

Participant no.66: After a review last year we restructured and risk management became a defined task instead of a concept that seemed to be tacked. The risk management function has specific objectives, but we're still learning how that will or should affect the other processes and departments. So it exists certainly, but we're not quite sure what authority it has.

Participant no.34: Each project within [company name] has a risk management element to it. That may be in risk assessments or HAZOP studies, which we regard as a risk management function. But they are individual to projects. We can't enforce a standard process because we've never found a standard task.

Participant no.39: I would have to say that our process is stable, certainly. Now that I report to a board member it does look as though this is going to stay fixed on the agenda for a while. But the organisation is still getting used to thinking [about risk management] like this, so it is slow.

Participant no.24: It's quite easy for us [the board] to layout the system for our risk management practices to follow, but getting expertise and time to conduct it is another matter.

Participant no.63: It took us years to get this far into risk management, but it has been worthwhile. We're at the point now that we can be sure of the same approach and treatment towards risk across all departments. We have a central repository of templates for them to use, and we store all the risk related material they could need access to.

Participant no.45: The progress hasn't been as fast as I would have liked. We've got an agreed set of tools available to us, and each department has the same set up, but I still think we should be further on than we are.

Participant no.73: In three years our risk management efforts have come from nothing to the approach we have now. If I use your terms I would have to describe as having a standardised approach I don't necessarily think we measure the process as such, but it's certainly repeated using the same process. We use a standard structure for the whole organisation...

Participant no.52: We've built up our expertise in house and along with that has come a steadily increasing body of previous work which we use to define the risk thresholds of each department. It means we can quantify the extent to which we are risk seeking or risk averse, which is incredibly useful to us.

Participant no.61: The board need to see figures. Nothing makes sense to them unless it accompanied by a diagram, or even better, a price tag. So we've developed our risk management along those lines. We can actually show them what's been happening in each office [division] and compare them.

Participant no.55: to manage our risks we have to know what our boundaries are. These boundaries might change, but unless we know where they were to start with, we'll never know.

Participant no.51: It's a selling point for us now. We are recognised as a leader in risk management practices and as a result it gets harder not easier. We have to be more proactive in our risk identification and remediation strategies. We have to collate all our information and really study what we could do better.

Participant no.42: The company didn't intend for risk management to become quite so big a deal. The board recognised its importance and gave the risk management team representation at the meetings, but in doing so they started to realise how the risk management process actually underpins everything we do. So now risk management has become an objective of the organisation and, as such, it needs to be measured against other processes, adapted and progressed just as any process is.

Participant no.80: We've had three people in this role [risk management] in less than two years. There've been a number of reasons for this fast turnover... we can't pay enough to get the right people, there aren't enough of the right people, and training someone already here would take too long.

Participant no.27: I could send my staff on dozens of different courses and hope they become more skilled at risk management, but which course? How much should I pay? What qualification should I look for? I'm not the expert – that's why I'm sending them on the training.

Participant no.38: We've hired consultants in the past to train our staff and they've been expensive without due cause. Our staff are left bewildered not educated by them.

Participant no.79: The [senior] management aren't supposed to be skilled in risk management, so I can leave that be, but if we don't have skilled people doing the work and reporting back to them, then there is no process at all. I wouldn't get a human resources person to manage the financial processes, so until we have the expertise in risk management I'm not going to ask someone to put themselves in that position.

Critical balances

Participant no.25: I wrote our policy as part of the company reports a few years ago when risk started becoming such a hot topic. It was a strategy statement... a vision statement I suppose. Our actions should be aiming towards that vision. It's difficult to tell if that is true though.

Participant no.60: Policies mean very little to people on the ground. They have to make decisions based on what they see at the time so we try to not to get in the way by enforcing our policy when they know what works.

Participant no.23: Policy is set by us [the board] and then disseminated through the organisation... the risk management tasks are carried out by department... sometimes they meet somewhere in the middle, sometimes they don't.

Participant no.78: In our annual departmental reviews we've started using company publications as a guide for what we do. Otherwise I can't present to the board and say we've achieved certain targets because we won't have been following the policies they laid out. It just makes us plan more in advance and I think it's slowly working its way into the staff consciousness as they are starting to think in a much more risk aware way.

Participant no.33: Most problems we've faced here have been unforeseen. So an event happens and those in the office at the time have had to deal with it. It's the way it's always been. We have to respond fast, there isn't the time to call a meeting to discuss it because we're all professionals and we know what needs to be done to minimise our

exposures. It happens so often it's not like there's a big crisis every time, just a minor panic as things don't always go our way.

Participant no.65: I've already mentioned the importance we place upon our reputation but that is such an intangible quality... we have to back it up with our risk management processes otherwise our strategy is meaningless.

Participant no.42: The HSE have strict guidelines which we have to follow. That's fair enough we do handle some nasty materials. But we exceed those guidelines by a long way. We have developed crisis teams, who train at least twice a year. We involved senior management in the response and if anything does go wrong we have clear and tested processes for what happens next. A calls B, calls C etc.. and they get the team together talking within at least 20 minutes of the incident.

Participant no.47: We are still a small company compared to our competitors and one of the advantages we have is that everyone knows everyone else. So when things go wrong we will all muck in. It's not about whose responsibility it is. It's up to all of us. So we've tried not to be too prescribed about it all. If it needs doing then someone will cover it. Plus it means that everyone is interested in risk management because we all have to face it if things go wrong and that's really good to see because everyone supports what I do and they are all interested.

Participant no.46: There has to be a meeting point within the organisation's strategy for the risk policy and what we actually do. We can put a great sounding statement on our webpage, annual reports and the like, but the board do realise that it's our deeds not our words which matter.

Participant no.29: When things hit the fan it's always what we said we'd do, rather than what we did that gets reported. Our policies are always used against us. But they're just wish-lists of what the company would like to see happen, it can't always be like that. Operating in [company specific] means that things don't always work as they should and we have to find solutions for that. So when things do go wrong the media can use our own statements to crucify us.

Participant no.58: I've been asked so many times by the board if we are finished with planning yet, and they don't get it. We are never finished. They want a plan that sits on their shelf and they can show people and say 'isn't this good' but I'm trying to get them to understand that it's all about the process of doing the planning that is important. We need to get the staff understanding why we take certain actions, not just proscribe how, because if things do go wrong they'll never happen they way we might think and the plan won't matter anyway.

Participant no.75: We tried developing an overall risk management team for the organisation. They had procedures and guidelines for dealing with all sorts of situations... but they didn't know the departments like the staff did, so we made the decision to move all risk management decisions to the departmental level, and they have far fewer problems now than before.

Participant no.43: Of all the places I've worked this company has been the most realistic in its approach. The plan is reviewed almost constantly and tested annually. I get to actually work with the operating units to develop plans that match their abilities and needs and they learn and change based on what we can show them. That way the plan

fulfils what the board need and I can honestly report that we actually have improved what we do.

Participant no.29: The problem with a formal process of risk management is that it has to be followed. Sounds obvious but at least if there isn't a procedure involved we can react to situations in an adaptive and responsive way.

Participant no.30: We review and update the plan every year. But not much changes other than phone numbers so it's easy to do. It is published every September and goes out to the board members and department heads to hold copies. Once that's done we can show [regulator] the plan and they see what we would do. Simple as that.

Participant no.74: Because we're a central function to the organisation we arrive at departments to run through the [risk] procedures and all they want is the plan. They just want a tick-in-the-box... thanks very much see you next year. It's not helpful and it's not a learning process for anyone.

Participant no.62: There has to be a balance between the plan and the people. It's our people who really get things sorted when the sh*t hits the fan, and I don't think I've ever seen them need to refer to the plan. Except when we don't have some key staff around. Then they can use the plans to cover missing departments of responses.

Participant no.53: Traditionally we've just written the plans and had them sitting on the shelves of the managers waiting for action. But the senior management took on a new approach last year. No new plan was written and instead we ran a scenario... involving all the departments. It scared them witless because no-one had read the previous plans and now they didn't even have that. But it was incredibly useful in getting them to the table and learning about risk management.

Participant no.49: We don't have a plan. I don't think it would be a worthwhile use of time and finance. If things happen we will respond at the time. Our staff would just work from home.

Participant no.61: As a consultant I tended to find organisations being geared towards the report, the plan, the physical document and they neglected the learning of the process. But here it's quite the opposite – the entire purpose is about improving what we do, and that takes involvement and learning.

Appendix D

STORM PRESENTATION SLIDES

The following section contains a series of slides from a presentation given to explain the project as a whole and the STORM model in particular. The presentation was first used at the *viva voce* and includes a number of concepts and points that may be useful to the reader in coalescing their thoughts on the project. The author would ask that all use, citation or quotation of these slides, as with the rest of the thesis, is given full referencing and not used out with its original context.

Slide 1

STORM
Strategic Organisational Risk Management
An investigation of UK risk management practices

Paul S. Robertson

Slide number 1

Slide 2

Summary

- Introductions
- Studying risk
- Process of research
- Key findings
- STORM model
- Successes and limitations
- Contribution to knowledge
- Recommendations
- Revisions
- Questions

Slide number 2

Slide 3

Introductions

- The author
 - Personal
 - Educational
 - Professional
- Project inception
 - Cranfield
 - Why a PhD?
 - Industrial changes

Slide number 3

Slide 4

Studying risk

- Difficulty and importance of definitions
- Assumptions and beliefs
- Industry-academia interface
- Isomorphism

Slide number 4

Slide 5

Process of research

- Qualitative
 - Exploratory, adaptive, grounded theory
 - Social construct
- Interviews
 - Time and depth of research
 - Transcriptions and analysis
 - Coding – axial, open and development of new codes
 - Triangulation

Slide number 5

Slide 6

Key findings...

- Confusion in terminology
- Effects of industrial changes
- Critical Balances
 - Policy vs. action
 - Formal vs. informal
 - Process vs. output

Slide number 6

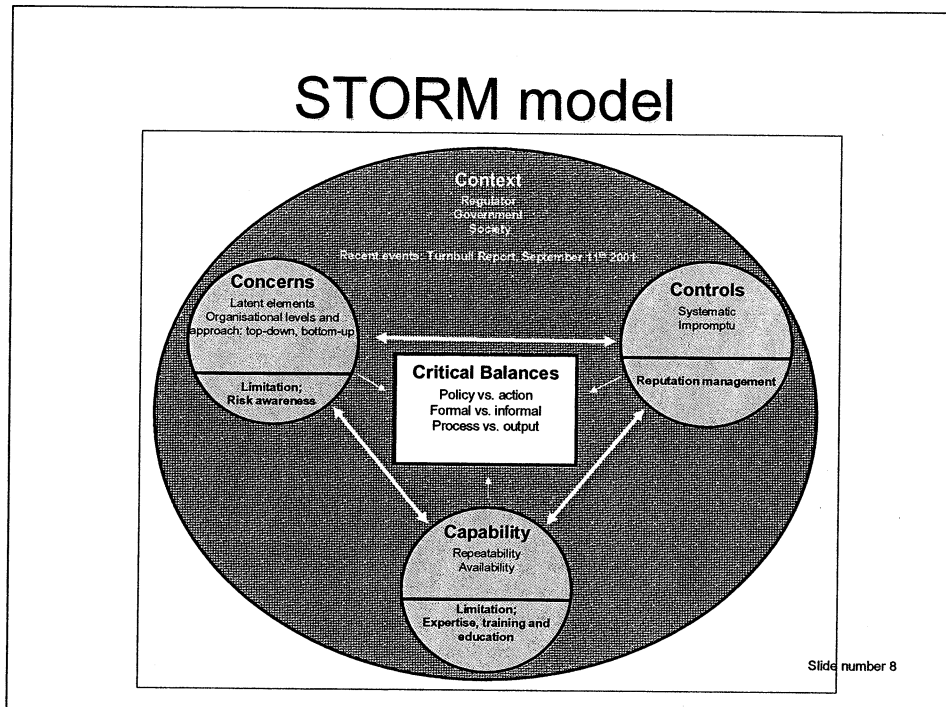
Slide 7

Key findings contd.

- Organisational issues
 - Public relations bias
 - Policy avoidance
 - Ownership
 - 'Them and us'
 - Expertise availability
 - Rewards and bonuses
 - Normalising risk

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Slide 9

- ## Successes...
- Body of literature
 - Non-sector specific (isomorphism)
 - Internal-external relationship
 - Interaction-based model (STORM)
 - Inclusion of limiting factors
- Slide number 9

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...and limitations

- Complexity
- Difficulty of replication
- Utility of case studies

However...

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Contribution to knowledge

- Review and evolution of risk management theory and terminology
- STORM – non-sector specific model of interactive organisational factors affecting strategic risk management
- Confirmation and understanding of the complex role of professional risk managers in the current UK context.

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Recommendations

- Further model development
 - Case study implementations
 - Visual and descriptive simplification
- Additional elements
 - Rapidly changing field
- Element specific research
 - Critical balances

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Revisions

- Abstract
- Sample transcription
- Typographical errors

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Questions

“All men, by nature, desire to know”

Aristotle BC384-322

Paul S. Robertson © 2005

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